



Prospectus Supplement

**John Hancock Variable Insurance Trust
Health Sciences Trust (the fund)**

Supplement dated February 5, 2025 to the current Summary Prospectus, as may be supplemented (the Summary Prospectus)

Effective March 24, 2025 (the Effective Date), Ziad Bakri, the portfolio manager of the fund, will be on sabbatical with an expected return date of July 17, 2025. Jason Nogueira will be covering in the interim as the portfolio manager of the fund and will be primarily responsible for the day-to-day management of the fund's portfolio.

As of the Effective Date and for the duration of the sabbatical, the following information will be amended and restated under the heading "Portfolio management" in the "Fund summary" section for the fund:

Jason Nogueira
Vice President
Managed fund since March 24, 2025

You should read this supplement in conjunction with the Summary Prospectus and retain it for your future reference.

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Prospectus Supplement

John Hancock Variable Insurance Trust

Supplement dated January 30, 2025 to the current Prospectus, as may be supplemented (the Prospectus)

Lifestyle Balanced Portfolio

Lifestyle Conservative Portfolio

Lifestyle Growth Portfolio

Lifestyle Moderate Portfolio (the Lifestyle funds)

As of March 28, 2025 (the Effective Date), Nathan W. Thooft, CFA will no longer serve as a portfolio manager of the Lifestyle funds. As of the Effective Date, Geoffrey Kelley, CFA, David Kobuszewski, CFA and Robert E. Sykes, CFA will continue to serve as portfolio managers of the Lifestyle funds and will be jointly and primarily responsible for the day-to-day management of the Lifestyle funds' portfolios. Accordingly, as of the Effective Date, all references to Mr. Thooft will be removed from the Prospectus.

Managed Volatility Balanced Portfolio

Managed Volatility Conservative Portfolio

Managed Volatility Growth Portfolio

Managed Volatility Moderate Portfolio (the Managed Volatility funds)

As of March 28, 2025 (the Effective Date), Nathan W. Thooft, CFA will no longer serve as a portfolio manager of the Managed Volatility funds. As of the Effective Date, Geoffrey Kelley, CFA, Robert E. Sykes, CFA and Jeffrey Wu will continue to serve as portfolio managers of the Managed Volatility funds and will be jointly and primarily responsible for the day-to-day management of the Managed Volatility funds' portfolios. Accordingly, as of the Effective Date, all references to Mr. Thooft will be removed from the Prospectus.

Strategic Equity Allocation Trust

As of March 28, 2025 (the Effective Date), Nathan W. Thooft, CFA will no longer serve as a portfolio manager of Strategic Equity Allocation Trust. As of the Effective Date, Michael J. Comer, CFA and James Robertson, CIM will continue to serve as portfolio managers of Strategic Equity Allocation Trust and will be jointly and primarily responsible for the day-to-day management of Strategic Equity Allocation Trust's portfolio. Accordingly, as of the Effective Date, all references to Mr. Thooft will be removed from the Prospectus.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

John Hancock Variable Insurance Trust
500 Index Trust
Mid Cap Index Trust
Small Cap Index Trust
Total Stock Market Index Trust (each a fund, and collectively, the funds)

Supplement dated December 18, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

Effective December 31, 2024, Jenny Kim, CFA will be added as a portfolio manager of the funds. Ashikhusein Shahpurwala, CFA and Boncana Maiga, CFA, CIM will continue as portfolio managers of the funds and, along with Jenny Kim, will be jointly and primarily responsible for the day-to-day management of the funds' portfolios.

As of December 31, 2024, the following information will be added under the heading "Portfolio management" in the "Fund summary" section for each fund:

Jenny Kim, CFA

Portfolio Manager

Managed the fund since 2024

As of December 31, 2024, the information in the "Subadvisors and Portfolio Managers" section of the Prospectus under the heading "Manulife Investment Management (North America) Limited ("Manulife IM (NA)")" will be amended to include Jenny Kim as a portfolio manager of the funds within the table of portfolio managers specific to the funds, as well as to include the below in the bulleted list of the portfolio managers below the table:

Jenny Kim, CFA. Portfolio Manager; joined Manulife IM (NA) in 2010.

Effective June 30, 2025 (the effective date), Ashikhusein Shahpurwala will no longer serve as a portfolio manager of the funds. Accordingly, as of the effective date, all references to Ashikhusein Shahpurwala will be removed from the Prospectus. Boncana Maiga and Jenny Kim will continue as portfolio managers of the funds and will be jointly and primarily responsible for the day-to-day management of the funds' portfolios.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust (the Trust)
Disciplined Value International Trust
Health Sciences Trust
Small Cap Value Trust (each a fund)**

Supplement dated December 12, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

DISCIPLINED VALUE INTERNATIONAL TRUST

Effective as of December 12, 2024 (the Effective Date), the following information supplements and supersedes any information to the contrary relating to the fund contained in the Prospectus.

At its meeting held on December 10–12, 2024, the Trust's Board of Trustees of the Trust (the Board) approved a reduction in the fund's management fee schedule as of the Effective Date.

In connection with the Board action described above, as of the Effective Date, the "Annual fund operating expenses" table and the "Expense example" table under "Fees and expenses" in the "Fund summary" section for the fund are revised and restated as follows:

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.68 ¹	0.68 ¹	0.68 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	0.83	1.03	0.78
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.82	1.02	0.77

1 "Management fee" has been restated to reflect the contractual management fee schedule effective December 12, 2024.

2 The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2026, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	84	104	79
3 years	264	327	248
5 years	460	568	432
10 years	1,024	1,259	965

In addition, the management fee table under “Appendix A — Schedule of Management Fees” section of the Prospectus for the fund is amended and restated as follows:

Fund	APR	Advisory Fee Breakpoint
Disciplined Value International Trust	0.710%	— first \$500 million;
	0.690%	— next \$500 million;
	0.680%	— next \$1 billion;
	0.670%	— next \$1 billion;
	0.660%	— next \$2 billion; and
	0.650%	— excess over \$5 billion. [†]

[†]The fee schedule is effective as of December 12, 2024.

HEALTH SCIENCES TRUST

The following information supplements and supersedes any information to the contrary relating to the fund contained in the Prospectus.

At its meeting held on December 10–12, 2024, the Trust’s Board of Trustees approved a reduction in the fund’s management fee to be retroactively effective as of October 1, 2024 (the Effective Date).

In connection with the change described above, the “Annual fund operating expenses” table and the “Expense example” table under “Fees and expenses” in the “Fund summary” section for the fund are hereby revised and restated to reflect the fund’s revised management fee as of the Effective Date:

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.78 ¹	0.78 ¹	0.78 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.09	0.09	0.09
Total annual fund operating expenses	0.92	1.12	0.87
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.91	1.11	0.86

1 “Management fee” has been restated to reflect the contractual management fee schedule effective October 1, 2024.

2 The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2026, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	93	113	88
3 years	292	355	277
5 years	508	616	481
10 years	1,130	1,362	1,072

In addition, the management fee table under "Appendix A — Schedule of Management Fees" section of the Prospectus for the fund is amended and restated as follows:

Fund	APR	Advisory Fee Breakpoint
Health Sciences Trust	1.050%	— first \$500 million;
	1.000%	— next \$250 million;
	0.950%	— excess over \$750 million*;
	0.950%	— next \$250 million;
	0.900%	— next \$500 million;†
	0.770%	— excess over \$1.5 billion**;† and
	0.750%	— excess over \$2 billion.*** ^

*When Aggregate Net Assets exceed \$750 million on any day, the annual rate of advisory fee for that day is 0.950% on all assets.

**When Aggregate Net Assets exceed \$1.5 billion on any day, the annual rate of advisory fee for that day is 0.770% on all assets.

***When Aggregate Net Assets exceed \$2 billion on any day, the annual rate of advisory fee for that day is 0.750% on all assets.

†When Aggregate Net Assets are between \$1 billion and \$1.5 billion or between \$1.875 billion and \$2 billion, the management fee retained by the advisor after payment of the subadvisory fees for the fund will not exceed 0.45% as a percentage of the average daily net assets (on an annualized basis) of the fund.

^The fee schedule above became effective on October 1, 2024.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.

SMALL CAP VALUE TRUST

IMPORTANT NOTICE REGARDING CHANGE IN INVESTMENT POLICY

The following information supplements and supersedes any information to the contrary relating to the fund contained in the Prospectus.

At its meeting held on December 10–12, 2024, the Trust's Board of Trustees (the Board) approved changing the subadvisor for the fund from Wellington Management Company LLP (Wellington Management) to Manulife Investment Management (US) LLC (Manulife IM (US)) effective on or about April 25, 2025 (the Effective Date) subject to approval by shareholders of the fund. Manulife IM (US) is an affiliate of the advisor to the fund and is an indirect wholly owned subsidiary of Manulife Financial Corporation. The Board also approved a reduction in the fund's management fee schedule as of the Effective Date.

A meeting of the shareholders of the fund has been scheduled for April 10, 2025, to seek approval of the subadvisor change. Subject to regulatory and shareholder approval, the subadvisor change is scheduled to occur on the Effective Date.

In connection with the changes described above, and contingent upon shareholder approval of the subadvisor change, the Prospectus is hereby amended as of the Effective Date as follows:

1. All references to Wellington Management are deleted and replaced with Manulife IM (US) as the subadvisor with respect to the fund.

2. The fund's name is changed to Small Cap Core Trust, and all references to Small Cap Value Trust will be changed to reflect the fund's new name.

3. The "Annual fund operating expenses" table and the "Expense example" table under "Fees and expenses" in the "Fund summary" section for the fund are revised and restated as follows:

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.84 ¹	0.84 ¹	0.84 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.95	1.15	0.90
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.94	1.14	0.89

1 "Management fee" has been restated to reflect the contractual management fee schedule effective April 25, 2025.

2 The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2026, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	96	116	91
3 years	302	364	286
5 years	525	632	497
10 years	1,165	1,397	1,107

4. The "Principal investment strategies" in the "Fund summary" section for the fund are revised and restated in their entirety as follows:

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities of small-capitalization companies. (The Board of Trustees can change the fund's investment objective and strategies without shareholder approval. The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund considers small-capitalization companies to be those companies that, at the time of investment, are in the capitalization range of the Russell 2000 Index, which had a maximum market capitalization of \$15.88 billion as of December 31, 2023. The fund generally will not invest in companies that, at the time of purchase, have market capitalizations of \$5 billion or more. Equity securities include common and preferred stocks, rights, warrants, and depositary receipts (including ADRs, American Depositary Shares, European Depositary Receipts, and Global Depositary Receipts).

In managing the fund, the manager emphasizes a bottom-up approach to individual stock selection. The manager looks for companies with durable, niche business models that have the potential to allow them to earn high returns on capital and that are trading at a significant discount to the

manager's estimate of fair value. With the aid of proprietary financial models, companies are screened based on a number of factors, including balance sheet quality, profitability, liquidity, size, and risk profile.

The manager then conducts in-depth fundamental research of individual companies to locate companies that have particular attributes, such as cash flow and earnings growth visibility, manageable risks, including business risk and financial risk, and above-average return on capital.

Stocks considered for inclusion in the portfolio may also be experiencing some type of temporary weakness or short-term mispricing due to various factors, such as an inflection point in earnings power, turnaround situations, or a near-term earnings event.

The fund intends to invest in a number of different sectors. The sectors in which the fund invests are primarily a result of stock selection and may, therefore, vary significantly from its benchmark. The fund may focus its investments in a particular sector or sectors of the economy. The fund may invest up to 10% of its total assets in foreign securities, including in emerging markets, which includes securities for which the relevant reference entity is domiciled outside of the United States, such as ADRs, which trade on U.S. exchanges.

The fund may invest in initial public offerings (IPOs). The fund may also purchase real estate investment trusts (REITs) or other real estate-related equity securities, and certain exchange-traded funds (ETFs). The fund may also purchase warrants and rights on certain underlying securities, both U.S. dollar-denominated and otherwise.

The fund normally will invest 10% or less of its total assets in cash and cash equivalents, including repurchase agreements, money market securities, U.S. government securities, and other short-term investments. The fund may, to a limited extent, engage in derivatives transactions that include futures contracts and foreign currency forward contracts, in each case for the purposes of reducing risk and/or obtaining efficient market exposure.

The fund may invest in cash or money market instruments for the purpose of meeting redemption requests or making other anticipated cash payments.

The fund may deviate from its principal investment strategies during transition periods, which may include the reassignment of portfolio management, a change in investment objective or strategy, a reorganization or liquidation, or the occurrence of large inflows or outflows.

5. The "Principal risks" in the "Fund summary" section for the fund are revised to remove "Financial services sector risk," "Industrials sector risk" and "Value investment style risk" and add the following risks:

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts and futures contracts. Foreign currency forward contracts and futures contracts generally are subject to counterparty risk. Derivatives associated with foreign currency transactions are subject to currency risk.

Preferred stock risk. Preferred stock generally ranks senior to common stock with respect to dividends and liquidation but ranks junior to debt securities. Unlike interest payments on debt securities, preferred stock dividends are payable only if declared by the issuer's board of directors. Preferred stock may be subject to optional or mandatory redemption provisions.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

6. The following disclosure replaces the first paragraph under the heading "Past performance" in the "Fund summary" section for the fund:

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad-based securities market index. The Russell 2000 Value Index shows how the fund's performance compares against another broad measure of market performance. The performance information below

does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future. Prior to April 25, 2025, the fund was managed by a different subadvisor pursuant to different strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor, Manulife Investment Management (US) LLC (Manulife IM (US)). The fund's performance shown below might have differed materially had Manulife IM (US) managed the fund prior to April 25, 2025.

7. In the "Average annual total returns" table under the heading "Past performance" in the "Fund summary" section for the fund, the returns of the Russell 3000 Index are added as stated below:

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series I	14.01	8.80	6.02
Series II	13.85	8.58	5.81
Series NAV	14.07	8.85	6.07
Russell 3000 Index (reflects no deduction for fees, expenses, or taxes) ¹	25.96	15.16	11.48
Russell 2000 Value Index (reflects no deduction for fees, expenses, or taxes) ²	14.65	10.00	6.76

1 The fund has designated the Russell 3000 Index as its new broad-based securities market index in accordance with the revised definition for such an index.

2 Prior to April 25, 2025, the fund's benchmark was the Russell 2000 Value Index. Effective April 25, 2025, the fund's benchmark index is the Russell 3000 Index. The Russell 3000 Index is better aligned with the fund's investment strategy.

8. The information regarding the subadvisor under the heading "Investment management" in the "Fund summary" section for the fund is revised and restated in its entirety as follows:

Subadvisor Manulife Investment Management (US) LLC

9. The information under the heading "Portfolio management" in the "Fund summary" section for the fund is revised and restated in its entirety as follows:

Ryan Davies, CFA
Portfolio Manager
 Managed the fund since 2025

Joseph Nowinski
Senior Portfolio Manager
 Managed the fund since 2025

Bill Talbot, CFA
*Senior Portfolio Manager,
 Head of US Small Cap Equities*
 Managed the fund since 2025

10. The "ADDITIONAL INFORMATION ABOUT THE FUNDS' PRINCIPAL RISKS" section of the Prospectus is revised to add the following risk:

Preferred stock risk

Preferred stock generally has a preference as to dividends and liquidation over an issuer's common stock but ranks junior to debt securities in an issuer's capital structure. Unlike interest payments on debt securities, preferred stock dividends are payable only if declared by the issuer's board of directors. Preferred stock also may be subject to optional or mandatory redemption provisions.

11. The information in the "Subadvisors and Portfolio Managers" section of the Prospectus under the heading "Manulife Investment Management (US) LLC ("Manulife IM (US)")" is amended to include the following:

Fund
Small Cap Value Trust

Portfolio Managers
 Ryan Davies, CFA
 Joseph Nowinski
 Bill Talbot, CFA

- *Ryan Davies, CFA*. Portfolio Manager. Managed the fund since 2025. Joined Manulife IM (US) in 2018.
- *Joseph Nowinski*. Senior Portfolio Manager. Managed the fund since 2025. Joined Manulife IM (US) in 2013.
- *Bill Talbot, CFA*. Senior Portfolio Manager, Head of US Small Cap Equities. Managed the fund since 2025. Joined Manulife IM (US) in 2013.

12. In addition, the management fee table under "Appendix A — Schedule of Management Fees" section of the Prospectus for the fund is amended and restated as follows:

Fund	APR	Advisory Fee Breakpoint
Small Cap Value Trust	0.870%	— first \$300 million;
	0.830%	— next \$300 million;
	0.815%	— next \$300 million; and
	0.800%	— excess over \$900 million. [†]

[†]The fee schedule is effective as of April 25, 2025.

The foregoing is not a solicitation of any proxy. For important information regarding Small Cap Value Trust or to receive a free copy of the proxy statement, when available, or Prospectus or SAI relating to the proposed shareholder vote, please call the appropriate phone number listed below. The proxy statement, Prospectus and SAI contains important information about fund objectives, strategies, fees, expenses, risks, and the Board's considerations in approving the proposal to be presented for shareholder approval at the Shareholder Meeting. The proxy statement, Prospectus and SAI will be available for free on the SEC's website (www.sec.gov). Please read the proxy statement, Prospectus, and SAI carefully before voting or when considering whether to vote for the proposal.

For John Hancock Life Insurance Company (U.S.A.) variable annuity contracts: (800) 344-1029

For John Hancock Life Insurance Company (U.S.A.) variable life contracts: (800) 732-5543

For John Hancock Life Insurance Company of New York variable annuity contracts: (800) 551-2078

For John Hancock Life Insurance Company of New York variable life contracts: (800) 732-5543

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust (the Trust)
Science & Technology Trust (the fund)**

Supplement dated October 1, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

The following information supplements and supersedes any information to the contrary relating to the fund contained in the Prospectus.

At a special meeting of shareholders of the fund held on October 1, 2024, the fund's shareholders approved a proposal to change the fund's diversification status from diversified to non-diversified effective on October 1, 2024 (the Effective Date).

Accordingly, as of the Effective Date, the following disclosure is added as the final paragraph of the fund's "Principal investment strategies" in the "Fund summary" section:

The fund is a non-diversified fund, which means that it may invest in a smaller number of issuers than a diversified fund and may invest more of its assets in the securities of a single issuer.

Additionally, as of the Effective Date, the following risk is added to the fund's "Principal risks" in the "Fund summary" section:

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust (the Trust)
High Yield Trust (the fund)**

Supplement dated September 26, 2024 to the current Prospectus (the Prospectus), as may be supplemented

IMPORTANT NOTICE REGARDING CHANGE IN INVESTMENT POLICY

The following information supplements and supersedes any information to the contrary relating to the fund contained in the current Prospectus.

At its meeting held on September 24-26, 2024, the Trust's Board of Trustees (the Board) approved changing the subadvisor for the fund from Western Asset Management Company, LLC (WAMCO) to Manulife Investment Management (US) LLC (Manulife IM (US)) effective on or about February 7, 2025 (the Effective Date) subject to approval by shareholders of the fund. Western Asset Management Company Limited will no longer serve as subadvisor to the Fund as of the Effective Date. Manulife IM (US) is an affiliate of the advisor to the fund and is an indirect wholly owned subsidiary of Manulife Financial Corporation. The Board also approved a reduction in the fund's management fee schedule as of the Effective Date.

A meeting of the shareholders of the fund has been scheduled for January 15, 2025, to seek approval of the subadvisor change. Subject to regulatory and shareholder approval, the subadvisor change is scheduled to occur on the Effective Date.

In connection with the changes described above, and contingent upon shareholder approval of the subadvisor change, the Prospectus is hereby amended as of the Effective Date as follows:

1. All references to WAMCO are deleted and replaced with Manulife IM (US) as the subadvisor with respect to the fund.
2. All references to Western Asset Management Company Limited are deleted.
3. The "Investment objective" in the "Fund summary" section of the Prospectus is revised and restated in its entirety as follows:

The fund seeks high current income. Capital appreciation is a secondary goal.

4. The "Principal investment strategies" of the "Fund summary" section of the Prospectus are revised and restated in their entirety as follows:

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in U.S. and foreign fixed-income securities rated BB/Ba or lower and their unrated equivalents. Bonds that are rated at or below BB by S&P Global Ratings (S&P) or Fitch Ratings, Inc. (Fitch Ratings) or Ba by Moody's Investors Service, Inc. (Moody's) are considered junk bonds. These may include, but are not limited to, domestic and foreign corporate bonds, government obligations, debentures and notes, convertible securities, preferred securities, and domestic and foreign government obligations. No more than 10% of the fund's total assets may be invested in securities that are rated in default by S&P or Moody's. The fund's investment policies are based on credit ratings at the time of purchase. There is no limit on the fund's average maturity.

In managing the fund's portfolio, the manager focuses on industry allocation and securities selection, deciding which types of industries to emphasize at a given time and then which individual securities to buy. The manager uses top-down analysis to determine which industries may benefit from current and future changes in the economy.

The fund may hold up to 20% of its total assets in the securities of companies in any one industry and up to 10% of its total assets in the securities of any individual issuer.

In choosing individual securities, the manager uses bottom-up research to find securities that appear comparatively undervalued. The manager looks at the financial condition of the issuers, as well as the collateralization and other features of the securities themselves. The fund typically invests in a broad range of industries.

The fund may invest in both investment-grade and below-investment-grade asset-backed securities, including asset-backed securities rated BB/Ba or lower by S&P, Fitch Ratings or Moody's and their unrated equivalents.

The fund may use certain higher-risk investments, including restricted or illiquid securities, bank loans and derivatives, which include futures contracts on securities, indexes and foreign currency; options on futures contracts, securities, indexes and foreign currency; interest-rate, foreign currency and credit default swaps; and foreign currency forward contracts, in each case for the purposes of reducing risk, obtaining efficient market exposure, and/or enhancing investment returns. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risk of being a direct lender. In addition, the fund may invest up to 20% of its assets in U.S. and foreign common stocks of companies of any size.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund's investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

The fund may trade securities actively, which could increase its transaction costs (thus lowering performance) and increase your taxable distributions.

The fund may temporarily invest its assets extensively in investment-grade short-term securities or part or all its assets in cash or cash equivalents for the purpose of meeting redemption requests or making other anticipated cash payments.

5. The "Principal risks" of the "Fund summary" section of the Prospectus are revised to remove "Repurchase agreements risk" and add the following risks:

Defaulted debt risk. Investing in defaulted debt securities is speculative and involves substantial risks in addition to those of non-defaulted high-yield securities. Defaulted debt securities generally do not generate interest payments. Principal on defaulted debt might not be repaid, and a fund could lose up to its entire investment.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

U.S. government agency obligations risk. The fund invests in obligations issued by agencies and instrumentalities of the U.S. government. Government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

6. The following disclosure replaces the first paragraph under the heading “Past performance” in the “Fund summary” section:

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad-based securities market index. The ICE BofA U.S. High Yield Index and the Bloomberg U.S. High Yield 2% Capped Index show how the fund’s performance compares against another broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future. Prior to February 7, 2025, the fund was managed by a different subadvisor pursuant to different strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor, Manulife Investment Management (US) LLC (Manulife IM (US)). The fund’s performance shown below might have differed materially had Manulife IM (US) managed the fund prior to February 7, 2025.

7. In the “Average annual total returns” table under the heading “Past performance” in the “Fund summary” section, the returns of the Bloomberg U.S. Aggregate Bond Index and the ICE BofA U.S. High Yield Index are added as stated below.

Average Annual Total Returns for Period Ended 12/31/2023

Average annual total returns (%)	1 Year	5 Year	10 Year
Series I	13.05	4.90	3.54
Series II	12.70	4.70	3.33
Series NAV	12.87	4.95	3.58
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes) ¹	5.53	1.10	1.81
ICE BofA U.S. High Yield Index (reflects no deduction for fees, expenses, or taxes) ²	13.46	5.21	4.51
Bloomberg U.S. High Yield 2% Capped Index (reflects no deduction for fees, expenses, or taxes)	13.44	5.35	4.59

¹ The fund has designated the Bloomberg U.S. Aggregate Bond Index as its new broad-based securities market index in accordance with the revised definition for such an index.

² Prior to February 7, 2025, the fund’s benchmark index was the Bloomberg U.S. High Yield 2% Issuer Capped Index. Effective February 7, 2025, the fund’s benchmark index is the ICE BofA U.S. High Yield Index. The ICE BofA U.S. High Yield Index is better aligned with the fund’s investment strategy.

8. The information regarding the subadvisor under the heading “Investment management” in the “Fund summary” section is revised and restated in its entirety as follows:

Subadvisor Manulife Investment Management (US) LLC (Manulife IM (US))

9. In the “Fund summary” section, the information under the heading “Portfolio management” is revised and restated in its entirety as follows:

James Gearhart, CFA
Portfolio Manager
Managed the fund since 2025

Jonas Grazulis, CFA
Portfolio Manager
Managed the fund since 2025

Caryn E. Rothman, CFA
Senior Portfolio Manager, Head of Global Credit
Managed the fund since 2025

10. The information in the “Subadvisors and Portfolio Managers” section of the Prospectus under the heading “Manulife Investment Management (US) LLC (“Manulife IM (US)”)” is amended to include the following:

Funds
High Yield Trust

Portfolio Managers
James Gearhart, CFA
Jonas Grazulis, CFA
Caryn E. Rothman, CFA

- *James Gearhart, CFA.* Portfolio Manager. Managed the fund since 2025. Joined Manulife IM (US) in 2015. Began business career in 2011.
 - *Jonas Grazulis, CFA.* Portfolio Manager. Managed the fund since 2025. Joined Manulife IM (US) in 2011. Began business career in 2011.
 - *Caryn E. Rothman, CFA.* Senior Portfolio Manager, Head of Global Credit. Managed the fund since 2025. Joined Manulife IM (US) in 1996. Began business career in 1996.
11. In addition, the advisory fee schedule for the fund, as shown in “Appendix A — Schedule of Management Fees,” is revised and restated as follows:

0.630% — first \$150 million; and
0.600% — next \$350 million; and
0.580% — next \$2 billion; and
0.550% — excess over \$2.5 billion.*

(Aggregate Net Assets include the net assets of the fund and High Yield Fund, a series of John Hancock Bond Trust).

* The fee schedule above will become effective on or about February 7, 2025.

The foregoing is not a solicitation of any proxy. For important information regarding High Yield Trust or to receive a free copy of the proxy statement, when available, or Prospectus or SAI relating to the proposed shareholder vote, please call the appropriate phone number listed below. The proxy statement, Prospectus and SAI contains important information about fund objectives, strategies, fees, expenses, risks, and the Board’s considerations in approving the proposal to be presented for shareholder approval at the Shareholder Meeting. The proxy statement, Prospectus and SAI will be available for free on the SEC’s website (www.sec.gov). Please read the proxy statement, Prospectus, and SAI carefully before voting or when considering whether to vote for the proposal.

For John Hancock Life Insurance Company (U.S.A.) variable annuity contracts: (800) 344-1029

For John Hancock Life Insurance Company (U.S.A.) variable life contracts: (800) 732-5543

For John Hancock Life Insurance Company of New York variable annuity contracts: (800) 551-2078

For John Hancock Life Insurance Company of New York variable life contracts: (800) 732-5543

You should read this supplement in conjunction with the Prospectus and retain it for future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust
International Small Company Trust (the fund)**

Supplement dated August 29, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

Effective immediately, Arun Keswani, CFA no longer serves as a portfolio manager for the fund. Accordingly, effective immediately, all references to Mr. Keswani are removed from the Prospectus.

Effective immediately, Jed S. Fogdall and Joel P. Schneider continue to serve as portfolio managers and are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust
Small Cap Value Trust (the fund)**

Supplement dated July 10, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

As of June 30, 2025 (the Effective Date), Shaun F. Pedersen will no longer serve as a portfolio manager for the fund. Accordingly, as of the Effective Date, all references to Mr. Pedersen will be removed from the Prospectus.

As of the Effective Date, Edmond C. Griffin, CFA and Danielle S. Williams, CFA will continue to serve as portfolio managers and be jointly and primarily responsible for the day-to-day management of the fund's portfolio.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.

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Prospectus Supplement

**John Hancock Variable Insurance Trust (the Trust)
Science & Technology Trust (the fund)**

Supplement dated June 27, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

The following information supplements and supersedes any information to the contrary relating to the fund contained in the Prospectus.

At its meeting held on June 25-27, 2024, the Board of Trustees of the Trust (the Board), including the Trustees who are not “interested persons” (as defined in the Investment Company Act of 1940, as amended (the “1940 Act”)) (the “Independent Trustees”), approved that a special meeting of shareholders of the fund will be held on or about October 1, 2024 at 1:30 P.M., Eastern Time (the “Shareholder Meeting”). The Board, including the Independent Trustees, recommends that the fund’s shareholders approve a proposal that will be presented at the Shareholder Meeting to change the fund’s diversification status from diversified to non-diversified. If approved, the change to the diversification status will become effective when the fund’s Prospectus and Statement of Additional Information (the “SAI”) are revised or supplemented to reflect the change, which is expected to be on or about October 1, 2024.

Note that this Shareholder Meeting is limited to shareholders of the fund. Shareholders of the fund as of August 6, 2024 are entitled to vote at the meeting.

Please see the fund’s Prospectus, proxy statement (when filed), and SAI for more details.

The foregoing is not a solicitation of any proxy. For important information regarding Science & Technology Trust or to receive a free copy of the proxy statement, when available, or Prospectus or SAI relating to the proposed shareholder vote, please call the appropriate phone number listed below. The proxy statement, Prospectus, or SAI contains important information about fund objectives, strategies, fees, expenses, risks, and the Board’s considerations in approving the proposal to be presented for shareholder approval at the Shareholder Meeting. The proxy statement, Prospectus, or SAI will be available for free on the SEC’s website (www.sec.gov). Please read the proxy statement, Prospectus, and SAI carefully before voting or when considering whether to vote for the proposal.

For John Hancock Life Insurance Company (U.S.A.) variable annuity contracts: (800) 344-1029

For John Hancock Life Insurance Company (U.S.A.) variable life contracts: (800) 732-5543

For John Hancock Life Insurance Company of New York variable annuity contracts: (800) 551-2078

For John Hancock Life Insurance Company of New York variable life contracts: (800) 732-5543

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

**John Hancock Variable Insurance Trust
American Growth-Income Trust (the fund)**

Supplement dated June 1, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

Effective immediately, Donald D. O'Neal, William L. Robbins and Carlos A. Schonfeld no longer serve as portfolio managers of the fund's master fund, the Growth-Income Fund (the master fund), a series of American Funds Insurance Series. Accordingly, effective immediately, all references to Messrs. O'Neal, Robbins and Schonfeld are removed from the Prospectus.

In addition, effective immediately, Caroline Jones is added as one of the portfolio managers of the master fund.

Effective immediately, Charles E. Ellwein, J. Blair Frank and Keiko McKibben continue to serve as portfolio managers of the master fund and, along with Caroline Jones, are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Effective immediately, the following amends and supplements the fund's portfolio manager information under the heading "Portfolio management":

Caroline Jones

Partner – Capital Research Global Investors
Managed fund since 2024

Effective immediately, the information in the "Subadvisors and Portfolio Managers" section of the Prospectus under the heading "Capital Research and Management Company ("CRMC")" is amended to add disclosure relating to Caroline Jones as one of the portfolio managers of the master fund of which the fund is a feeder fund:

**Portfolio Manager
for the Series/Title
(If Applicable)**

**Primary Title with Investment Advisor
(or Affiliate) and Investment Experience
During Past Five Years**

**Portfolio Manager's Role in
Management of the Fund(s)**

Caroline Jones

Partner – Capital Research Global Investors
Investment professional for 27 years in total;
20 years with CRMC or affiliate

Serves as an equity portfolio manager
for Growth-Income Fund

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



Prospectus Supplement

John Hancock Variable Insurance Trust (the Trust) Emerging Markets Value Trust (the fund)

Supplement dated April 17, 2024 to the current Prospectus, as may be supplemented (the Prospectus)

Effective on or about May 29, 2024 (the “Effective Date”), the following information supplements and supersedes any information to the contrary relating to the fund contained in the current Prospectus.

At a meeting held on March 25-28, 2024, the Board of Trustees of the Trust (the Board) approved changes to the fund’s subadvisory arrangements such that Boston Partners Global Investors, Inc. (Boston Partners) will be the sole subadvisor to the fund. Accordingly, as of the Effective Date, all references to Dimensional Fund Advisors LP and its portfolio managers as part of the fund’s portfolio management team will be removed from the Prospectus. In addition, at the same meeting, the Board also approved a reduction in the fund’s management fee schedule as of the Effective Date.

In connection with the Board actions described above, as of the Effective Date, the Prospectus will be further hereby amended as follows:

1. The fund’s name will be changed to Disciplined Value Emerging Markets Equity Trust, and all references to Emerging Markets Value Trust will be changed to reflect the fund’s new name.
2. The “Annual fund operating expenses” table and the “Expense example” table under “Fees and expenses” in the “Fund summary” section of the Prospectus for the fund will be amended and restated as follows:

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.76 ¹	0.76 ¹	0.76 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.21	0.21	0.21
Total annual fund operating expenses	1.02	1.22	0.97
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	1.01	1.21	0.96

- 1 “Management fee” has been restated to reflect the contractual management fee schedule effective May 29, 2024.
- 2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense Example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions, your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	103	123	98
3 years	324	386	308
5 years	562	669	535
10 years	1,247	1,476	1,189

3. The “Principal investment strategies” portion of the “Fund summary” section of the Prospectus for the fund will be revised and restated in its entirety as follows:

The fund will pursue its objective through a value oriented, research-driven strategy of investing in equity securities and financial instruments with equity like characteristics designed to provide exposure to emerging markets. Securities are selected by the adviser using its “three circles” approach which combines a quantitative screening with a fundamental bottom-up selection process. This investment strategy is grounded in the following principles: (1) low valuation stocks outperform high valuation stocks; (2) companies with strong fundamentals, e.g., high and sustainable returns on invested capital, outperform companies with weak fundamentals; and (3) stocks with positive business momentum, e.g., rising earnings estimates, outperform stocks with negative business momentum. The adviser examines various factors in determining the value characteristics of issuers, including price-to-book value ratios and price-to-earnings ratios. These value characteristics are examined in the context of the issuer’s operating and financial fundamentals, such as return-on-equity and earnings growth and cash flow.

The fund intends, under normal circumstances, to invest at least 80% of its net assets (including borrowings for investment purposes) in the equity securities of emerging market issuers, related derivative instruments and other equity investments that are tied economically to emerging market countries. The adviser considers an emerging market country to include any country that is: 1) generally recognized to be an emerging market country by the international financial community, including the World Bank; 2) classified by the United Nations as a developing country; or 3) included in the MSCI Emerging Markets Index. Due to the unique relationship between China and its separately administered regions, the Adviser includes Hong Kong and Macau as emerging markets, independent of above definitions 1 through 3. The adviser determines that an investment is tied economically to an emerging market if such investment satisfies one or more of the following conditions: 1) the issuer’s primary trading market is in an emerging market; 2) the issuer is organized under the laws of, derives at least 50% of its revenue from, or has at least 50% of its assets in emerging markets; 3) the investment is included in an index representative of emerging markets; and 4) the investment is exposed to the economic risks and returns of emerging markets.

In managing the fund’s portfolio, the adviser will seek to identify mispriced publicly traded equity securities of emerging market companies and purchase securities that the adviser believes will outperform, emphasizing low valuation, positive business momentum and high quality. The fund generally invests in the equity securities of issuers the manager believes are undervalued. The manager applies a bottom-up stock selection process using a combination of fundamental and quantitative analysis of issuer-specific factors such as price-to-book value, price-to-sales and earnings ratios, dividend yields, strength of management, and cash flow.

The fund’s portfolio is rebalanced regularly to maintain the optimal risk/return trade-off. The Adviser assesses each stock’s changing characteristics relative to its contribution to portfolio risk. The Adviser will sell a stock that the adviser believes no longer offers an appropriate return-to-risk tradeoff. The Fund’s investment adviser may engage in active trading, and will not consider portfolio turnover a limiting factor in making decisions for the Fund.

The equity securities in which the fund will invest, which may include equity securities of non-U.S. issuers that are traded in the markets of the United States, include equity securities issued by large-, mid- and small- or micro-cap companies, as well as exchange-traded and over-the-counter common and preferred stocks, warrants, options, rights, convertible securities, sponsored and unsponsored depositary receipts and shares, trust certificates, limited partnership interests, shares of other investment companies (including exchanged-traded funds (ETFs)), real estate investment trusts (REITs) and equity participations. An equity participation is a type of loan that gives the lender a portion of equity ownership in a property, in addition to principal and interest payments. A convertible security is a bond, debenture, note, preferred stock or other security that may be converted into or exchanged for a prescribed amount of common stock of the same or a different issuer within a particular period of time at a specified price or formula. The fund may invest in securities of companies operating for three years or less (unseasoned issuers).

The fund may invest up to 20% of its net assets in high yield debt obligations (commonly known as junk bonds), such as bonds and debentures, used by corporations and other business organizations (e.g., trusts or limited liability companies). Such high yield debt obligations are not considered to be investment grade. Junk bonds are rated BB or lower by S&P Global, or have a comparable rating by another nationally recognized statistical rating organization (or, if unrated are determined by the adviser to be of comparable quality at the time of investment). The fund may invest in securities of the lowest rating category, including securities in default. The adviser may, but is not required to, sell a bond or note held by the fund in the event that its credit rating is downgraded. The fund will primarily invest in fixed income instruments, including high yield debt obligations, when the fund believes that such instruments offer a better risk/reward profile than comparable equity opportunities.

To meet margin requirements, redemptions or pending investments, the fund may also temporarily hold a portion of its assets in full faith and credit obligations of the United States government and in short-term notes, commercial paper or other money market instruments.

The adviser will sell a stock when it no longer meets one or more investment criteria, either through obtaining target value or due to an adverse change in fundamentals or business momentum. Each holding has a target valuation established at purchase, which the adviser constantly monitors and adjusts as appropriate.

In general, the fund's investments will be spread over a number of industries and, as a matter of policy, the Fund is limited to investing less than 25% of its total assets in any one industry, except that the fund may invest in exchange traded funds to the extent permitted by the Investment Company Act of 1940, as amended (1940 Act), and applicable SEC orders.

The fund may participate as a purchaser in initial public offerings of securities (IPOs). An IPO is a company's first offering of stock to the public.

The fund may invest up to 15% of its net assets in illiquid investments, including investments that are illiquid by virtue of the absence of a readily available market or legal or contractual restrictions on resale.

The fund may also seek to increase its income by lending portfolio securities.

The fund will invest in derivatives, including put and call options, futures, contracts for differences, forward contracts and swaps, in lieu of investing directly in a security, currency or instrument, for hedging and non-hedging purposes. Contracts for differences offer exposure to price changes in an underlying security without ownership of such security, typically by providing investors the ability to trade on margin. The fund's investments in derivative instruments may be leveraged and result in losses exceeding the amounts invested.

4. The following risks will be added to the fund's "Principal risks" in the "Fund summary" section of the Prospectus for the fund:

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

5. The following risks to the fund's "Principal risks" in the Fund summary section of the Prospectus for the fund will be revised and restated in their entirety as follows:

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

6. The following disclosure will be added after the first paragraph under “Past performance” in the “Fund summary” section of the Prospectus for the fund:

A note on performance

Prior to May 29, 2024, the fund was managed by a different subadvisor pursuant to different investment strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor. The fund’s performance shown below might have differed materially had the current subadvisor managed the fund prior to May 29, 2024.

7. David Kim will be the portfolio manager of the fund. Mr. Kim will be primarily responsible for the day-to-day management of the fund’s portfolio.

The following will replace in its entirety the subadvisor information in the “Fund Summary” section of the Prospectus for the fund under the heading “Investment management”:

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Boston Partners Global Investors, Inc.

Additionally, the following will replace in its entirety the portfolio manager information in the “Fund summary” section of the Prospectus for the fund under the heading “Portfolio management”:

David Kim

Portfolio Manager

Managed fund since 2024

8. The following fund information will be added under “Subadvisors and Portfolio Managers – Boston Partners Global Investors, Inc. (“Boston Partners”)” in the “Management” section of the Prospectus:

Fund	Portfolio Manager
Disciplined Value Emerging Markets Equity Trust	David Kim

David Kim. Portfolio Manager. Managed the fund since 2024. Joined Boston Partners in 2018.

9. The management fee table under “Appendix A: Schedule of Management Fees” section of the Prospectus for the fund will be amended and restated as follows:

Fund	APR	Advisory Fee Breakpoint
Disciplined Value Emerging Markets Equity Trust	0.780%	— first \$100 million;
	0.750	— next \$900 million;
	0.740	— next \$1 billion; and
	0.730	— excess over \$2 billion. [†]

[†] The fee schedule above became effective on May 29, 2024.

You should read this supplement in conjunction with the Prospectus and retain it for your future reference.



John Hancock Variable Insurance Trust

200 Berkeley Street, Boston, Massachusetts 02116

John Hancock Variable Insurance Trust (“JHVIT” or the “Trust”) is an open-end management investment company, commonly known as a mutual fund. Shares of JHVIT are not offered directly to the public but are sold only to insurance companies and their separate accounts as the underlying investment option for variable annuity and variable life insurance contracts (“variable contracts”). JHVIT provides a range of investment objectives through separate investment portfolios or funds (each a “fund,” collectively the “funds”). The following funds are described in this Prospectus. JHVIT offers Series NAV, Series I, Series II and Series III shares, although not all funds offer all classes of shares. The class ticker symbols are noted below, as applicable.

	Series I	Series II	Series III	Series NAV		Series I	Series II	Series III	Series NAV
500 Index Trust	JFIVX	JAGKX	—	JAGMX	Lifestyle Moderate Portfolio	JHMPX	JAIPX	—	JAIOX
Active Bond Trust	JAHFX	JAHEX	—	JAHDX	Managed Volatility Balanced Portfolio	JELBX	JAJRX	—	JAIYX
American Asset Allocation Trust	JAHZX	JAIFX	JAIDX	—	Managed Volatility Conservative Portfolio	JELCX	JAISX	—	JAIUX
American Global Growth Trust	JAQJX	JAHWX	JAHVX	—	Managed Volatility Growth Portfolio	JELGX	JAJAX	—	JAIZX
American Growth Trust	JAHJX	JAHKX	JAHGX	—	Managed Volatility Moderate Portfolio	JELMX	JAIWX	—	JAIVX
American Growth-Income Trust	JAHQX	JahrX	JAHUX	—	Mid Cap Growth Trust	JAETX	JAEUX	—	JAEVX
American International Trust	JahlX	JAHMX	JAHPX	—	Mid Cap Index Trust	JECIX	JAEZX	—	JAEYX
Blue Chip Growth Trust	JADZX	JADYX	—	JAEDX	Mid Value Trust	JEMUX	JAGYX	—	JAGWX
Capital Appreciation Trust	JAFHX	JAFJX	—	JAFGX	Money Market Trust	JHOXX	JAAXX	—	JABXX
Capital Appreciation Value Trust	JAFPX	JAFQX	—	JAFRX	Opportunistic Fixed Income Trust	JAEJX	JAEHX	—	JAEKX
Core Bond Trust	JADKX	JAAEX	—	JVCNX	Real Estate Securities Trust	JADBX	JAJLX	—	JAJMX
Disciplined Value International Trust	JAJHX	JAJIX	—	JAJJX	Science & Technology Trust	JESTX	JAFUX	—	JAFSX
Emerging Markets Value Trust	JAJBX	JEMTX	—	JHVTX	Select Bond Trust	JAFZX	JHBDX	—	JAGBX
Equity Income Trust	JAEGX	JAEFX	—	JAEEX	Short Term Government Income Trust	JAJPX	JAFWX	—	JAFYX
Financial Industries Trust	JEFSX	JEFCX	—	JAFNX	Small Cap Index Trust	JESIX	JAJOX	—	JAEWX
Fundamental All Cap Core Trust	JEQAX	JFLGX	—	JADDX	Small Cap Opportunities Trust	JADLX	JADPX	—	JADMX
Fundamental Large Cap Value Trust	JVFLX	JADJX	—	JADIX	Small Cap Stock Trust	JESGX	JAGQX	—	JAGPX
Global Equity Trust	JFEGX	JAJFX	—	JAJGX	Small Cap Value Trust	JESVX	JAGZX	—	JAHBX
Health Sciences Trust	JEHSX	JAFKX	—	JAFMX	Small Company Value Trust	JAEPX	JAERX	—	JAEQX
High Yield Trust	JAELX	JAEQX	—	JAEMX	Strategic Equity Allocation Trust	—	—	—	JAFVX
International Equity Index Trust	JIEQX	JAJEX	—	JVANX	Strategic Income Opportunities Trust	JESNX	JESPX	—	JVRNX
International Small Company Trust	JAJCX	JAADX	—	JAJDX	Total Bond Market Trust	JTBMX	JAGVX	—	JAGUX
Investment Quality Bond Trust	JADUX	JADSX	—	JAJNX	Total Stock Market Index Trust	JETSX	JAFFX	—	JAFEX
Lifestyle Balanced Portfolio	JHBPX	JAILX	—	JAINX	Ultra Short Term Bond Trust	JAGJX	JAGEX	—	JAGFX
Lifestyle Conservative Portfolio	JHCIX	JAIRX	—	JAIQX					
Lifestyle Growth Portfolio	JHGFX	JAIKX	—	JAIJX					

As with all mutual funds, the Securities and Exchange Commission and Commodity Futures Trading Commission have not approved or disapproved these securities or passed upon the adequacy of this Prospectus. Any representation to the contrary is a criminal offense. No person, including any dealer or salesperson, has been authorized to give any information or to make any representations, unless the information or representation is set forth in this Prospectus. If any such unauthorized information or representation is given, it should not be relied upon as having been authorized by JHVIT, the advisor or any subadvisors to JHVIT or the principal underwriter of the shares. This Prospectus is not an offer to sell shares of JHVIT in any state where such offer or sale would be prohibited.

Prospectus dated April 29, 2024

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Fund summary

500 Index Trust

Investment objective

To approximate the aggregate total return of a broad-based U.S. domestic equity market index.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.46	0.46	0.46
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.04	0.04	0.04
Total annual fund operating expenses	0.55	0.75	0.50
Contractual expense reimbursement	-0.25 ¹	-0.25 ¹	-0.25 ¹
Total annual fund operating expenses after expense reimbursements	0.30	0.50	0.25

1 The advisor contractually agrees to reduce its management fee or, if necessary, make payment to the fund in an amount equal to the amount by which expenses of the fund exceed 0.25% of average daily net assets of the fund. For purposes of this agreement, “expenses of the fund” means all fund expenses, excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, (e) class-specific expenses, (f) borrowing costs, (g) prime brokerage fees, (h) acquired fund fees and expenses paid indirectly, and (i) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the advisor and the fund based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	31	51	26
3 years	151	215	135
5 years	282	392	255
10 years	665	907	604

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 2% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund seeks to approximate the aggregate total return of a broad-based U.S. domestic equity market index. To pursue this goal, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) at the time of investment in (a) the common stocks that are included in the S&P 500 Index and (b) securities (which may or may not be included in the S&P 500 Index) that the subadvisor believes as a group will behave in a manner similar to the index. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The subadvisor may determine that the fund's investments in certain instruments, such as index futures, total return swaps and exchanged-traded funds ("ETFs") have similar economic characteristics as securities that are in the S&P 500 Index. As of February 29, 2024, the market capitalizations of companies included in the S&P 500 Index ranged from \$5.4 billion to \$3.1 trillion.

An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indexes may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. In contrast to actively managed funds, which seek to outperform their respective benchmark indexes through research and analysis, index funds are passively managed funds that seek to mirror the performance of their target indexes, minimizing performance differences over time. The fund attempts to match the performance of the S&P 500 Index by: (a) holding all, or a representative sample, of the securities that comprise that index and/or (b) by holding securities (which may or may not be included in the index) that the subadvisor believes as a group will behave in a manner similar to the index. However, an index fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index closely, typically will be unable to match the performance of the index exactly. The composition of an index changes from time to time, and the subadvisor will reflect those changes in the composition of the fund's portfolio as soon as practicable.

Use of Hedging and Other Strategic Transactions. The fund may invest in futures contracts, swaps, and depositary receipts. The fund may invest in derivatives (investments whose value is based on securities, indexes or currencies).

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, depositary receipts, total return swaps, and swaps. Futures contracts and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its

Fund summary

cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

S&P 500 Index risk An investment in the fund involves risks similar to the risks of investing directly in the equity securities included in the S&P 500 Index.

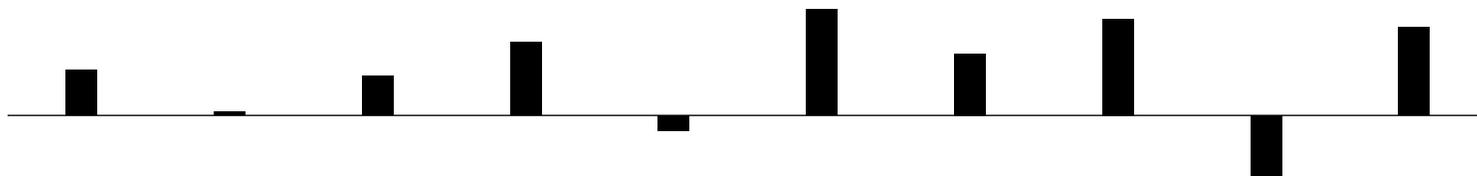
Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
13.43	1.15	11.64	21.54	-4.65	31.16	18.14	28.36	-18.31	25.95



Best quarter:	Q2 2020	20.49%
Worst quarter:	Q1 2020	-19.64%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	25.90	15.34	11.69
Series II	25.64	15.11	11.47
Series NAV	25.95	15.40	11.75
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (North America) Limited

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Ashikhusein Shahpurwala, CFA, PRM

Senior Portfolio Manager

Managed fund since 2013

Boncana Maiga, CFA, CIM

Portfolio Manager

Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Active Bond Trust

Investment objective

To seek income and capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.60	0.60	0.60
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.71	0.91	0.66

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	73	93	67
3 years	227	290	211
5 years	395	504	368
10 years	883	1,120	822

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 85% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in a diversified mix of debt securities and instruments. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund seeks to invest its assets in debt securities and instruments with an average duration of plus or minus one year of its benchmark, Bloomberg US Aggregate Bond Index, however, there is no limit on the fund's average maturity. As part of its investment strategy, the fund may invest in mortgage-backed securities to a significant extent.

Eligible investments include, but are not limited to:

- U.S. Treasury and agency securities;
- Asset-backed securities and mortgage-backed securities, both investment grade and below-investment grade, including mortgage pass-through securities, interest-only securities, commercial mortgage-backed securities ("CMBS") and collateralized mortgage obligations ("CMOs");
- Corporate bonds, both U.S. and foreign, and without any limit on credit quality; and
- Foreign government and agency securities.

The fund may invest in asset-backed securities rated, at the time of purchase, less than A (but not rated lower than B by S&P Global Ratings ("S&P") or Moody's Investors Service ("Moody's"), or a comparable rating by another Nationally Recognized Statistical Ratings Organization). The subadvisor uses proprietary research and economic and industry analysis to identify specific bonds, bond sectors and industries that are attractively priced. Because the fund is actively managed, it may have a higher than average portfolio turnover ratio, which may increase expenses and affect performance results.

Fund summary

The foreign securities in which the fund invests may be denominated in U.S. dollars or foreign currency.

Manulife Investment Management (US) LLC manages the fund with two investment teams, each of which employs its own investment approach and independently manages its portion of the fund. The fund will be rebalanced periodically so that each team manages the following portions of the fund:

50%* Securitized Asset Team 50%* Core / Core Plus Team

* Percentages are approximate. Since the fund is only rebalanced periodically, the actual portion of the fund managed by each team will vary. This allocation methodology may change in the future.

Securitized Asset Team

The Securitized Asset Team uses a combination of proprietary research and quantitative tools and seeks to identify bonds and bond sectors that are attractively priced based upon market fundamentals and technical factors. The Securitized Asset Team opportunistically emphasizes bonds with yields in excess of U.S. Treasury securities.

This portion of the fund normally has no more than 10% of its total assets in high yield bonds (“junk bonds”) and normally invests in foreign securities only if U.S. dollar-denominated. This portion of the fund normally has an average credit rating of “A” or “AA.”

The Core / Core Plus Team

The Core / Core Plus Team uses proprietary research to identify specific bond sectors, industries and bonds that are attractively priced. The team seeks to anticipate shifts in the business cycle, using economic and industry analysis to determine which sectors and industries might benefit over the next 12 months.

This portion of the fund normally has no more than 25% of its total assets in high yield bonds (sometimes referred to as “junk bonds”) and may invest in both U.S. dollar-denominated and foreign currency-denominated foreign securities. This portion of the fund normally has an average credit rating of “A” or “AA.”

Under normal circumstances, no more than 15% of the total assets of the portion of the fund managed by the Core / Core Plus Team will be invested in asset-backed securities rated lower than A by both rating agencies. The fund’s investment policies are based on credit ratings at the time of purchase.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under “Additional Information About the Funds’ Principal Risks — Hedging, derivatives and other strategic transactions risk” including, but not limited to, U.S. Treasury futures and options, index derivatives, credit default swaps and forwards.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options, credit default swaps, foreign currency swaps, interest-rate swaps, swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depends on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

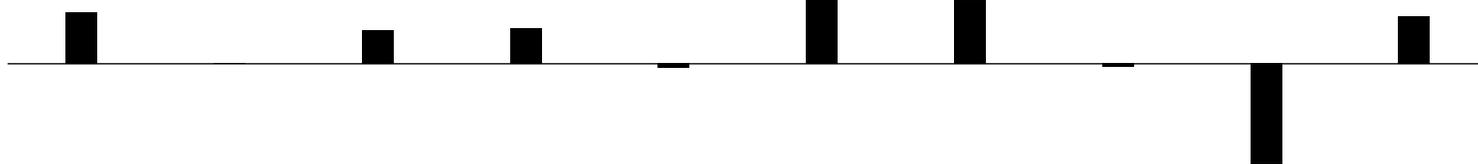
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
6.97	0.12	4.50	4.89	-0.55	9.30	8.73	-0.42	-13.78	6.48



Best quarter:	Q4 2023	7.14%
Worst quarter:	Q1 2022	-6.02%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	6.43	1.62	2.34
Series II	6.21	1.41	2.13
Series NAV	6.48	1.67	2.40
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Jeffrey N. Given, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2006

David A. Bees, CFA

Portfolio Manager
Managed fund since 2020

Connor Minnaar, CFA

Portfolio Manager
Managed fund since 2022

Howard C. Greene, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2005

Pranay Sonalkar, CFA

Portfolio Manager
Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

American Asset Allocation Trust

Investment objective

To seek to provide high total return (including income and capital gains) consistent with preservation of capital over the long term.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series III
Management fee	0.27 ¹	0.27 ¹	0.27 ¹
Distribution and service (Rule 12b-1) fees	0.60	0.75	0.25
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.93	1.08	0.58

¹ The table reflects the combined fees of the feeder fund and the master fund.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series III
1 year	95	110	59
3 years	296	343	186
5 years	515	595	324
10 years	1,143	1,317	726

Portfolio turnover

The fund, which operates as a feeder fund, does not pay transaction costs, such as commissions, when it buys and sells shares of the master fund (or "turns over" its portfolio). A master fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the master fund and of the fund. During its most recent fiscal year, the master fund's portfolio turnover rate was 159% of the average value of its portfolio.

Principal investment strategies

The fund invests all of its assets in Class 1 shares of its master fund, the Asset Allocation Fund, a series of American Funds Insurance Series. The master fund invests in a diversified portfolio of common stocks and other equity securities, bonds and other intermediate and long-term debt securities, and money market instruments (debt securities maturing in one year or less). The master fund may invest up to 25% of its debt assets in lower quality debt securities (rated Ba1 or below and BB+ or below by a nationally recognized statistical rating organization ("NRSRO") designated by the master fund's investment advisor or unrated but determined to be of equivalent quality by the master fund's investment advisor). Such securities are sometimes referred to as "junk bonds."

In seeking to pursue its investment objective, the master fund varies its mix of equity securities, debt securities and money market instruments. Under normal market conditions, the master fund's investment advisor expects (but is not required) to maintain an investment mix falling within the following ranges: 40% – 80% in equity securities, 20% – 50% in debt securities and 0% – 40% in money market instruments and cash. As of December 31, 2023, the fund was approximately 64% invested in equity securities, 32% invested in debt securities and 4% invested in money market instruments and cash. The proportion of equities, debt and money market securities held by the master fund will vary with market conditions and the investment advisor's assessment of their relative attractiveness as investment opportunities. The master fund may invest up to 15% of its assets in common stocks and other equity securities of issuers domiciled outside the U.S. and up to 5% of its assets in debt securities tied economically to countries outside the U.S.

Fund summary

The master fund may invest in other funds managed by the investment advisor or its affiliates to more effectively invest in a diversified set of securities in a specific asset class such as money market instruments, bonds and other securities (“Central Funds”). Shares of Central Funds are only offered for purchase to the master fund’s investment advisor and its affiliates and other funds, investment vehicles and accounts managed by the master fund’s investment advisor and its affiliates. When investing in Central Funds, the master fund bears its proportionate share of the expenses of the Central Funds in which it invests but does not bear additional management fees through its investment in such Central Funds. The investment results of the portion of the master fund’s assets invested in the Central Funds will be based upon the investment results of the Central Funds.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund’s investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Income stock risk. Income provided by the fund may be affected by changes in the dividend policies of the companies in which the fund invests and the capital resources available for such payments at such companies.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate

Fund summary

environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

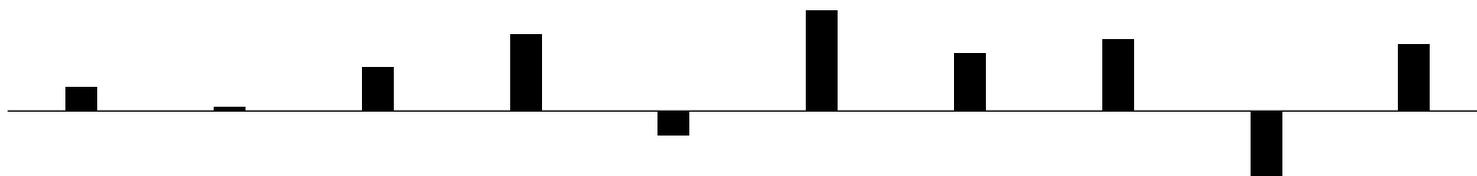
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The Bloomberg U.S. Aggregate Bond Index and the 60% S&P 500 Index/40% Bloomberg U.S. Aggregate Bond Index show how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
4.89	0.91	8.92	15.69	-5.06	20.67	11.92	14.61	-13.77	13.68



Best quarter:	Q2 2020	13.62%
Worst quarter:	Q1 2020	-13.59%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.90	8.80	6.86
Series II	13.68	8.70	6.75
Series III	14.23	9.16	7.23
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81
60% S&P 500 Index/40% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	17.67	9.98	8.09

Investment management

Investment advisor of the master fund Capital Research and Management Company

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Fund summary

Alan N. Berro

Co-President; Partner - Capital World Investors
Managed fund since 2000

Jin Lee

Partner - Capital World Investors
Managed fund since 2018

David A. Daigle

Partner - Capital Fixed Income Investors
Managed fund since 2009

John R. Queen

Partner - Capital Fixed Income Investors
Managed fund since 2016

Emme Kozloff

Partner - Capital World Investors
Managed fund since 2023

Justin Toner

Partner - Capital World Investors
Managed fund since 2023

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

American Global Growth Trust

Investment objective

To seek to provide long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series III
Management fee	0.48 ¹	0.48 ¹	0.48 ¹
Distribution and service (Rule 12b-1) fees	0.60	0.75	0.25
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	1.18	1.33	0.83
Contractual expense reimbursement	-0.12 ^{2,3}	-0.12 ^{2,3}	-0.12 ^{2,3}
Total annual fund operating expenses after expense reimbursements	1.06	1.21	0.71

1 The table reflects the combined fees of the feeder fund and the master fund.

2 The investment advisor of the master fund, Capital Research and Management Company, contractually agrees to waive a portion of its management fee. The waiver will be in effect through at least May 1, 2025, and the waiver may only be modified or terminated with the approval of the master fund's Board of Trustees.

3 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series III
1 year	108	123	73
3 years	363	410	253
5 years	637	717	449
10 years	1,421	1,591	1,014

Portfolio turnover

The fund, which operates as a feeder fund, does not pay transaction costs, such as commissions, when it buys and sells shares of the master fund (or "turns over" its portfolio). A master fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the master fund and of the fund. During its most recent fiscal year, the master fund's portfolio turnover rate was 29% of the average value of its portfolio.

Principal investment strategies

The fund invests all of its assets in Class 1 shares of its master fund, the Global Growth Fund, a series of American Funds Insurance Series. The Global Growth Fund invests primarily in common stocks of companies around the world that the advisor believes have potential for growth. As a fund that seeks to invest globally, the Global Growth Fund will allocate its assets among securities of companies in various countries, including the United States and

Fund summary

countries with emerging markets (but in no fewer than three countries). Under normal market conditions, the Global Growth Fund will invest significantly outside the United States (i.e., at least 40% of its net assets, unless market conditions are not deemed favorable by the fund's investment advisor, in which case the fund would invest at least 30% of its net assets outside the United States.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under "Additional Information About the Funds' Principal Risks — Hedging, derivatives and other strategic transactions risk."

The master fund may invest in other funds managed by the investment advisor or its affiliates to more effectively invest in a diversified set of securities in a specific asset class such as money market instruments, bonds and other securities ("Central Funds"). Shares of Central Funds are only offered for purchase to the master fund's investment advisor and its affiliates and other funds, investment vehicles and accounts managed by the master fund's investment advisor and its affiliates. When investing in Central Funds, the master fund bears its proportionate share of the expenses of the Central Funds in which it invests but does not bear additional management fees through its investment in such Central Funds. The investment results of the portion of the master fund's assets invested in the Central Funds will be based upon the investment results of the Central Funds.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund's investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps, foreign currency forward contracts, foreign currency swaps, futures contracts, options on futures, swaptions, interest-rate swaps, options, swaps, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depends on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, and total return swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference instrument. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Fund summary

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

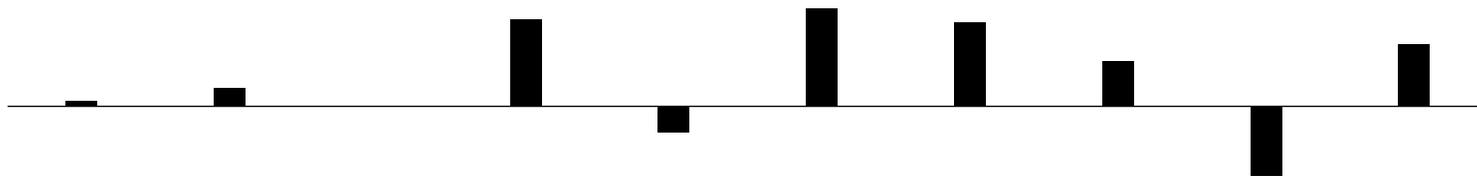
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1.82	6.50	0.10	30.92	-9.46	34.66	29.80	15.92	-25.08	22.02



Best quarter:	Q2 2020	24.15%
Worst quarter:	Q2 2022	-16.69%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	22.12	13.20	9.17
Series II	22.02	13.12	9.07
Series III	22.55	13.61	9.56
MSCI ACWI (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	22.20	11.72	7.93

Investment management

Investment advisor of the master fund Capital Research and Management Company

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Fund summary

Patrice Collette

Partner - Capital World Investors
Managed fund since 2015

Matt Hochstetler

Partner – Capital World Investors
Managed fund since 2024

Roz Hongsaranagon

Partner – Capital World Investors
Managed fund since 2021

Piyada Phanaphat

Partner – Capital World Investors
Managed fund since 2023

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

American Growth Trust

Investment objective

To seek to provide growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series III
Management fee	0.31 ¹	0.31 ¹	0.31 ¹
Distribution and service (Rule 12b-1) fees	0.60	0.75	0.25
Other expenses	0.07	0.07	0.07
Total annual fund operating expenses	0.98	1.13	0.63
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.97	1.12	0.62

1 The table reflects the combined fees of the feeder fund and the master fund.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series III
1 year	99	114	63
3 years	311	358	201
5 years	541	621	350
10 years	1,200	1,374	785

Portfolio turnover

The fund, which operates as a feeder fund, does not pay transaction costs, such as commissions, when it buys and sells shares of the master fund (or "turns over" its portfolio). A master fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the master fund and of the fund. During its most recent fiscal year, the master fund's portfolio turnover rate was 23% of the average value of its portfolio.

Principal investment strategies

The fund invests all of its assets in Class 1 shares of its master fund, the Growth Fund, a series of American Funds Insurance Series. The Growth Fund invests primarily in common stocks and seeks to invest in companies that appear to offer superior opportunities for growth of capital. The Growth Fund may also invest up to 25% of its assets in common stocks and other securities outside the U.S.

Fund summary

The master fund may invest in other funds managed by the investment advisor or its affiliates to more effectively invest in a diversified set of securities in a specific asset class such as money market instruments, bonds and other securities (“Central Funds”). Shares of Central Funds are only offered for purchase to the master fund’s investment advisor and its affiliates and other funds, investment vehicles and accounts managed by the master fund’s investment advisor and its affiliates. When investing in Central Funds, the master fund bears its proportionate share of the expenses of the Central Funds in which it invests but does not bear additional management fees through its investment in such Central Funds. The investment results of the portion of the master fund’s assets invested in the Central Funds will be based upon the investment results of the Central Funds.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund’s investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

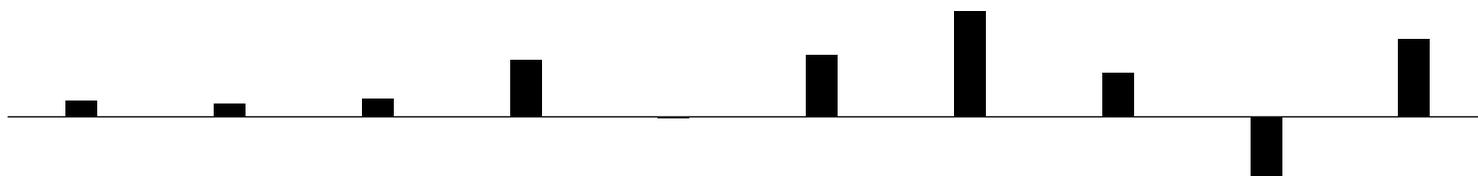
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
7.96	6.35	9.03	27.74	-0.71	30.20	51.46	21.49	-30.25	37.88



Best quarter:	Q2 2020	28.53%
Worst quarter:	Q2 2022	-23.13%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	37.99	18.24	13.94
Series II	37.88	18.17	13.85
Series III	38.45	18.66	14.33
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03

Investment management

Investment advisor of the master fund Capital Research and Management Company

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Julian N. Abdey

Partner – Capital International Investors
Managed fund since 2024

Irfan M. Furniturewala

Senior Vice President; Partner – Capital International Investors
Managed fund since 2021

Alan J. Wilson

Senior Vice President; Partner – Capital World Investors
Managed fund since 2014

Paul Benjamin

Partner – Capital World Investors
Managed fund since 2018

Anne-Marie Peterson

Partner – Capital World Investors
Managed fund since 2018

Mark L. Casey

Partner – Capital International Investors
Managed fund since 2017

Andraz Razen

Partner – Capital World Investors
Managed fund since 2013

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

American Growth-Income Trust

Investment objective

To seek to provide long-term growth of capital and income.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series III
Management fee	0.25 ¹	0.25 ¹	0.25 ¹
Distribution and service (Rule 12b-1) fees	0.60	0.75	0.25
Other expenses	0.07	0.07	0.07
Total annual fund operating expenses	0.92	1.07	0.57
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.91	1.06	0.56

1 The table reflects the combined fees of the feeder fund and the master fund.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series III
1 year	93	108	57
3 years	292	339	182
5 years	508	589	317
10 years	1,130	1,305	713

Portfolio turnover

The fund, which operates as a feeder fund, does not pay transaction costs, such as commissions, when it buys and sells shares of the master fund (or "turns over" its portfolio). A master fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the master fund and of the fund. During its most recent fiscal year, the master fund's portfolio turnover rate was 26% of the average value of its portfolio.

Principal investment strategies

The fund invests all of its assets in Class 1 shares of its master fund, the Growth-Income Fund, a series of American Funds Insurance Series. The Growth-Income Fund invests primarily in common stocks or other securities that the Growth-Income Fund's investment advisor believes demonstrate the potential for appreciation and/or dividends. The Growth-Income Fund may invest up to 15% of its assets outside the U.S. The Growth-Income Fund is designed for investors seeking both capital appreciation and income.

Fund summary

The master fund may invest in other funds managed by the investment advisor or its affiliates to more effectively invest in a diversified set of securities in a specific asset class such as money market instruments, bonds and other securities (“Central Funds”). Shares of Central Funds are only offered for purchase to the master fund’s investment advisor and its affiliates and other funds, investment vehicles and accounts managed by the master fund’s investment advisor and its affiliates. When investing in Central Funds, the master fund bears its proportionate share of the expenses of the Central Funds in which it invests but does not bear additional management fees through its investment in such Central Funds. The investment results of the portion of the master fund’s assets invested in the Central Funds will be based upon the investment results of the Central Funds.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund’s investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Income stock risk. Income provided by the fund may be affected by changes in the dividend policies of the companies in which the fund invests and the capital resources available for such payments at such companies.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

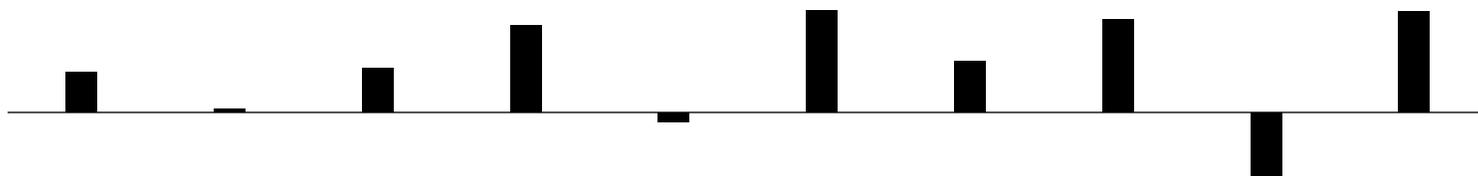
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
10.12	0.96	11.06	21.89	-2.27	25.64	13.02	23.51	-16.84	25.52



Best quarter:	Q2 2020	19.82%
Worst quarter:	Q1 2020	-19.87%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	25.68	12.95	10.52
Series II	25.52	12.86	10.41
Series III	26.14	13.34	10.90
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03

Investment management

Investment advisor of the master fund Capital Research and Management Company

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Charles E. Ellwein

Partner - Capital Research Global Investors
Managed fund since 2015

J. Blair Frank

Partner - Capital Research Global Investors
Managed fund since 2006

Keiko McKibben

Senior Vice President; Partner - Capital Research Global Investors
Managed fund since 2014

Donald D. O'Neal

Co-President and Trustee
Partner - Capital International Investors
Managed fund since 2005

William L. Robbins

Partner - Capital International Investors
Managed fund since 2012

Carlos A. Schonfeld

Senior Vice President; Partner - Capital International Investors
Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

American International Trust

Investment objective

To seek to provide long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series III
Management fee	0.48 ¹	0.48 ¹	0.48 ¹
Distribution and service (Rule 12b-1) fees	0.60	0.75	0.25
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	1.18	1.33	0.83
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	1.17	1.32	0.82

1 The table reflects the combined fees of the feeder fund and the master fund.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series III
1 year	119	134	84
3 years	374	420	264
5 years	648	728	460
10 years	1,431	1,601	1,024

Portfolio turnover

The fund, which operates as a feeder fund, does not pay transaction costs, such as commissions, when it buys and sells shares of the master fund (or "turns over" its portfolio). A master fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the master fund and of the fund. During its most recent fiscal year, the master fund's portfolio turnover rate was 28% of the average value of its portfolio.

Principal investment strategies

The fund invests all of its assets in Class 1 shares of its master fund, the International Fund, a series of American Funds Insurance Series. The International Fund invests primarily in common stocks of companies outside the United States, including in emerging markets, that the advisor believes have the potential for growth.

Fund summary

The master fund may invest in other funds managed by the investment advisor or its affiliates to more effectively invest in a diversified set of securities in a specific asset class such as money market instruments, bonds and other securities (“Central Funds”). Shares of Central Funds are only offered for purchase to the master fund’s investment advisor and its affiliates and other funds, investment vehicles and accounts managed by the master fund’s investment advisor and its affiliates. When investing in Central Funds, the master fund bears its proportionate share of the expenses of the Central Funds in which it invests but does not bear additional management fees through its investment in such Central Funds. The investment results of the portion of the master fund’s assets invested in the Central Funds will be based upon the investment results of the Central Funds.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund’s investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

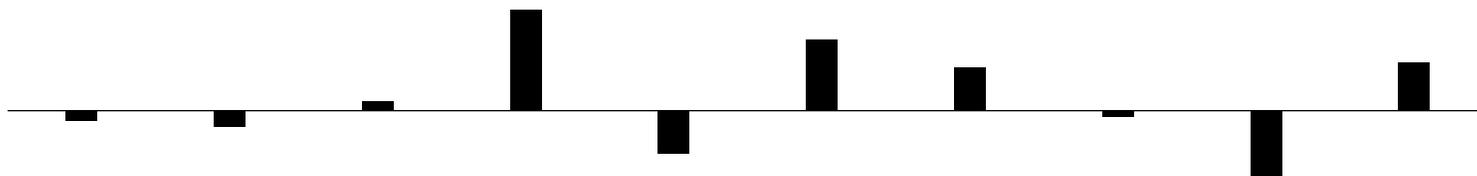
The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information

Fund summary

below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-3.15	-4.98	2.97	31.49	-13.59	22.27	13.40	-1.96	-21.16	15.23



Best quarter:	Q4 2020	21.55%
Worst quarter:	Q1 2020	-24.67%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	15.39	4.44	3.02
Series II	15.23	4.31	2.89
Series III	15.76	4.81	3.38
MSCI ACWI ex USA Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	15.62	7.08	3.83

Investment management

Investment advisor of the master fund Capital Research and Management Company

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the master fund's portfolio.

Nicholas J. Grace

Partner – Capital Research Global Investors
Managed fund since 2021

Sung Lee

Senior Vice President; Partner – Capital Research Global Investors
Managed fund since 2006

Renaud H. Samyn

Partner – Capital Research Global Investors
Managed fund since 2014

Christopher Thomsen

Partner – Capital Research Global Investors
Managed fund since 2006

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Blue Chip Growth Trust

Investment objective

To provide long-term growth of capital. Current income is a secondary objective.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.73	0.73	0.73
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	0.83	1.03	0.78
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.82	1.02	0.77

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	84	104	79
3 years	264	327	248
5 years	460	568	432
10 years	1,024	1,259	965

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 11% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in the common stocks of large and medium-sized blue chip growth companies. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) These are firms that, in the subadvisor's view, are well established in their industries and have the potential for above-average earnings growth.

In identifying blue chip companies, the subadvisor generally considers the following characteristics:

Fund summary

Leading market positions. Blue chip companies often have leading market positions that are expected to be maintained or enhanced over time. Strong positions, particularly in growing industries, can give a company pricing flexibility as well as the potential for good unit sales. These factors, in turn, can lead to higher earnings growth and greater share price appreciation.

Seasoned management teams. Seasoned management teams with a track record of providing superior financial results are important for a company's long-term growth prospects. The subadvisor's analysts will evaluate the depth and breadth of a company's management experience.

Strong financial fundamentals. Companies should demonstrate faster earnings growth than their competitors and the market in general; high profit margins relative to competitors; strong cash flow; a healthy balance sheet with relatively low debt; and a high return on equity with a comparatively low dividend payout ratio.

This investment approach reflects the subadvisor's belief that the combination of solid company fundamentals (with emphasis on the potential for above-average growth in earnings) along with a positive industry outlook will ultimately reward investors with strong investment performance. Some of the companies the subadvisor targets will have good prospects for dividend growth. The fund may at times invest significantly in stocks of information technology companies.

While most of the assets of the fund are invested in U.S. common stocks, the fund may also purchase or invest in other types of securities, including (i) U.S. and foreign currency-denominated foreign securities (up to 20% of its net assets) including American Depositary Receipts (ADRs), (ii) convertible stocks, warrants and bonds, and (iii) futures and options. Investments in convertible securities, warrants, preferred stocks and debt securities are limited to 25% of total assets.

The fund may invest in debt securities of any type, including municipal securities, without restrictions on quality or rating. Such securities would be issued by entities which meet the investment criteria for the fund but may include below-investment-grade debt securities ("junk bonds"). The fund will not purchase a below-investment-grade debt security if, immediately after such purchase, the fund would have more than 5% of its total assets invested in such securities.

The fund's debt securities may include privately negotiated notes or loans, including loan participations and assignments ("bank loans"). These investments will only be made in companies, municipalities or entities that meet the fund's investment criteria. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risks of being a direct lender. Since the fund invests primarily in equity securities, the risks associated with fixed-income securities will not affect the fund as much as they would a fund that invests more of its assets in fixed-income securities.

The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivative which can combine the characteristics of securities, futures and options. Such securities may or may not bear interest or pay dividends at below (or even relatively nominal) rates.

The fund may sell assets for a variety of reasons, including in response to a change in the original investment considerations or to limit losses, adjust the characteristics of the overall portfolio, or redeploy assets into different opportunities.

In pursuing the fund's investment objectives, the subadvisor has the discretion to deviate from its normal investment criteria, as described above, and purchase securities the subadvisor believes will provide an opportunity for substantial appreciation. These situations might arise when the subadvisor believes a security could increase in value for a variety of reasons including a change in management, an extraordinary corporate event, a new product introduction or innovation or a favorable competitive development.

The fund is a non-diversified fund, which means that it may invest in a smaller number of issuers than a diversified fund and may invest more of its assets in the securities of a single issuer.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Communication sector risk. Because the fund may be concentrated in securities of companies in the communication sector, any market price movements, regulatory or technological changes, or economic conditions affecting companies in the communication sector may have a significant impact on the fund's performance.

Consumer discretionary sector risk. The consumer discretionary sector may be affected by fluctuations in supply and demand, and may also be adversely affected by changes in consumer spending as a result of world events, political and economic conditions, commodity price volatility, changes in exchange rates, imposition of import controls, increased competition, depletion of resources, and labor relations.

Fund summary

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Foreign currencies may decline in value, which could negatively impact performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hong Kong Stock Connect Program (Stock Connect) risk. Trading in China A-Shares through Stock Connect, a mutual market access program that enables foreign investment in the People's Republic of China (PRC), is subject to certain restrictions and risks. Securities listed on Stock Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Stock Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Stock Connect may affect China A-Share prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the notes' issuer, may be privately placed, and may have a limited secondary market), and options. Futures contracts and options generally are subject to counterparty risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Fund summary

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Media and communications sector risk. Media and communications companies may be significantly affected by product and service obsolescence due to technological advancement or development, competitive pressures, substantial capital requirements, fluctuating demand, and changes in regulation.

Mid-sized company risk. Mid-sized companies are generally less established and may be more volatile than larger companies. Mid-capitalization securities may underperform the market as a whole.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Technology companies risk. Technology companies can be significantly affected by rapid obsolescence, short product cycles, competition, and government regulation, among other factors. Investments in the technology sector may be susceptible to heightened risk of cybersecurity breaches, which may allow an unauthorized party to gain access to personally identifiable information and other customer data.

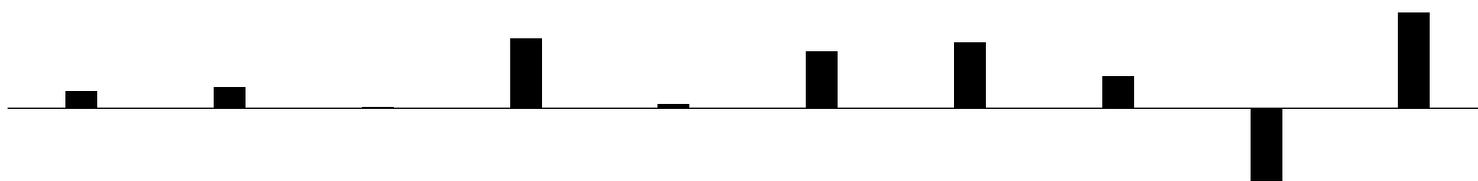
Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The Russell 1000 Growth Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
9.07	11.06	0.81	36.28	1.97	29.80	34.30	16.87	-38.09	49.56



Best quarter:	Q2 2020	27.72%
Worst quarter:	Q2 2022	-24.94%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	49.56	13.53	12.34
Series II	49.25	13.31	12.12

Fund summary

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series NAV	49.59	13.58	12.39
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
Russell 1000 Growth Index (reflects no deduction for fees, expenses, or taxes)	42.68	19.50	14.86

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Paul Greene II

Vice President

Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Capital Appreciation Trust

Investment objective

To seek long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.71	0.71	0.71
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.82	1.02	0.77
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.81	1.01	0.76

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	83	103	78
3 years	261	324	245
5 years	454	562	427
10 years	1,013	1,247	953

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 34% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 65% of its total assets in equity and equity-related securities of companies, at the time of investment, that exceed \$1 billion in market capitalization and that the subadvisor believes have above-average growth prospects. These companies are generally medium- to large-capitalization companies.

The subadvisor believes that growth in earnings and cash flows drives share prices over the long term; that excess returns are generated by investing in market-leading companies that create economic value through long-duration competitive advantages; and that a deeply researched understanding of

Fund summary

company and industry fundamentals leads to successful stock selection. The subadvisor looks for companies with unique business models that build sustainable competitive advantages; catalysts that drive growth rates well above that of the market; superior financial characteristics; and attractive long-term valuations. The subadvisor seeks to capture acceleration or duration of growth that is not fully reflected in a stock's price.

Securities in which the fund invests have historically been more volatile than the S&P 500 Index. Also, companies that have an earnings growth rate higher than that of the average S&P 500 company tend to reinvest their earnings rather than distribute them. Therefore, the fund is not likely to receive significant dividend income on its securities. Seeking to invest in companies with above market-average growth, the fund may invest significantly in sectors associated with such growth, including information technology.

In addition to common stocks, nonconvertible preferred stock and convertible securities, equity-related securities in which the fund invests include: (i) American Depositary Receipts (ADRs); (ii) warrants and rights; (iii) investments in various types of business ventures, including partnerships and joint ventures; (iv) real estate investment trusts (REITs); and (v) initial public offerings (IPOs) and similar securities. (Convertible securities are securities — like bonds, corporate notes and preferred stocks — that the fund can convert into the company's common stock, cash value of common stock, or some other equity security.)

In addition to the principal strategies discussed above, the fund may also use the following investment strategies to attempt to increase the fund's return or protect its assets if market conditions warrant:

- The fund may make short sales of a security including short sales “against the box.”
- The fund may invest up to 20% of the fund's total assets in foreign equity securities. (For purposes of this 20% limit, ADRs and other similar receipts or shares traded in U.S. markets are not considered to be foreign securities.)
- The fund may invest in U.S. government securities issued or guaranteed by the U.S. government or by an agency or instrumentality of the U.S. government.
- The fund may invest in mortgage-related securities issued or guaranteed by U.S. governmental entities, including collateralized mortgage obligations, multi-class pass-through securities and stripped mortgage-backed securities.
- The fund may invest in fixed-income securities rated investment grade. These include corporate debt and other debt obligations of U.S. and foreign issuers. The fund may invest in obligations that are not rated, but that the subadvisor believes are of comparable quality to these obligations.
- The fund may invest in repurchase agreements.

The subadvisor considers selling or reducing a stock position when, in the opinion of the subadvisor, the stock has experienced a fundamental disappointment in earnings, it has reached an intermediate price objective and its outlook no longer seems sufficiently promising, a relatively more attractive stock emerges or the stock has experienced adverse price movement.

The fund's investment process may, at times, result in a higher than average portfolio turnover ratio and increased trading expenses.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Consumer discretionary sector risk. The consumer discretionary sector may be affected by fluctuations in supply and demand, and may also be adversely affected by changes in consumer spending as a result of world events, political and economic conditions, commodity price volatility, changes in exchange rates, imposition of import controls, increased competition, depletion of resources, and labor relations.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Real estate securities risk. Securities of companies in the real estate industry carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

U.S. government agency obligations risk. The fund invests in obligations issued by agencies and instrumentalities of the U.S. government. Government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt

Fund summary

securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

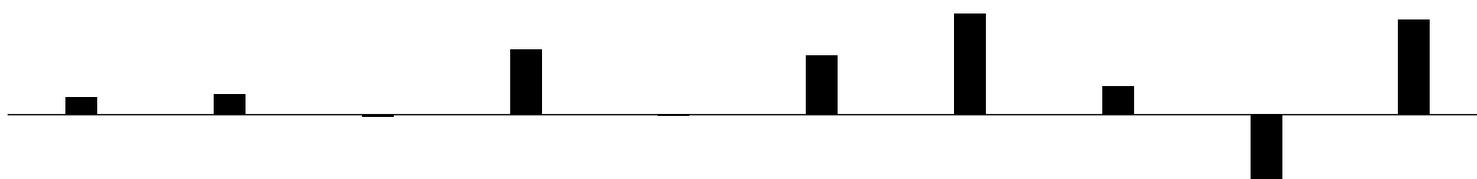
Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
9.65	11.46	-1.08	36.53	-0.80	32.89	56.04	15.75	-37.70	52.85



Best quarter:	Q2 2020	35.37%
Worst quarter:	Q2 2022	-25.47%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	52.85	17.98	14.11
Series II	52.51	17.74	13.87
Series NAV	52.95	18.07	14.18
Russell 1000 Growth Index (reflects no deduction for fees, expenses, or taxes)	42.68	19.50	14.86

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Jennison Associates LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Blair A. Boyer
Managing Director
Managed fund since 2019

Natasha Kuhlkin, CFA
Managing Director
Managed fund since 2019

Michael A. Del Balso
Managing Director
Managed fund since 2000

Kathleen A. McCarragher
Managing Director
Managed fund since 2000

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Capital Appreciation Value Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.83	0.83	0.83
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.07	0.07	0.07
Total annual fund operating expenses	0.95	1.15	0.90
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.94	1.14	0.89

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	96	116	91
3 years	302	364	286
5 years	525	632	497
10 years	1,165	1,397	1,107

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 76% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests primarily in common stocks of established U.S. companies that have above-average potential for capital growth. Common stocks typically constitute at least 50% of the fund's total assets. The remaining assets are generally invested in other securities, including corporate and government debt (including mortgage- and asset-backed securities), bank loans (which represent an interest in amounts owed by a borrower to a syndicate of lenders), foreign securities, futures and options. The fund may invest up to 20% of its total assets in foreign securities.

Fund summary

The fund's common stocks generally fall into one of two categories: the larger category comprises long-term core holdings whose prices when purchased by the fund are considered low in terms of company assets, earnings, or other factors; the smaller category comprises opportunistic investments whose prices the subadvisor expects to rise in the short term but not necessarily over the long term. There are no limits on the market capitalization of the issuers of the stocks in which the fund invests. Since the subadvisor attempts to prevent losses as well as achieve gains, the subadvisor typically uses a value approach in selecting investments. The subadvisor's in-house research team seeks to identify companies that seem undervalued by various measures, such as price/book value, and may be temporarily out of favor but are believed to have good prospects for capital appreciation. The subadvisor may establish relatively large positions in companies it finds particularly attractive.

In addition, the subadvisor searches for risk/reward values among all types of securities. The portion of the fund invested in a particular type of security, such as common stocks, results largely from case-by-case investment decisions, and the size of the fund's cash reserve may reflect the subadvisor's ability to find companies that meet valuation criteria rather than its market outlook.

Bonds and bank loans may be purchased to gain additional exposure to a company or for their income or other features; maturity and quality are not necessarily major considerations in determining whether to purchase a particular security. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risks of being a direct lender. The fund's investments in below-investment grade debt securities and loans are limited to 30% of total assets. The fund may also purchase other securities, including bank debt, loan participations and assignments and futures and options. The fund's investments in options, if any, will be primarily in an effort to protect against downside risk or to generate additional income.

The fund holds a certain portion of its assets in money market reserves, which can consist of shares of certain internal T. Rowe Price money market funds as well as U.S. dollar and foreign currency-denominated money market securities, including repurchase agreements, in the two highest rating categories, maturing in one year or less.

The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivative which can combine the characteristics of securities, futures, currencies and options. Such securities may bear interest or pay dividends at below (or even relatively nominal) rates. In addition, the fund may invest up to 10% of its total assets in mortgage- and asset-backed securities.

The fund may sell securities for a variety of reasons including to realize gains, limit losses or redeploy assets into more promising opportunities. In pursuing the fund's investment objective, the subadvisor has the discretion to purchase some securities that do not meet its normal investment criteria, as described above, when it perceives an unusual opportunity for gain. These special situations might arise when the subadvisor believes a security could increase in value for a variety of reasons including a change in management, an extraordinary corporate event, a new product introduction or a favorable competitive development.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fund summary

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, and options. Futures contracts and options generally are subject to counterparty risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

LIBOR discontinuation risk. The official publication of the London Interbank Offered Rate (LIBOR), which many debt securities, derivatives and other financial instruments traditionally utilized as the reference or benchmark rate for interest rate calculations, was discontinued as of June 30, 2023. However, a subset of LIBOR settings will continue to be published on a "synthetic" basis. The synthetic publication of the one-, three- and six-month U.S. dollar LIBOR will continue until September 30, 2024. The discontinuation of LIBOR and a transition to replacement rates may lead to volatility and illiquidity in markets and may adversely affect the fund's performance.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Fund summary

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 60% S&P 500 Index/40% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
12.22	5.28	8.12	15.15	0.39	24.31	17.40	18.13	-11.86	18.18



Best quarter:	Q2 2020	13.50%
Worst quarter:	Q1 2020	-12.03%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	18.18	12.42	10.24
Series II	18.01	12.20	10.03
Series NAV	18.31	12.48	10.30
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
60% S&P 500 Index/40% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	17.67	9.98	8.09

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Sub-Subadvisor T. Rowe Price Investment Management, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

David R. Giroux, CFA

Vice President

Managed fund since 2008

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Core Bond Trust

Investment objective

To seek total return consisting of income and capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.58	0.58	0.58
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.69	0.89	0.64
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.68	0.88	0.63

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	69	90	64
3 years	220	283	204
5 years	383	492	356
10 years	858	1,095	797

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 258% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in a broad range of investment-grade debt securities, including U.S. government obligations, corporate bonds, mortgage-backed and other asset-backed securities, and money market instruments. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.)

Fund summary

The fund invests in debt securities that the subadvisor believes offer attractive yields and are undervalued relative to issues of similar credit quality and interest rate sensitivity. The fund may also invest in unrated bonds that the subadvisor believes are comparable to investment-grade debt securities. The fund may invest to a significant extent in mortgage-backed securities, including collateralized mortgage obligations.

Under normal market conditions, the subadvisor expects to maintain an effective duration within 10% (in either direction) of the duration of the Bloomberg U.S. Aggregate Bond Index (the duration of this index as of February 29, 2024 was 6.22 years).

The fund may invest:

- Up to 25% of total assets in asset-backed securities, other than mortgage-backed securities;
- Up to 20% of total assets in U.S. dollar-denominated obligations of foreign issuers; and
- Up to 10% of total assets in U.S. stripped mortgage-backed securities.

As part of a mortgage-backed securities investment strategy, the fund may enter into dollar rolls. The fund may also enter into reverse repurchase agreements to enhance return.

The fund's investment process may, at times, result in a higher than average portfolio turnover ratio and increased trading expenses.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include reverse repurchase agreements. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities. In addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Fund summary

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

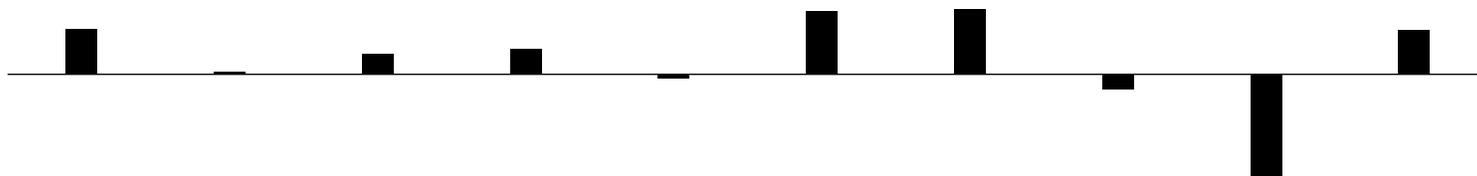
U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.93	0.31	2.74	3.40	-0.59	8.32	8.62	-1.96	-13.67	5.80



Best quarter:	Q4 2023	6.67%
Worst quarter:	Q1 2022	-6.18%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	5.80	1.05	1.69
Series II	5.61	0.85	1.49
Series NAV	5.89	1.11	1.74
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Allspring Global Investments, LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Maulik Bhansali, CFA
Senior Portfolio Manager
Managed fund since 2017

Jarad Vasquez
Senior Portfolio Manager
Managed fund since 2017

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Disciplined Value International Trust

Investment objective

To seek long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.70 ¹	0.70 ¹	0.70 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	0.85	1.05	0.80
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.84	1.04	0.79

1 “Management fee” has been restated to reflect the contractual management fee schedule effective April 1, 2023.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	86	106	81
3 years	270	333	254
5 years	470	578	443
10 years	1,048	1,282	989

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 81% of the average value of its portfolio.

Principal investment strategies

The Board of Trustees can change the fund's investment objective and strategies without shareholder approval.

The fund pursues its investment objective by investing, under normal circumstances, at least 80% of its net assets (plus any borrowings for investment purposes) in a portfolio of equity and equity-related securities issued by non-U.S. companies of any capitalization size. The fund may invest in all types of equity and equity-related securities, including, without limitation, exchange-traded and over-the-counter common and preferred stocks, warrants, options, rights, convertible securities, sponsored and unsponsored depositary receipts and shares, trust certificates, participatory notes, limited

Fund summary

partnership interests, shares of other investment companies (including exchange-traded funds (ETFs)), real estate investment trusts (REITs), and equity participations. An equity participation is a type of loan that gives the lender a portion of equity ownership in a property, in addition to principal and interest payments. A convertible security is a bond, debenture, note, preferred stock, or other security that may be converted into or exchanged for a prescribed amount of common stock of the same or a different issuer within a particular period of time at a specified price or formula.

The fund defines non-U.S. companies as companies: (i) that are organized under the laws of a foreign country; (ii) whose principal trading market is in a foreign country; or (iii) that have a majority of their assets, or that derive a significant portion of their revenue or profits, from businesses, investments, or sales outside of the United States. The fund primarily will be invested in issuers located in countries with developed securities markets, but may also invest in issuers located in emerging and frontier markets.

The fund may invest in securities denominated in the currencies of a variety of developed, emerging and frontier market countries.

The fund generally invests in the equity securities of issuers believed by the manager to be undervalued in the marketplace, focusing on issuers that combine attractive valuations with catalysts for change. The manager applies a bottom-up stock selection process (i.e., one that focuses primarily on issuer specific factors) in managing the fund, using a combination of fundamental and quantitative analysis. In selecting investments for the fund, the manager considers various factors, such as price-to-book value, price-to-sales and earnings ratios, dividend yields, strength of management, and cash flow to identify securities that are trading at a price that appears to be lower than the issuer's inherent value.

The fund may (but is not required to) invest in derivatives, including put and call options, futures, forward contracts, and swaps, in lieu of investing directly in a security, currency or instrument, for hedging and nonhedging purposes, including reducing risk, obtaining efficient market exposure, and/or enhancing investment returns.

The fund may invest up to 15% of its net assets in illiquid securities, including securities that are illiquid by virtue of the absence of a readily available market or legal or contractual restrictions on resale.

The fund may participate as a purchaser in Initial Public Offerings (IPOs). An IPO is a company's first offering of stock to the public. The fund may also seek to increase its income by lending portfolio securities.

The manager will sell a stock when it no longer meets one or more investment criteria, either through obtaining target value or due to an adverse change in fundamentals or business momentum. Each holding has a target valuation established at purchase, which the manager constantly monitors and adjusts as appropriate.

The fund may invest in cash or money market instruments for the purpose of meeting redemption requests or making other anticipated cash payments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fund summary

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Frontier-market risk. Frontier-market countries generally have smaller economies and less-developed capital markets and political systems than traditional emerging-market countries, which magnifies emerging-market risks.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, swaps, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), and options. Foreign currency forward contracts, futures contracts, options and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Participatory notes risk. Participatory notes (p-notes) represent interests in securities listed on certain foreign exchanges. Due to transaction costs and other expenses, p-notes will not replicate exactly the performance of their underlying securities. P-notes are general unsecured contractual obligations of the financial institutions issuing the notes and are subject to liquidity risk and a high degree of counterparty risk.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information

Fund summary

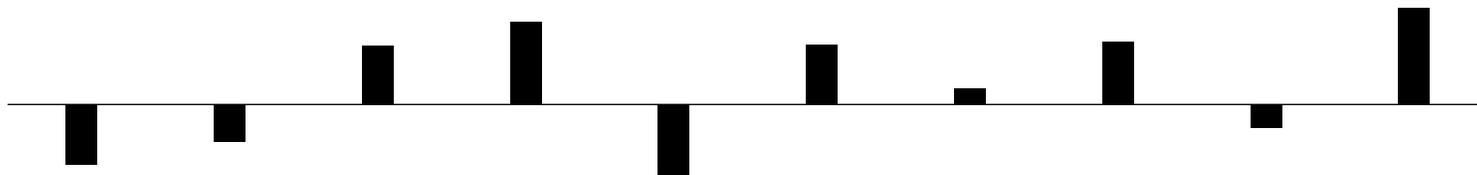
below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

A note on performance

Prior to February 12, 2020, the fund was managed by a different subadvisor pursuant to different investment strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor. The fund's performance shown below might have differed materially had the current subadvisor managed the fund prior to February 12, 2020.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-12.51	-7.81	12.24	17.14	-15.03	12.33	3.27	13.06	-4.77	19.96



Best quarter:	Q4 2022	20.55%
Worst quarter:	Q1 2020	-28.10%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	19.96	8.42	3.05
Series II	19.69	8.21	2.84
Series NAV	20.05	8.47	3.10
MSCI EAFE Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	18.24	8.16	4.28

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Boston Partners Global Investors, Inc.

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Christopher K. Hart, CFA

Portfolio Manager

Managed fund since 2020

Joshua M. Jones, CFA

Portfolio Manager

Managed fund since 2020

Soyoun Song

Portfolio Manager

Managed fund since 2024

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan.

Fund summary

Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Emerging Markets Value Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.83	0.83	0.83
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.21	0.21	0.21
Total annual fund operating expenses	1.09	1.29	1.04
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.08	1.28	1.03

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	110	130	105
3 years	346	408	330
5 years	600	707	573
10 years	1,328	1,556	1,270

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 12% of the average value of its portfolio.

Principal investment strategies

Under normal circumstances, the fund will invest at least 80% of its net assets (plus any borrowings for investment purposes) in companies associated with emerging markets designated from time to time by the subadvisor. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.)

The fund seeks long-term capital growth through investment primarily in emerging market equity securities. The fund seeks to achieve its investment objective by investing in companies associated with emerging markets, which may include frontier markets (emerging market countries at an earlier

Fund summary

stage of development), authorized for investment by the subadvisor (“Approved Markets”) from time to time. The fund invests its assets primarily in Approved Market equity securities listed on bona fide securities exchanges. (Approved Market Securities are defined below.) These exchanges may be either within or outside the issuer’s domicile country. The securities may be listed or traded in the form of American Depositary Receipts (ADRs), European Depositary Receipts (EDRs), Global Depositary Receipts (GDRs), Non-Voting Depositary Receipts (NVDRs) or other similar securities, including dual-listed securities.

The fund seeks to purchase emerging market equity securities that are deemed by the subadvisor to be value stocks at the time of purchase. An equity issuer is considered to have a low relative price (i.e., a value stock) primarily because it has a low price in relation to its book value. In assessing relative price, the subadvisor may consider additional factors, such as price-to-cash flow or price-to-earnings ratios.

In addition, the subadvisor may adjust the representation in the fund of an eligible company, or exclude a company, after considering such factors as free float, price momentum, short-run reversals, trading strategies, liquidity, size, relative price, profitability, investment characteristics, and other factors the subadvisor determines to be appropriate. In assessing profitability, the subadvisor considers different ratios, such as that of earnings or profits from operations relative to book value or assets. In assessing a company’s investment characteristics, the subadvisor considers ratios such as recent changes in assets divided by total assets. The criteria the subadvisor uses for assessing relative price, profitability and investment characteristics are subject to change from time to time.

The fund will also seek to purchase emerging market equity securities across all market capitalizations, and specifically those which are deemed by the subadvisor to be value stocks at the time of purchase, as described in the paragraph above. The fund may not invest in certain eligible companies or Approved Markets described above because of constraints imposed within Approved Markets, restrictions on purchases by foreigners and the fund’s policy to invest no more than 25% of its total assets in any one industry at the time of purchase. The fund may invest in financial services companies.

The fund also may invest up to 10% of its total assets in shares of other investment companies that invest in one or more Approved Markets, although it intends to do so only where access to those markets is otherwise significantly limited.

In determining what countries are eligible markets for the fund, the subadvisor may consider various factors, including without limitation, the data, analysis and classification of countries published or disseminated by the World Bank, the International Finance Corporation, FTSE Russell, and MSCI. Approved emerging markets may not include all emerging markets classified by such entities. In determining whether to approve markets for investment, the subadvisor may take into account, among other things, market liquidity, relative availability of investor information, and government regulation, including fiscal and foreign exchange repatriation rules and the availability of other access to these markets for the fund.

The fund may use derivatives such as futures contracts and options on futures contracts to increase or decrease equity market exposure based on actual or expected cash inflows to or outflows from the fund. The fund may enter into futures contracts and options on futures contracts for Approved Markets or other equity market securities and indices, including those of the United States. The fund may also enter into forward currency contracts to facilitate the settlement of equity purchases of foreign securities, repatriation of foreign currency balances or exchange of one foreign currency to another currency. In addition to money market instruments and other short-term investments, the fund may invest in affiliated and unaffiliated unregistered money market funds to manage the fund’s cash pending investment in other securities or to maintain liquidity for the payment of redemptions or other purposes. Investments in money market funds may involve a duplication of certain fees and expenses.

The fund’s policy of seeking broad market diversification means the subadvisor will not utilize “fundamental” securities research techniques in identifying security selections. Generally, changes in the composition and relative ranking (in terms of price-to-book ratio) of the stocks that are eligible for purchase by the fund take place with every trade when the securities markets are open for trading due primarily to price changes of such securities. On a periodic basis, the subadvisor will identify value stocks that are eligible for investment and re-evaluate eligible value stocks no less than semiannually.

Generally, the fund does not seek current income as an investment objective, and investments will not be based upon an issuer’s dividend payment policy or record. However, many of the companies whose securities will be held by the fund do pay dividends. It is anticipated, therefore, that the fund will receive dividend income.

Approved Markets

As of the date of this prospectus, the fund is authorized to invest in the countries listed below. The subadvisor will determine in its discretion when and whether to invest in countries that have been authorized, depending on a number of factors, such as asset growth in the fund, constraints imposed within Approved Markets, and characteristics of each country’s markets. The subadvisor also may authorize other countries for investment in the future, in addition to the countries listed below. Also, the fund may continue to hold investments in countries that are not currently authorized for investment, but had been authorized for investment in the past. Emerging markets approved for investment may include countries in an earlier stage of development that are sometimes referred to as frontier markets.

- Brazil
- Chile
- China

Fund summary

- Colombia
- Czech Republic
- Greece
- Hungary
- India
- Indonesia
- Kuwait
- Malaysia
- Mexico
- Philippines
- Poland
- Qatar
- Saudi Arabia
- South Africa
- South Korea
- Taiwan
- Thailand
- Turkey
- United Arab Emirates

Approved Market Securities

“Approved Market Securities” are defined as securities that are associated with an Approved Market, and include, among others: (a) securities of companies that are organized under the laws of, or maintain their principal place of business in, an Approved Market; (b) securities for which the principal trading market is in an Approved Market; (c) securities issued or guaranteed by the government of an Approved Market country, its agencies or instrumentalities, or the central bank of such country; (d) securities of companies that derive at least 50% of their revenues or profits from goods produced or sold, investments made or services performed in Approved Markets or have at least 50% of their assets in Approved Markets; (e) securities included in the fund’s benchmark index which tracks Approved Markets; or (f) depository shares of companies associated with Approved Markets under the criteria above. Approved Market Securities may include securities of companies that have characteristics and business relationships common to companies in other countries. As a result, the value of the securities of such companies may reflect economic and market forces in such other countries as well as in the Approved Markets. The subadvisor, however, will select only those companies which, in its view, have sufficiently strong exposure to economic and market forces in Approved Markets that satisfy the criteria described above. The fund also may obtain exposure to Approved Market Securities by investing in derivative instruments that derive their value from Approved Market Securities, or by investing in securities of pooled investment vehicles that invest at least 80% of their assets in Approved Market Securities.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund’s investments. Foreign currencies may decline in value, which could negatively impact performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact

Fund summary

performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Emerging-market risk. The risks of investing in foreign securities are magnified in emerging markets. Emerging-market countries may experience higher inflation, interest rates, and unemployment and greater social, economic, and political uncertainties than more developed countries.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Greater China risk. Investments in the Greater China region may be subject to less developed trading markets, acute political risks such as possible negative repercussions resulting from China's relationship with Taiwan or Hong Kong, and restrictions on monetary repatriation or other adverse government actions. For example, a government may restrict investment in companies or industries considered important to national interests, or intervene in the financial markets, such as by imposing trading restrictions, or banning or curtailing short selling. A small number of companies and industries may generally represent a relatively large portion of the Greater China market as a whole.

Frontier-market risk. Frontier-market countries generally have smaller economies and less-developed capital markets and political systems than traditional emerging-market countries, which magnifies emerging-market risks.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options on futures, and options. Foreign currency forward contracts, futures contracts, and options generally are subject to counterparty risk. Derivatives associated with foreign currency transactions are subject to currency risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Fund summary

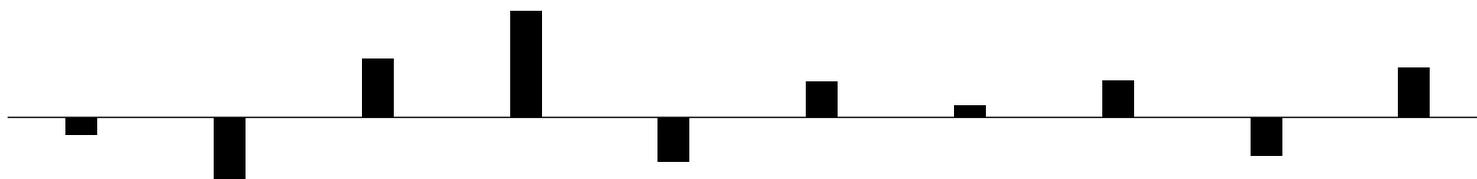
Value investment style risk. Value securities, as a category, may underperform other segments of the market or the market as a whole and following a value-oriented investment strategy may cause the fund, at times, to underperform equity funds that employ a different investment style.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The inception dates for Series I, Series II and Series NAV are May 1, 2007, May 27, 2015 and May 1, 2007, respectively. Performance shown for periods prior to the inception date of Series II is the performance of one of the fund's oldest share classes, Series NAV. This pre-inception performance, with respect to any other share class of the fund, has not been adjusted to reflect the Rule 12b-1 fees of that class. As a result, the pre-inception performance shown for a share class other than the oldest share class may be higher or lower than it would be if adjusted to reflect the Rule 12b-1 fees of the class. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-5.50	-19.08	18.00	32.70	-13.60	10.94	3.56	11.18	-11.67	15.19



Best quarter:	Q4 2020	22.50%
Worst quarter:	Q1 2020	-31.87%

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series I	15.19	5.38	3.01
Series II	14.85	5.17	2.84
Series NAV	15.15	5.42	3.06
MSCI Emerging Markets Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	9.83	3.69	2.66

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Dimensional Fund Advisors LP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Jed S. Fogdall

Global Head of Portfolio Management, Senior Portfolio Manager and Vice President
Managed fund since 2010

Ethan Wren, CFA

Senior Portfolio Manager and Vice President
Managed fund since 2020

Mary T. Phillips, CFA

Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President
Managed fund since 2024

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Fund summary

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Equity Income Trust

Investment objective

To provide substantial dividend income and also long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.68 ¹	0.68 ¹	0.68 ¹
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.04	0.04	0.04
Total annual fund operating expenses	0.77	0.97	0.72
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.76	0.96	0.71

1 “Management fee” has been restated to reflect the contractual management fee schedule effective April 1, 2023.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	78	98	73
3 years	245	308	229
5 years	427	535	400
10 years	953	1,189	894

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 18% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities, with at least 65% in common stocks of well-established companies paying above-average dividends. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund typically employs a “value” approach and invests in stocks and other securities that appear to be undervalued by various measures and may be temporarily out of favor but have good prospects for capital appreciation and dividend

Fund summary

growth. The adviser generally seeks investments in large-capitalization companies and the fund's yield, which reflects the level of dividends paid by the fund, is expected to normally exceed the yield of the Russell 1000 Value Index.

Under normal market conditions, substantial dividend income means that the yield on the fund's portfolio securities generally is expected to exceed the yield on the fund's benchmark. The subadvisor believes that income can contribute significantly to total return over time and expects the fund's yield to exceed that of the S&P 500 Index. While the price of a company's stock can go up or down in response to earnings or to fluctuations in the general market, stocks paying a high level of dividend income tend to be less volatile than those with below-average dividends and may help offset losses in falling markets.

The fund will generally consider companies in the aggregate with one or more of the following characteristics:

- established operating histories;
- above-average dividend yield relative to the broader equity market;
- low price/earnings ratio relative to the broader equity market;
- sound balance sheets and other positive financial characteristics; and
- low stock price relative to a company's underlying value, as measured by assets, cash flow or business franchises.

The fund may also purchase other types of securities in keeping with its investment objective, including:

- U.S. dollar- and foreign currency-denominated foreign securities including American Depositary Receipts (ADRs) (up to 25% of total assets);
- preferred stocks;
- convertible stocks, bonds, and warrants;
- futures and options; and
- bank debt, loan participations and assignments.

The fund may at times invest significantly in certain sectors, including the financials and healthcare sectors.

The fund may invest in fixed-income securities without restrictions on quality or rating, including up to 10% in below-investment-grade fixed-income securities ("junk bonds"). The fund's fixed-income investments may include privately negotiated notes or loans, including loan participations and assignments ("bank loans"). These investments will only be made in companies, municipalities or entities that meet the fund's investment criteria. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risks of being a direct lender. Since the fund invests primarily in equity securities, the risks associated with fixed income securities will not affect the fund as much as they would a fund that invests more of its assets in fixed-income securities.

The fund may sell securities for a variety of reasons including to realize gains, limit losses or redeploy assets into more promising opportunities.

The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivative which can combine the characteristics of securities, futures and options. Such securities may bear interest or pay dividends at below market (or even relatively nominal) rates.

In pursuing the fund's investment objective, the subadvisor has the discretion to deviate from its normal investment criteria, as described above, and purchase securities the subadvisor believes will provide an opportunity for substantial appreciation. These special situations might arise when the subadvisor believes a security could increase in value for a variety of reasons including a change in management, an extraordinary corporate event, a new product introduction or a favorable competitive development.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Foreign currencies may decline in value, which could negatively impact performance.

Fund summary

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Healthcare sector risk. Health sciences companies may be significantly affected by product obsolescence, thin capitalization, limited product lines and markets, civil liability claims, and legislative or regulatory activities, among other factors.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depositary instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Fund summary

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

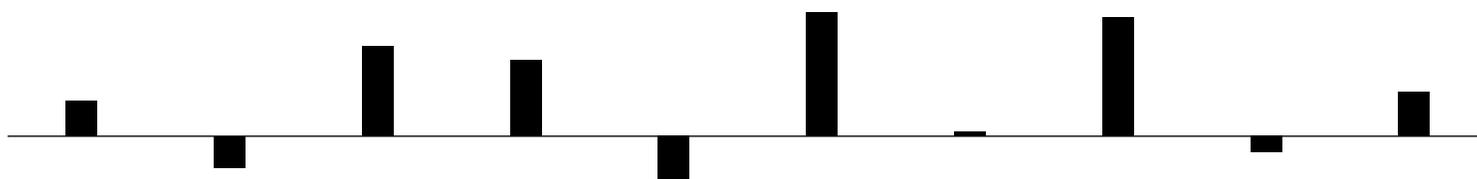
Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The S&P 500 Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
7.47	-6.75	19.12	16.29	-9.58	26.34	1.02	25.42	-3.40	9.39



Best quarter:	Q4 2020	20.95%
Worst quarter:	Q1 2020	-28.60%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	9.39	11.08	7.82
Series II	9.26	10.88	7.61
Series NAV	9.52	11.15	7.88
Russell 1000 Value Index (reflects no deduction for fees, expenses, or taxes)	11.46	10.91	8.40
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

John D. Linehan, CFA

Vice President

Managed fund since 2015

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Financial Industries Trust

Investment objective

To seek growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.78	0.78	0.78
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.12	0.12	0.12
Total annual fund operating expenses	0.95	1.15	0.90
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.94	1.14	0.89

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	96	116	91
3 years	302	364	286
5 years	525	632	497
10 years	1,165	1,397	1,107

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 68% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowing for investment purposes) in companies that are principally engaged in financial services. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) These companies include U.S. and foreign financial services companies of any size including banks, thrifts, finance companies, brokerage and advisory firms, real estate-related firms, insurance companies, financial technology companies and financial holding companies. The fund may gain exposure to securities described in these strategies through investing in investment companies and pooled investment vehicles.

Fund summary

In managing the fund, the subadvisor focuses primarily on stock selection rather than industry allocation. In choosing individual stocks, the subadvisor uses fundamental financial analysis to identify securities that appear comparatively undervalued.

The fund concentrates its investments (invests more than 25% of its total assets) in companies that are principally engaged in financial services, and therefore may experience greater volatility than funds investing in a broader range of industries.

Given the industry-wide trend toward consolidation, the subadvisor also invests in companies that appear to be positioned for a merger. The subadvisor generally gathers firsthand information about companies from interviews and company visits.

The fund may invest in U.S. and foreign bonds, including up to 5% of net assets in below investment-grade bonds (i.e., “junk bonds”) rated as low as CCC by S&P Global Ratings (S&P) or Caa by Moody’s Investors Service, Inc. (Moody’s) and their unrated equivalents. It may also invest up to 15% of net assets in investment-grade short-term securities. The fund’s investment policies are based on credit ratings at the time of purchase.

In abnormal circumstances, the fund may temporarily invest up to 80% of its assets in investment-grade short-term securities. In these and other cases, the fund might not achieve its investment objective.

The fund may, to a limited extent, engage in derivative transactions that include futures contracts, options and foreign currency forward contracts, in each case for the purpose of reducing risk, obtaining efficient market exposure and/or enhancing investment returns.

The fund may invest in companies located in emerging market countries.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Banking industry risk. Commercial banks, savings and loan associations, and holding companies of the foregoing are especially subject to adverse effects of volatile interest rates, concentrations of loans in particular industries, and significant competition. Profitability of these businesses depends significantly upon the availability and cost of capital funds. Commercial banks and savings associations are subject to extensive state regulation.

Concentration risk. Because the fund may focus on one or more industries or sectors of the economy, its performance depends in large part on the performance of those industries or sectors. As a result, the value of an investment may fluctuate more widely since it is more susceptible to market, economic, political, regulatory, and other conditions and risks affecting those industries or sectors than a fund that invests more broadly across industries and sectors.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Financial services sector risk. A fund investing principally in securities of companies in the financial services sector is particularly vulnerable to events affecting that sector. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, and options. Foreign currency forward contracts, futures contracts, and options generally are subject to counterparty risk. Derivatives associated with foreign currency transactions are subject to currency risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Real estate securities risk. Securities of companies in the real estate industry carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

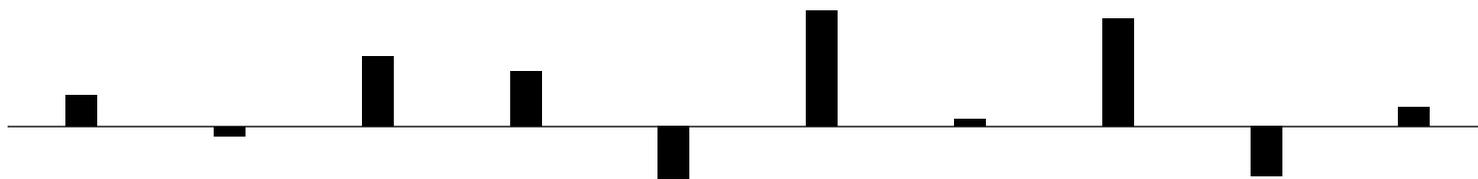
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The S&P 500 Index shows how the fund's performance compares against another broad measure of market performance. The Lipper Financial Services Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
8.65	-2.65	19.37	15.28	-14.49	31.79	2.17	29.70	-13.67	5.22



Best quarter:	Q4 2020	22.33%
Worst quarter:	Q1 2020	-30.18%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	5.22	9.67	7.04
Series II	4.98	9.44	6.82
Series NAV	5.21	9.70	7.08
S&P 500 Financials Index (reflects no deduction for fees, expenses, or taxes)	12.15	11.97	10.05
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
Lipper Financial Services Index (reflects no deduction for fees, expenses, or taxes)	14.44	12.30	8.71

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Susan A. Curry
Senior Portfolio Manager
Managed fund since 2014

Ryan P. Lentell, CFA
Portfolio Manager
Managed fund since 2015

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain

Fund summary

intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Fundamental All Cap Core Trust

Investment objective

To seek long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.67	0.67	0.67
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	0.77	0.97	0.72
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.76	0.96	0.71

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	78	98	73
3 years	245	308	229
5 years	427	535	400
10 years	953	1,189	894

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 16% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities. Market capitalizations of these companies will span the capitalization spectrum. Equity securities include common, convertible, and preferred securities and their equivalents.

In managing the fund, the subadvisor looks for companies that are highly differentiated with key growth drivers, sustainable cash flow production, and high returns on capital. The subadvisor seeks to identify companies with sustainable competitive advantages and high barriers to entry, strong

Fund summary

management and a focus on creating value for fund shareholders. Both growth and value opportunities are evaluated with an approach that uses the present value of estimated future cash flows as the core methodology for measuring intrinsic value.

The subadvisor employs a disciplined fundamental research process which produces bottom-up company assessments using key assumptions that drive sales, margins, and asset intensity. Scenario analysis is designed to provide a meaningful range of outcomes and the ability to assess investors' embedded expectations. The subadvisor seeks to purchase companies that meet the criteria above when the shares are selling at a significant discount to intrinsic value. Sell decisions are similarly driven by long term fundamental analysis.

The subadvisor constantly reviews portfolio investments and may sell a holding when it has achieved its valuation target, if it believes there is structural or permanent deterioration in the underlying fundamentals of the business, or if it identifies what it believes is a more attractive investment opportunity.

The fund may invest up to 20% of its net assets in equity securities of foreign issuers, including American Depositary Receipts (ADRs) and similar investments. For purposes of reducing risk and/or obtaining efficient investment exposure, the fund may invest in exchange-traded funds (ETFs) and derivative instruments that include options, futures contracts, and swaps. The fund may also invest in U.S. government securities and other short-term securities such as money market instruments and repurchase agreements.

The fund may focus its investments in a particular sector or sectors of the economy.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under "Additional Information About the Funds' Principal Risks — Hedging, derivatives and other strategic transactions risk."

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund's investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Consumer discretionary sector risk. The consumer discretionary sector may be affected by fluctuations in supply and demand, and may also be adversely affected by changes in consumer spending as a result of world events, political and economic conditions, commodity price volatility, changes in exchange rates, imposition of import controls, increased competition, depletion of resources, and labor relations.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize if any, include: futures contracts, interest-rate swaps, options, foreign currency forward contracts, credit default swaps, foreign currency swaps, swaptions, equity-linked notes, inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligations. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Fund summary

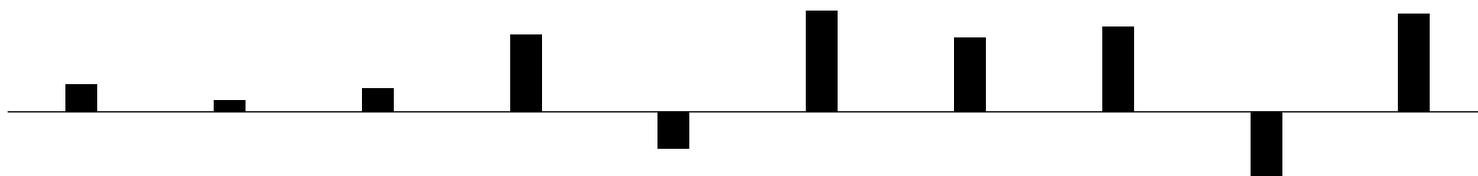
U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
9.74	4.01	8.34	27.70	-13.16	36.45	26.87	30.63	-24.29	35.40



Best quarter:	Q2 2020	32.27%
Worst quarter:	Q1 2020	-24.67%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	35.40	18.31	12.26
Series II	35.10	18.07	12.04
Series NAV	35.44	18.38	12.32
Russell 3000 Index (reflects no deduction for fees, expenses, or taxes)	25.96	15.16	11.48

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Emory W. (Sandy) Sanders, Jr., CFA

Senior Portfolio Manager
Managed fund since 2011

Jonathan T. White, CFA

Senior Portfolio Manager
Managed fund since 2015

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of

Fund summary

shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Fundamental Large Cap Value Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.68	0.68	0.68
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.79	0.99	0.74
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.78	0.98	0.73

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	80	100	75
3 years	251	314	236
5 years	438	546	410
10 years	977	1,212	917

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 13% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets in equity securities of large-capitalization companies. The fund considers large-capitalization companies to be those that at the time of purchase have a market capitalization equal to or greater than that of the top 80% of the companies that comprise the Russell 1000 Index. As of February 29, 2024, the lowest market capitalization in this group was \$6.3 billion. Equity securities include common, convertible, and preferred securities and their equivalents.

Fund summary

In managing the fund, the subadvisor looks for companies that are highly differentiated with key growth drivers, sustainable cash flow production, and high returns on capital. The subadvisor seeks to identify companies with sustainable competitive advantages and high barriers to entry, strong management and a focus on creating value for fund shareholders. Value opportunities are evaluated with an approach that uses the present value of estimated future cash flows as the core methodology for measuring intrinsic value.

The subadvisor employs a disciplined fundamental research process which produces bottom-up company assessments using key assumptions that drive sales, margins, and asset intensity. Scenario analysis is designed to provide a meaningful range of outcomes and the ability to assess investors' embedded expectations. The subadvisor seeks to purchase companies that meet the criteria above when the shares are selling at a significant discount to intrinsic value. Sell decisions are similarly driven by long term fundamental analysis.

The subadvisor constantly reviews portfolio investments and may sell a holding when it has achieved its valuation target, if it believes there is structural or permanent deterioration in the underlying fundamentals of the business, or if it identifies what it believes is a more attractive investment opportunity.

The fund may focus its investments in a particular sector or sectors of the economy.

The fund may invest up to 20% of its net assets in equity securities of foreign issuers, including American Depositary Receipts (ADRs) and similar investments. For purposes of reducing risk and/or obtaining efficient investment exposure, the fund may invest in exchange-traded funds (ETFs) and derivative instruments that include options, futures contracts, and swaps. The fund may also invest in U.S. government securities and other short-term securities such as money market instruments and repurchase agreements.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund's investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, options, and swaps. Futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

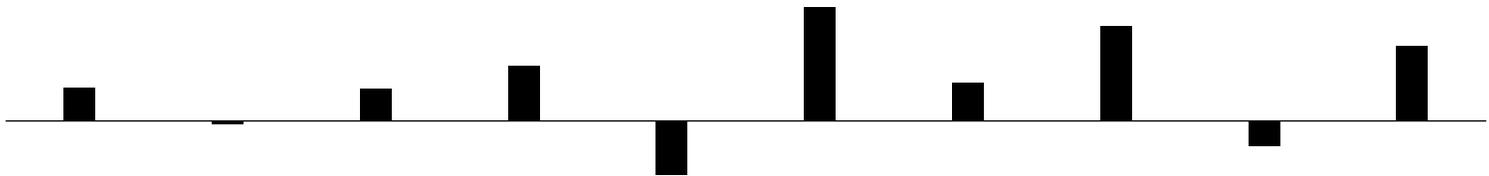
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
10.61	-1.11	10.17	17.43	-17.03	35.85	11.96	29.96	-7.95	23.45



Best quarter:	Q2 2020	19.70%
Worst quarter:	Q1 2020	-24.95%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	23.45	17.57	10.18
Series II	23.22	17.35	9.97
Series NAV	23.49	17.64	10.24
Russell 1000 Value Index (reflects no deduction for fees, expenses, or taxes)	11.46	10.91	8.40

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Emory W. (Sandy) Sanders, Jr., CFA

Senior Portfolio Manager

Managed fund since 2011

Nicholas P. Renart

Portfolio Manager and Senior Investment Analyst

Managed fund since 2015

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Global Equity Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.80	0.80	0.80
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	0.95	1.15	0.90
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.94	1.14	0.89

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	96	116	91
3 years	302	364	286
5 years	525	632	497
10 years	1,165	1,397	1,107

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 38% of the average value of its portfolio.

Principal investment strategies

The fund seeks to generate capital appreciation by investing at least 80% of net assets (plus borrowings for investment purposes) in a diversified portfolio of equity securities. This policy is subject to change only upon 60 days' prior written notice to shareholders. Under normal market conditions, at least 40% of the value of the fund's net assets will be invested in issuers domiciled outside of the United States ("Foreign Companies"), unless the manager deems market conditions and/or company valuations to be less favorable to Foreign Companies, in which case, the fund will invest at least 30% of the value of its net assets in Foreign Companies. Foreign Companies include issuers domiciled in emerging markets and securities for which the relevant reference entity is domiciled outside the United States, such as American Depositary Receipts (ADRs), that trade on U.S. exchanges. There are

Fund summary

no limits on the market capitalization ranges of the companies in which the fund may invest. The fund may invest in the securities of large, medium, or small companies.

In managing the fund, the manager seeks to identify undervalued companies that exhibit attractive valuations, solid business franchises, sustainable margins/cash flow, disciplined capital allocation, strong management teams, and strong balance sheets.

The manager employs an unconstrained, bottom-up stock selection process based on disciplined fundamental research with the aim to create a diversified portfolio of quality global stocks of any size that not only demonstrate compelling value but also generate sustainable cash flows. Equity securities include common and preferred stocks and their equivalents, including depositary receipts, warrants, rights, and securities convertible into common or preferred stocks.

The decision-making process involves candidate companies being screened for valuation, quality, and dividends, together with a detailed examination of the challenges and opportunities that exist for that business. The manager will assess the valuation opportunity for that company by establishing base-case, upside, and downside price targets. The manager will take into consideration the diversification benefits and the liquidity of the security before making the final investment decision.

The fund may invest in cash, money market instruments, repurchase agreements, or other short-term instruments for the purposes of meeting redemption requests or making other anticipated cash payments.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund's investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Fund summary

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

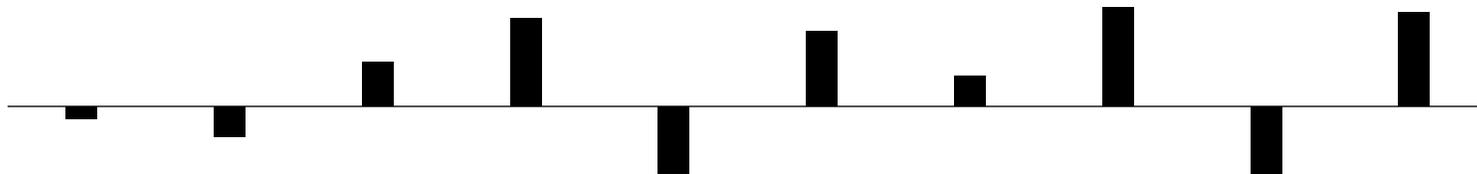
The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

A note on performance

Prior to April 27, 2020, the fund was managed by a different subadvisor pursuant to different investment strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor. The fund's performance shown below might have differed materially had the current subadvisor managed the fund prior to April 27, 2020.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-2.60	-6.42	9.47	18.88	-14.49	16.04	6.60	21.30	-14.84	20.09



Best quarter:	Q2 2020	14.79%
Worst quarter:	Q1 2020	-21.94%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	20.09	8.94	4.52
Series II	19.81	8.72	4.31
Series NAV	20.17	8.99	4.58
MSCI World Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	23.79	12.80	8.60

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Fund summary

Paul Boyne

Senior Managing Director and
Senior Portfolio Manager
Managed fund since 2020

Stephen Hermsdorf

Portfolio Manager and Analyst
Managed fund since 2020

Edward Ritchie, ASIP

Senior Managing Director and
Head of Japan Equities, Portfolio
Manager and Analyst
Managed fund since 2023

Felicity Smith

Portfolio Manager and Analyst
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Health Sciences Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.92	0.92	0.92
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.09	0.09	0.09
Total annual fund operating expenses	1.06	1.26	1.01
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.05	1.25	1.00

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	107	127	102
3 years	336	399	321
5 years	584	691	557
10 years	1,293	1,522	1,235

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 43% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in common stocks of companies engaged, at the time of investment, in the research, development, production, or distribution of products or services related to health care, medicine, or the life sciences (collectively, "health sciences"). (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.)

While the fund may invest in companies of any size, the majority of its assets are expected to be invested in large- and mid-cap companies.

Fund summary

The subadvisor's portfolio managers divide the health sciences sector into four main areas: pharmaceutical companies, health care services companies, medical products and devices providers, and biotechnology firms. Their allocation among these four areas will vary depending on the relative potential within each area and the outlook for the overall health sciences sector. While most assets will be invested in U.S. common stocks, the fund may purchase other securities, including foreign securities, in keeping with its investment objective.

The fund concentrates its investments (invests more than 25% of its total assets) in securities of companies in the health sciences sector, a comparatively narrow segment of the economy, and therefore may experience greater volatility than funds investing in a broader range of industries.

In managing the fund, the subadvisor uses a fundamental, bottom-up analysis that seeks to identify high quality companies and the most compelling investment opportunities. In general, the fund will follow a growth investment strategy, seeking companies whose earnings are expected to grow faster than inflation and the economy in general. When stock valuations seem unusually high, however, a "value" approach, which gives preference to seemingly undervalued companies, may also be emphasized.

The fund may invest up to 35% of its total assets in foreign securities (including emerging market securities) and may have exposure to foreign currencies through its investment in these securities, its direct holdings of foreign currencies or through its use of foreign currency exchange contracts for the purchase or sale of a fixed quantity of a foreign currency at a future date.

In pursuing its investment objective, the fund's management has the discretion to purchase some securities that do not meet its normal investment criteria, as described above, when it perceives an opportunity for substantial appreciation. These situations might arise when the fund's management believes a security could increase in value for a variety of reasons including a change in management, an extraordinary corporate event, or a new product introduction or innovation or a favorable competitive development.

The fund may sell securities for a variety of reasons including to realize gains, limit losses or redeploy assets into more promising opportunities.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under "Additional Information About the Funds' Principal Risks — Hedging, derivatives and other strategic transactions risk" including entering into option transactions.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Concentration risk. Because the fund may focus on one or more industries or sectors of the economy, its performance depends in large part on the performance of those industries or sectors. As a result, the value of an investment may fluctuate more widely since it is more susceptible to market, economic, political, regulatory, and other conditions and risks affecting those industries or sectors than a fund that invests more broadly across industries and sectors.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Foreign currencies may decline in value, which could negatively impact performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hong Kong Stock Connect Program (Stock Connect) risk. Trading in China A-Shares through Stock Connect, a mutual market access program that enables foreign investment in the People's Republic of China (PRC), is subject to certain restrictions and risks. Securities listed on Stock Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Stock Connect is subject to trading,

Fund summary

clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Stock Connect may affect China A-Share prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Healthcare sector risk. Health sciences companies may be significantly affected by product obsolescence, thin capitalization, limited product lines and markets, civil liability claims, and legislative or regulatory activities, among other factors.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options, credit default swaps, foreign currency swaps, interest rate swaps, swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depends on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, and options generally are subject to counterparty risk. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The Lipper Health/Biotechnology Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
31.83	12.69	-10.57	27.51	0.69	28.68	27.17	11.19	-13.09	4.25



Best quarter:	Q2 2020	23.63%
Worst quarter:	Q4 2018	-16.07%

Fund summary

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series I	4.25	10.52	10.89
Series II	4.02	10.29	10.67
Series NAV	4.26	10.56	10.94
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
Lipper Health/Biotechnology Index (reflects no deduction for fees, expenses, or taxes)	5.24	9.08	9.63

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Ziad Bakri, MD, CFA

Vice President

Managed fund since 2016

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

High Yield Trust

Investment objective

To realize an above-average total return over a market cycle of three to five years, consistent with reasonable risk.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.70	0.70	0.70
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.12	0.12	0.12
Total annual fund operating expenses	0.87	1.07	0.82
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.86	1.06	0.81

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	88	108	83
3 years	277	339	261
5 years	481	589	454
10 years	1,072	1,305	1,013

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 38% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) at the time of investment in high yield securities. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund's investments may include corporate bonds, preferred stocks, U.S. government and foreign securities, mortgage-backed securities, loan assignments or participations and convertible securities which have the following ratings (or, if unrated, are considered by the subadvisor to be of equivalent quality):

Corporate Bonds, Preferred Stocks and Convertible Securities

Moody's Investors Service, Inc.....Ba through C

S&P Global Ratings.....BB through D

Below-investment-grade securities are commonly referred to as "junk bonds." The fund may also invest in investment-grade securities.

As part of its investment strategy, the fund will generally invest without restrictions within these ratings category ranges, or in unrated securities considered to be of equivalent quality by the subadvisor.

The fund may invest in foreign bonds and other fixed-income securities denominated in foreign currencies, where, in the opinion of the subadvisor, the combination of current yield and currency value offer attractive expected returns. Foreign securities in which the fund may invest include emerging market securities. The fund may invest up to 100% of its assets in foreign securities.

The fund may also enter into various derivative transactions for both hedging and non-hedging purposes, including for purposes of enhancing returns. These derivative transactions include, but are not limited to, futures, options, swaps and forwards. In particular, the fund may use interest rate swaps, credit default swaps (on individual securities and/or baskets of securities), futures contracts and/or mortgage-backed securities to a significant extent, although the amounts invested in these instruments may change from time to time.

The fund may invest in fixed- and floating-rate loans, generally in the form of loan participations and assignments of such loans.

The fund normally maintains an average portfolio duration of between three and seven years. However, the fund may invest in individual securities of any duration. Duration is an approximate measure of the sensitivity of the market value of a security to changes in interest rates.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Floating rate loans risk. Floating rate loans are generally rated below investment-grade and are generally considered speculative because they present a greater risk of loss, including default, than higher quality debt instruments.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps; foreign currency forward contracts; foreign currency swaps; futures contracts; interest-rate swaps; and options. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to

Fund summary

counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

LIBOR discontinuation risk. The official publication of the London Interbank Offered Rate (LIBOR), which many debt securities, derivatives and other financial instruments traditionally utilized as the reference or benchmark rate for interest rate calculations, was discontinued as of June 30, 2023. However, a subset of LIBOR settings will continue to be published on a “synthetic” basis. The synthetic publication of the one-, three- and six-month U.S. dollar LIBOR will continue until September 30, 2024. The discontinuation of LIBOR and a transition to replacement rates may lead to volatility and illiquidity in markets and may adversely affect the fund’s performance.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer’s board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock’s value can depend heavily upon the underlying common stock’s value.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

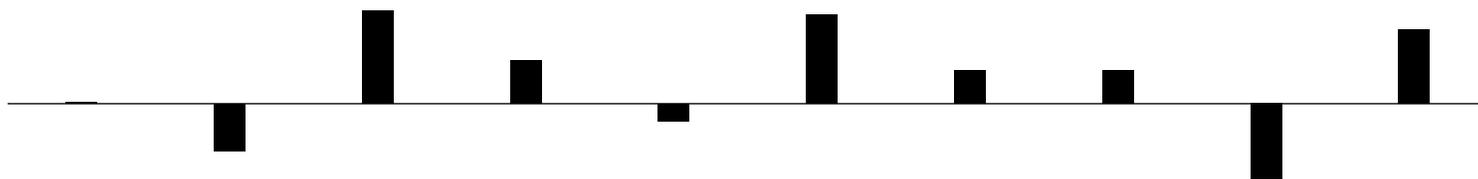
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
0.28	-8.32	16.26	7.50	-3.01	15.66	5.81	5.82	-13.25	13.05



Best quarter:	Q2 2020	11.06%
Worst quarter:	Q1 2020	-14.88%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.05	4.90	3.54
Series II	12.70	4.70	3.33
Series NAV	12.87	4.95	3.58
Bloomberg U.S. High Yield 2% Issuer Capped Index (reflects no deduction for fees, expenses, or taxes)	13.44	5.35	4.59

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC
Subadvisor Western Asset Management Company, LLC
Sub-Subadvisor Western Asset Management Company Limited

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Michael C. Buchanan
Deputy Chief Investment Officer
Managed fund since 2006

Walter E. Kilcullen
Head of US High Yield
Managed fund since 2018

Ryan Kohan
Head of Bank Loans
Managed fund since 2024

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain

Fund summary

intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

International Equity Index Trust

Investment objective

To seek to track the performance of a broad-based equity index of foreign companies primarily in developed countries and, to a lesser extent, in emerging markets.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.52	0.52	0.52
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.09	0.09	0.09
Total annual fund operating expenses	0.66	0.86	0.61
Contractual expense reimbursement	-0.27 ¹	-0.27 ¹	-0.27 ¹
Total annual fund operating expenses after expense reimbursements	0.39	0.59	0.34

1 The advisor contractually agrees to reduce its management fee or, if necessary, make payment to the fund in an amount equal to the amount by which expenses of the fund exceed 0.34% of average daily net assets of the fund. For purposes of this agreement, "expenses of the fund" means all fund expenses, excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund's business, (e) class-specific expenses, (f) borrowing costs, (g) prime brokerage fees, (h) acquired fund fees and expenses paid indirectly, and (i) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the advisor and the fund based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	40	60	35
3 years	184	247	168
5 years	341	450	313
10 years	797	1,036	736

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 4% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its assets in securities listed in the MSCI All Country World Excluding U.S. Index (the “Index”), or American Depositary Receipts (ADRs) or Global Depositary Receipts (GDRs) representing such securities. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) As of February 29, 2024, the market capitalization range of the Index was \$889 million to \$2,045 billion.

The fund is an index fund and differs from an actively-managed fund. Actively-managed funds seek to outperform their benchmark indices through research and analysis. Over time, their performance may differ significantly from their benchmark indices. Index funds are passively managed funds that seek to track the risk and return profile of market indices. An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indices may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. However, an index fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index, typically will be unable to match the performance of the index exactly due to such fees and expenses.

The fund uses “sampling” methodology in seeking to track the total return performance of the Index. This means that the fund does not intend and is not required to purchase all of the securities in the Index, but rather intends to hold a representative sample of the securities in the Index in an effort to achieve the fund’s investment objective. The quantity of holdings in the fund will be based on a number of factors, including asset size of the fund. Although the subadvisor generally expects the fund to hold less than the total number of securities in the Index, it reserves the right to hold as many securities as it believes necessary to achieve the fund’s investment objective.

The fund’s assets are normally fully invested. The subadvisor invests in stock index futures to maintain market exposure and manage cash flow. Although the subadvisor may employ foreign currency hedging techniques, it normally maintains the currency exposure of the underlying equity investments.

The fund may purchase other types of securities that are not primary investment vehicles, for example, European Depositary Receipts (EDRs), certain exchange-traded funds (ETFs), cash equivalents, and certain derivatives (investments whose value is based on indices or other securities). In addition, the fund may invest in securities that are not included in the Index, including futures, options, swap contracts and other derivatives, cash and cash equivalents or money market instruments, such as repurchase agreements and money market funds (including money market funds advised by the advisor or subadvisor).

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF’s shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Fund summary

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, options, and swaps. Futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

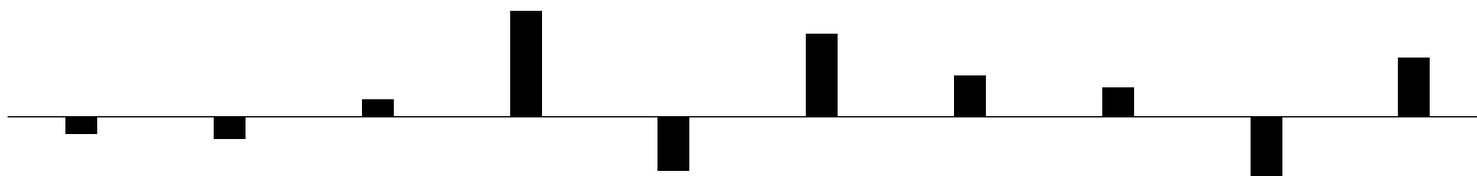
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-4.57	-5.80	4.43	27.45	-14.10	21.44	10.76	7.59	-16.16	15.42



Best quarter:	Q2 2020	17.11%
Worst quarter:	Q1 2020	-23.62%

Fund summary

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series I	15.36	6.90	3.65
Series II	15.18	6.70	3.45
Series NAV	15.42	6.97	3.71
MSCI ACWI ex USA Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	15.62	7.08	3.83

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor SSGA Funds Management, Inc.

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Thomas Coleman, CFA

Vice President and Senior Portfolio Manager

Managed fund since 2005

Karl Schneider, CAIA

Managing Director, Senior Portfolio Manager and

Head of Traditional Beta Strategies for the Global

Equity Beta Solutions Group in the Americas

Managed fund since 2007

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

International Small Company Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.80	0.80	0.80
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.21	0.21	0.21
Total annual fund operating expenses	1.06	1.26	1.01
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.05	1.25	1.00

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	107	127	102
3 years	336	399	321
5 years	584	691	557
10 years	1,293	1,522	1,235

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 11% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in securities of small cap companies in the particular markets in which the fund invests. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) Based on market capitalization data as of February 29, 2024, the market capitalization of a small company in any country in which the fund invests would generally be below \$7.7 billion. This threshold will vary by country or region. The fund will primarily invest in a broad and diverse group of equity securities of foreign small companies of developed markets, but may also hold equity securities of companies located in emerging markets.

Fund summary

The fund invests its assets in securities listed on bona fide securities exchanges. These exchanges may be either within or outside the issuer's domicile country. The securities may be listed or traded in the form of American Depositary Receipts (ADRs), European Depositary Receipts (EDRs), Global Depositary Receipts (GDRs), Non-Voting Depositary Receipts (NVDRs) or other similar securities, including dual-listed securities.

The subadvisor determines company size on a country or region specific basis and based primarily on market capitalization. In the countries or regions authorized for investment, the subadvisor first ranks eligible companies listed on selected exchanges based on the companies' market capitalizations. The subadvisor then determines the universe of eligible stocks by defining the maximum market capitalization of a small company that may be purchased by the fund with respect to each country or region. This threshold will vary by country or region, and dollar amounts will change due to market conditions.

The fund intends to purchase securities in each applicable country using a market capitalization weighted approach. The subadvisor, using this approach and its judgment, will seek to set country weights based on the relative market capitalizations of eligible small companies within each country. See "Market Capitalization Weighted Approach" below. The weightings of countries in the fund may vary from their weightings in international indices, such as those published by FTSE Russell or MSCI.

The fund also may use derivatives such as futures contracts and options on futures contracts, to increase or decrease equity market exposure based on actual or expected cash inflows to or outflows from the fund. The fund may enter into futures contracts and options on futures contracts for foreign or U.S. equity securities and indices. The fund may also enter into forward currency contracts to facilitate the settlement of equity purchases of foreign securities, repatriation of foreign currency balances or exchange of one foreign currency for another currency. In addition to money market instruments and other short-term investments, the fund may invest in affiliated and unaffiliated unregistered money market funds to manage the fund's cash pending investment in other securities or to maintain liquidity for the payment of redemptions or other purposes. Investments in money market funds may involve a duplication of certain fees and expenses.

Generally, the fund does not seek current income as an investment objective and investments will not be based upon an issuer's dividend payment policy or record. However, many of the companies whose securities will be included in the fund do pay dividends. It is anticipated, therefore, that the fund will receive dividend income.

The subadvisor will determine in its discretion when and whether to invest in countries that have been authorized for investment by its Investment Committee, depending on a number of factors such as asset growth in the fund, constraints imposed within a country's market, and characteristics of each country's market. The subadvisor's Investment Committee may authorize other countries for investment in the future and the fund may continue to hold investments in countries not currently authorized for investment but that had previously been authorized for investment.

Market Capitalization Weighted Approach

The fund structure involves market capitalization weighting in determining individual security weights and, where applicable, country or region weights. Market capitalization weighting means each security is generally purchased based on the issuer's relative market capitalization. Market capitalization weighting may be modified by the subadvisor for a variety of reasons. The subadvisor may adjust the representation in the fund of an eligible company, or exclude a company, after considering such factors as free float, price momentum, short-run reversals, trading strategies, liquidity, size, relative price, profitability, investment characteristics, and other factors the subadvisor determines to be appropriate. An equity issuer is considered to have a low relative price (i.e., a value stock) primarily because it has a low price in relation to its book value. In assessing relative price, the subadvisor may consider additional factors such as price to cash flow or price to earnings ratios. In assessing profitability, the subadvisor considers different ratios, such as that of earnings or profits from operations relative to book value or assets. In assessing a company's investment characteristics, the subadvisor considers ratios such as recent changes in assets divided by total assets. The criteria the subadvisor uses for assessing relative price, profitability and investment characteristics are subject to change from time to time. The subadvisor may deviate from market capitalization weighting to limit or fix the exposure of the fund to a particular country or issuer to a maximum proportion of the assets of the fund. The subadvisor may exclude the stock of a company that meets applicable market capitalization criteria if the subadvisor determines, in its judgment, that the purchase of such stock is inappropriate in light of other conditions. The subadvisor may decrease the allocation of the fund's assets to eligible small capitalization companies that generally have lower profitability and/or higher relative prices. These adjustments will result in a deviation from traditional market capitalization weighting.

Country weights may be based on the total market capitalization of companies within each country. The calculation of country weights may take into consideration the free float of companies within a country or whether these companies are eligible to be purchased for the particular strategy. In addition, to maintain a satisfactory level of diversification, the Investment Committee may limit or fix the exposure to a particular country or region to a maximum proportion of the assets of that vehicle. Country weights may also vary due to general day-to-day trading patterns and price movements. The weighting of countries may vary from their weighting in published international indices.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Foreign currencies may decline in value, which could negatively impact performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Geographic risk. A natural or other disaster could occur in a geographic region in which the fund invests, which could affect the economy or particular business operations of companies in the specific geographic region, causing an adverse impact on the fund's investments in the affected region.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options on futures contracts, and options. Foreign currency forward contracts, futures contracts, and options generally are subject to counterparty risk. Derivatives associated with foreign currency transactions are subject to currency risk.

Industrials sector risk. Companies in the industrials sector may be affected by general economic conditions, commodity production and pricing, supply and demand fluctuations, environmental and other government regulations, geopolitical events, interest rates, insurance costs, technological developments, liabilities arising from governmental or civil actions, labor relations, input controls, and government spending.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Fund summary

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

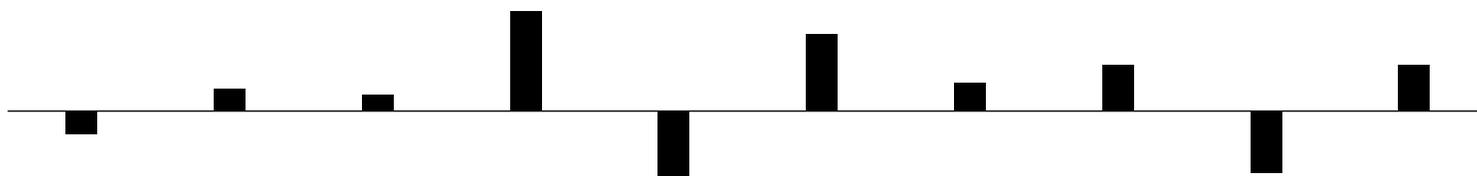
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The MSCI EAFE Small Cap Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-6.85	6.68	4.95	29.60	-20.08	22.70	8.41	13.77	-18.17	13.59



Best quarter:	Q2 2020	20.80%
Worst quarter:	Q1 2020	-30.16%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.44	7.00	4.21
Series II	13.33	6.80	4.01
Series NAV	13.59	7.06	4.27
MSCI World ex USA Small Cap Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	12.62	7.05	4.63
MSCI EAFE Small Cap Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	13.16	6.58	4.80

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Dimensional Fund Advisors LP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Jed S. Fogdall

Global Head of Portfolio Management, Senior Portfolio Manager and Vice President
Managed fund since 2010

Arun Keswani, CFA

Senior Portfolio Manager and Vice President
Managed fund since 2015

Joel P. Schneider

Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Fund summary

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Investment Quality Bond Trust

Investment objective

To provide a high level of current income consistent with the maintenance of principal and liquidity.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.60	0.60	0.60
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.12	0.12	0.12
Total annual fund operating expenses	0.77	0.97	0.72
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.76	0.96	0.71

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	78	98	73
3 years	245	308	229
5 years	427	535	400
10 years	953	1,189	894

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 41% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in bonds rated investment grade at the time of investment. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund will tend to focus on corporate bonds and U.S. government bonds with intermediate-to longer-term maturities.

The subadvisor's investment decisions derive from a three-pronged analysis, including:

- sector analysis,

Fund summary

- credit research, and
- call protection.

Sector analysis focuses on the differences in yields among security types, issuers, and industry sectors. Credit research focuses on both quantitative and qualitative criteria established by the subadvisor, such as call protection (payment guarantees), an issuer's industry, operating and financial profiles, business strategy, management quality, and projected financial and business conditions. Individual purchase and sale decisions are made on the basis of relative value and the contribution of a security to the desired characteristics of the overall fund. Factors considered include:

- relative valuation of available alternatives,
- impact on portfolio yield, quality and liquidity, and
- impact on portfolio maturity and sector weights.

The subadvisor attempts to maintain a high, steady and possibly growing income stream.

At least 80% of the fund's net assets are invested in bonds and debentures, including:

- marketable debt securities of U.S. and foreign issuers (payable in U.S. dollars), rated as investment grade by Moody's or S&P at the time of purchase, including privately placed debt securities, corporate bonds, asset-backed securities, mortgage-backed securities and commercial mortgage-backed securities;
- securities issued or guaranteed as to principal or interest by the U.S. government or its agencies or instrumentalities, including mortgage-backed securities; and
- cash and cash equivalent securities which are authorized for purchase by Money Market Trust, a series of the Trust.

The balance (no more than 20%) of the fund's net assets may be invested in below-investment-grade bonds and other securities including:

- privately placed debt securities,
- U.S. and foreign debt securities,
- preferred stocks,
- convertible securities (including those issued in the Euromarket),
- securities carrying warrants to purchase equity securities,
- foreign exchange contracts for purposes of hedging portfolio exposures to foreign currencies or for purposes of obtaining exposure to foreign currencies,
- hybrid securities, and
- below-investment-grade and investment-grade foreign currency denominated fixed-income securities, including up to 5% emerging market fixed-income securities.

In pursuing its investment objective, the fund may invest up to 20% of its net assets in U.S. and foreign high yield (high risk) corporate and government debt securities (commonly known as "junk bonds"). These instruments are rated "Ba" or below by Moody's or "BB" or below by S&P (or, if unrated, are deemed of comparable quality as determined by the subadvisor). No minimum rating standard is required for a purchase of high yield securities by the fund. While the fund may only invest up to 20% of its net assets in securities rated in these rating categories, it is not required to dispose of bonds that may be downgraded after purchase, even though such downgrade may cause the fund to hold more than 20% of its net assets in high yield securities. The fund's investment policies are based on credit ratings at the time of purchase.

The fund normally maintains an average portfolio duration of between three and seven years. However, the fund may invest in individual securities of any duration. Duration is an approximate measure of the sensitivity of the market value of a security to changes in interest rates.

The fund may invest in derivatives such as interest rate futures and options, interest rate swaps, currency forwards, options on financial indices and credit default swaps to manage duration and yield curve positioning, implement foreign interest rate and currency positions, hedge against risk and/or as a substitute for investing directly in a security.

The fund may make short sales of a security including short sales "against the box."

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, options, and interest-rate swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

TBA mortgage contracts. To-be-announced (TBA) mortgage contracts involve a risk of loss if the value of the underlying security to be purchased declines prior to delivery date. The yield obtained for such securities may be higher or lower than yields available in the market on delivery date.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Fund summary

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

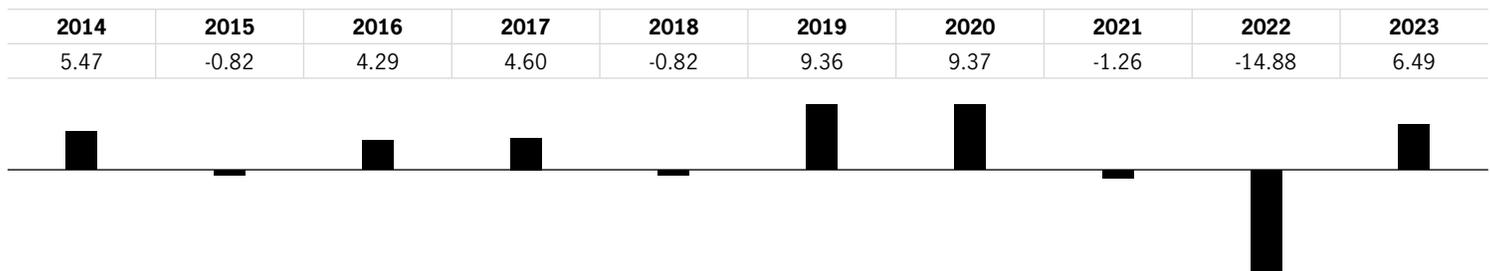
U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I



Best quarter:	Q4 2023	7.18%
Worst quarter:	Q1 2022	-6.61%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	6.49	1.37	1.94
Series II	6.28	1.17	1.74
Series NAV	6.57	1.41	2.00
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Robert D. Burn, CFA
Senior Managing Director and Fixed Income
Portfolio Manager
Managed fund since 2016

Campe Goodman, CFA
Senior Managing Director and Fixed Income
Portfolio Manager
Managed fund since 2010

Joseph F. Marvan, CFA
Senior Managing Director and Fixed Income
Portfolio Manager
Managed fund since 2010

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Lifestyle Balanced Portfolio

Investment objective

To seek a balance between a high level of current income and growth of capital, with a greater emphasis on growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.04	0.04	0.04
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.04	0.04	0.04
Acquired fund fees and expenses	0.56 ¹	0.56 ¹	0.56 ¹
Total annual fund operating expenses	0.69²	0.89²	0.64²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	70	91	65
3 years	221	284	205
5 years	384	493	357
10 years	859	1,096	798

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 9% of the average value of its portfolio.

Principal investment strategies

The fund, except as otherwise described below, operates as a fund of funds and normally invests approximately 50% of its assets in underlying funds that invest primarily in equity securities or in futures contracts on equity markets (the “Equity Allocation”) and approximately 50% of its assets in underlying funds that invest primarily in fixed-income securities or in futures contracts on fixed-income markets (the “Fixed Income Allocation”). Underlying funds may include exchange traded funds (“ETFs”) and the fund may invest a significant portion of its assets in ETFs. At the discretion of the subadvisor, the Equity Allocation may also include direct investments in equity securities and the Fixed Income Allocation may also include direct investments in fixed-income securities. The subadvisor may also determine in light of market or economic conditions that the normal percentage limitations should be exceeded to protect the fund or achieve its investment objective.

Within the prescribed percentage allocation, the subadvisor selects the percentage level to be maintained in specific underlying funds and in futures contracts on equity or fixed-income markets. These allocations may be changed at any time by the subadvisor.

Fund summary

The fund may invest in various underlying funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities) and sector holdings such as utilities, science, and technology stocks. Each of these underlying funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in underlying funds that purchase futures contracts on equity markets.

Certain of these underlying funds focus their investment strategy on fixed-income securities, which may include investment grade and below-investment-grade debt securities with maturities that range from short to longer term. The fixed-income underlying funds collectively hold various types of debt instruments such as corporate bonds and mortgage backed, U.S. and foreign government issued, domestic and international securities.

The fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates and related indexes. The fund may use derivatives for hedging and nonhedging purposes including, without limitation, the following purposes:

- To establish a position in the derivatives markets as a method of gaining exposure to a particular security or market;
- To attempt to protect against possible changes in the market value of securities held or to be purchased by the fund or an underlying fund;
- To manage the effective maturity or duration of the securities of the fund or an underlying fund; and
- To facilitate the repatriation of foreign currency and the settlement of purchases of foreign securities.

The fund may invest in other types of investments including exchange-traded notes (ETNs) as described under “Other Permitted Investments of the Fund of Funds.”

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Advance trade estimate risk. The JHVIT Lifestyle Portfolio may seek to mitigate asset transfer risk by adjusting its portfolio based on advance estimates of automatic transfers of Contract value under the Contracts. The John Hancock Issuers have provided the JHVIT Lifestyle Portfolio’s subadvisor with an analytical tool that calculates estimates of automatic transfers based on several factors, including the mathematical process for automatic transfers and market movements before the daily close of trading. The subadvisor may, but is not required to, use the tool to adjust the JHVIT Lifestyle Portfolio’s portfolio with the goal of trading in securities or purchasing shares of underlying funds as close to the market close as possible in order to limit the JHVIT Lifestyle Portfolio’s exposure to cash drag (i.e., holding cash while markets are rising) and adverse overnight market fluctuations. For example, in a rising market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will receive inflows that day (the “Trade Date”), the subadvisor could buy securities or shares of an underlying fund close to or at the closing prices on the Trade Date, as opposed to the following business day, when the actual transfer amount would be known. In a falling market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will experience outflows on Trade Date, the subadvisor could sell securities or shares of an underlying fund close to or at the closing prices on Trade Date, as opposed to the following business day, when the actual transfer amount would be known.

If the subadvisor relies on the analytical tool or its own judgment and places trades in anticipation of purchases and redemptions of JHVIT Lifestyle shares, there can be no assurance that the prices paid by the JHVIT Lifestyle Portfolio will be better than if the JHVIT Lifestyle Portfolio had traded the following business day. The estimated transfer amount may be different from the actual transfer amount for various reasons, including changes in market direction, contract owner behavior and faulty inputs. If the estimated transfer amount is different from the actual transfer amount, the JHVIT Lifestyle Portfolio will buy or sell securities or shares of an underlying fund the following business day to adjust for this difference. For example, if cash flows into the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio could be forced to liquidate positions it had purchased. Conversely, if cash flows out of the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio may be required to repurchase positions it had sold. In addition, purchasing securities or shares of an underlying fund early could cause the JHVIT Lifestyle Portfolio to spend more money than it has available and, in the event of a market decline, such leverage will magnify losses because the decline also affects the securities

Fund summary

purchased with amounts in excess of the JHVIT Lifestyle Portfolio's assets. Due to these various factors, trading on the basis of advance estimates of automatic transfers may cause higher portfolio turnover than that based solely on automatic transfers of Contract value under the Contracts, increase JHVIT Lifestyle Portfolio expenses and adversely affect the performance of the JHVIT Lifestyle Portfolio.

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund's investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Allocation risk. The fund is subject to risks related to conflicts of interest associated with the advisor's ability to determine the fund's strategic asset allocation among general investment categories, which are executed by multiple unaffiliated and/or affiliated subadvisors.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

JHVIT Lifestyle Portfolio asset transfer risk. The Lifestyle Balanced Portfolio (the “JHVIT Lifestyle Portfolio”) is offered in connection with specific guaranteed benefits under variable annuity contracts (the “Contracts”) issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the “John Hancock Issuers”).

The Contracts provide that the John Hancock Issuers can automatically transfer contract value between the JHVIT Lifestyle Portfolio and the Select Bond Trust through a non-discretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and thereby limit the John Hancock Issuers’ exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers’ process will depend on several factors including market movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from the JHVIT Lifestyle Portfolio to the Select Bond Trust when equity markets fall. These asset flows may negatively affect the performance of the JHVIT Lifestyle Portfolio and an underlying fund in which the JHVIT Lifestyle Portfolio invests by increasing the underlying fund’s transaction costs and causing it to purchase or sell securities when it would not normally do so. It could be particularly disadvantageous for the underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolio bears its proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolio.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Target allocation risk. The fund’s risk profile will change due to reallocation or rebalancing of portfolio assets.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF’s shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Fund summary

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

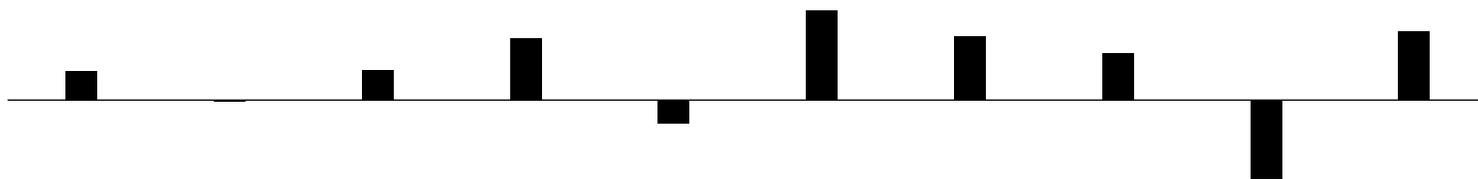
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 35% Russell 3000 Index/15% MSCI EAFE Index/50% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.74	-0.22	5.89	12.16	-4.63	17.56	12.47	9.21	-15.60	13.50



Best quarter:	Q2 2020	12.11%
Worst quarter:	Q1 2020	-10.80%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.74	6.91	5.37
Series II	13.50	6.70	5.15
Series NAV	13.72	6.96	5.41
Morningstar U.S. Moderate Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	16.75	8.84	6.93
35% Russell 3000 Index/15% MSCI EAFE Index/50% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	14.37	7.29	5.77

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2023

David Kobuszewski, CFA

Portfolio Manager, Senior Investment Analyst
Managed fund since 2023

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Lifestyle Conservative Portfolio

Investment objective

To seek a high level of current income with some consideration given to growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.04	0.04	0.04
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.08	0.08	0.08
Acquired fund fees and expenses	0.58 ¹	0.58 ¹	0.58 ¹
Total annual fund operating expenses	0.75²	0.95²	0.70²
Contractual expense reimbursement	-0.04 ³	-0.04 ³	-0.04 ³
Total annual fund operating expenses after expense reimbursements	0.71	0.91	0.66

- ¹ “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- ² The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- ³ The advisor has contractually agreed to reduce its management fee and/or make payment to the fund in an amount equal to the amount by which “Other expenses” of the fund exceed 0.04% of the average daily net assets of the fund. “Other expenses” means all of the expenses of the fund, excluding certain expenses such as advisory fees, taxes, brokerage commissions, interest expense, litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, distribution and service (Rule 12b-1) fees, underlying fund expenses (acquired fund fees), and short dividend expense. The current expense limitation agreement expires on April 30, 2025 unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	73	93	67
3 years	236	299	220
5 years	413	522	386
10 years	927	1,163	867

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 11% of the average value of its portfolio.

Principal investment strategies

The fund, except as otherwise described below, operates as a fund of funds and normally invests approximately 20% of its assets in underlying funds that invest primarily in equity securities or in futures contracts on equity markets (the “Equity Allocation”) and approximately 80% of its assets in underlying funds that invest primarily in fixed-income securities or in futures contracts on fixed-income markets (the “Fixed Income Allocation”). Underlying funds may include exchange-traded funds (“ETFs”) and the fund may invest a significant portion of its assets in ETFs. At the discretion of the subadvisor, the Equity Allocation may also include direct investments in equity securities and the Fixed Income Allocation may also include direct

Fund summary

investments in fixed-income securities. The subadvisor may also determine in light of market or economic conditions that the normal percentage limitations should be exceeded to protect the fund or achieve its investment objective.

Within the prescribed percentage allocation, the subadvisor selects the percentage level to be maintained in specific underlying funds and in futures contracts on equity or fixed-income markets. These allocations may be changed at any time by the subadvisor.

The fund may invest in various underlying funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities) and sector holdings such as utilities, science, and technology stocks. Each of these underlying funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in underlying funds that purchase futures contracts on equity markets.

Certain of these underlying funds focus their investment strategy on fixed-income securities, which may include investment grade and below investment grade debt securities with maturities that range from short to longer term. The fixed-income underlying funds collectively hold various types of debt instruments such as corporate bonds and mortgage backed, U.S. and foreign government issued, domestic and international securities.

The fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates and related indexes. The fund may use derivatives for hedging and nonhedging purposes including, without limitation, the following purposes:

- To establish a position in the derivatives markets as a method of gaining exposure to a particular security or market;
- To attempt to protect against possible changes in the market value of securities held or to be purchased by the fund or an underlying fund;
- To manage the effective maturity or duration of the securities of the fund or an underlying fund; and
- To facilitate the repatriation of foreign currency and the settlement of purchases of foreign securities.

The fund may invest in other types of investments including exchange-traded notes (ETNs) as described under “Other Permitted Investments of the Fund of Funds.”

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in fixed-income securities than JHVIT Lifestyle Portfolios with greater target allocations to underlying funds that invest primarily in equity securities, fixed-income security risks are more prevalent in this fund than in other JHVIT Lifestyle Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Advance trade estimate risk. The JHVIT Lifestyle Portfolio may seek to mitigate asset transfer risk by adjusting its portfolio based on advance estimates of automatic transfers of Contract value under the Contracts. The John Hancock Issuers have provided the JHVIT Lifestyle Portfolio’s subadvisor with an analytical tool that calculates estimates of automatic transfers based on several factors, including the mathematical process for automatic transfers and market movements before the daily close of trading. The subadvisor may, but is not required to, use the tool to adjust the JHVIT Lifestyle Portfolio’s portfolio with the goal of trading in securities or purchasing shares of underlying funds as close to the market close as possible in order to limit the JHVIT Lifestyle Portfolio’s exposure to cash drag (i.e., holding cash while markets are rising) and adverse overnight market fluctuations. For example, in a rising market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will receive inflows that day (the “Trade Date”), the subadvisor could buy securities or shares of an underlying fund close to or at the closing prices on the Trade Date, as opposed to the following business day, when the actual transfer amount would be known. In a falling market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will experience outflows on Trade Date, the subadvisor could sell securities or shares of an underlying fund close to or at the closing prices on Trade Date, as opposed to the following business day, when the actual transfer amount would be known.

If the subadvisor relies on the analytical tool or its own judgment and places trades in anticipation of purchases and redemptions of JHVIT Lifestyle shares, there can be no assurance that the prices paid by the JHVIT Lifestyle Portfolio will be better than if the JHVIT Lifestyle Portfolio had traded the

Fund summary

following business day. The estimated transfer amount may be different from the actual transfer amount for various reasons, including changes in market direction, contract owner behavior and faulty inputs. If the estimated transfer amount is different from the actual transfer amount, the JHVIT Lifestyle Portfolio will buy or sell securities or shares of an underlying fund the following business day to adjust for this difference. For example, if cash flows into the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio could be forced to liquidate positions it had purchased. Conversely, if cash flows out of the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio may be required to repurchase positions it had sold. In addition, purchasing securities or shares of an underlying fund early could cause the JHVIT Lifestyle Portfolio to spend more money than it has available and, in the event of a market decline, such leverage will magnify losses because the decline also affects the securities purchased with amounts in excess of the JHVIT Lifestyle Portfolio's assets. Due to these various factors, trading on the basis of advance estimates of automatic transfers may cause higher portfolio turnover than that based solely on automatic transfers of Contract value under the Contracts, increase JHVIT Lifestyle Portfolio expenses and adversely affect the performance of the JHVIT Lifestyle Portfolio.

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund's investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Allocation risk. The fund is subject to risks related to conflicts of interest associated with the advisor's ability to determine the fund's strategic asset allocation among general investment categories, which are executed by multiple unaffiliated and/or affiliated subadvisors.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

JHVIT Lifestyle Portfolio asset transfer risk. The Lifestyle Conservative Portfolio (the "JHVIT Lifestyle Portfolio") is offered in connection with specific guaranteed benefits under variable annuity contracts (the "Contracts") issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the "John Hancock Issuers").

The Contracts provide that the John Hancock Issuers can automatically transfer contract value between the JHVIT Lifestyle Portfolio and the Select Bond Trust through a non-discretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and thereby limit the John Hancock Issuers' exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers' process will depend on several factors including market movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from the JHVIT Lifestyle Portfolio to the Select Bond Trust when equity markets fall. These asset flows may negatively affect the performance of the JHVIT Lifestyle Portfolio and an underlying fund in which the JHVIT Lifestyle Portfolio invests by increasing the underlying fund's transaction costs and causing it to purchase or sell securities when it would not normally do so. It could be particularly disadvantageous for the underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolio bears its proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolio.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

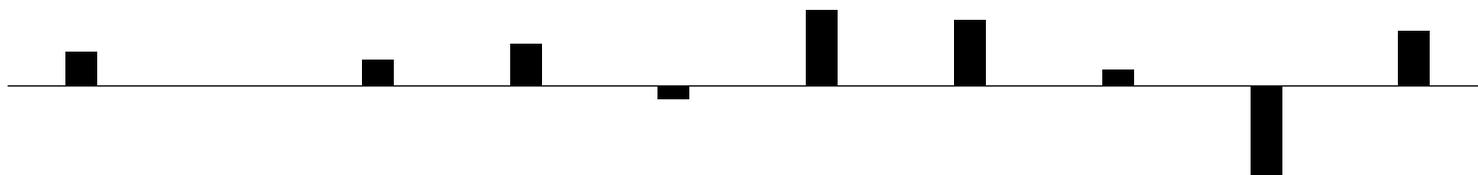
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 14% Russell 3000 Index/6% MSCI EAFE Index/80% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.41	-0.03	4.17	6.74	-2.17	12.22	10.53	2.68	-14.71	8.90



Best quarter:	Q2 2020	8.06%
Worst quarter:	Q2 2022	-7.54%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	9.12	3.62	3.29
Series II	8.90	3.42	3.09
Series NAV	9.18	3.68	3.34
Morningstar U.S. Conservative Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	10.07	4.03	3.71
14% Russell 3000 Index/6% MSCI EAFE Index/80% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	9.01	3.62	3.44

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity

Managed fund since 2023

David Kobuszewski, CFA

Portfolio Manager, Senior Investment Analyst

Managed fund since 2023

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation

Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager

Managed fund since 2013

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Lifestyle Growth Portfolio

Investment objective

To seek long-term growth of capital. Current income is also a consideration.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.04	0.04	0.04
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.03	0.03	0.03
Acquired fund fees and expenses	0.55 ¹	0.55 ¹	0.55 ¹
Total annual fund operating expenses	0.67²	0.87²	0.62²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	68	89	63
3 years	214	278	199
5 years	373	482	346
10 years	835	1,073	774

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 6% of the average value of its portfolio.

Principal investment strategies

The fund, except as otherwise described below, operates as a fund of funds and normally invests approximately 70% of its assets in underlying funds that invest primarily in equity securities or in futures contracts on equity markets (the “Equity Allocation”) and approximately 30% of its assets in underlying funds that invest primarily in fixed-income securities or in futures contracts on fixed-income markets (the “Fixed Income Allocation”). Underlying funds may include exchange traded funds (“ETFs”) and the fund may invest a significant portion of its assets in ETFs. At the discretion of the subadvisor, the Equity Allocation may also include direct investments in equity securities and the Fixed Income Allocation may also include direct investments in fixed-income securities. The subadvisor may also determine in light of market or economic conditions that the normal percentage limitations should be exceeded to protect the fund or achieve its investment objective.

Within the prescribed percentage allocation, the subadvisor selects the percentage level to be maintained in specific underlying funds and in futures contracts on equity or fixed-income markets. These allocations may be changed at any time by the subadvisor.

Fund summary

The fund may invest in various underlying funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities) and sector holdings such as utilities, science, and technology stocks. Each of these underlying funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in underlying funds that purchase futures contracts on equity markets.

Certain of these underlying funds focus their investment strategy on fixed-income securities, which may include investment grade and below investment grade debt securities with maturities that range from short to longer term. The fixed-income underlying funds collectively hold various types of debt instruments such as corporate bonds and mortgage backed, U.S. and foreign government issued, domestic and international securities.

The fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates and related indexes. The fund may use derivatives for hedging and nonhedging purposes including, without limitation, the following purposes:

- To establish a position in the derivatives markets as a method of gaining exposure to a particular security or market;
- To attempt to protect against possible changes in the market value of securities held or to be purchased by the fund or an underlying fund;
- To manage the effective maturity or duration of the securities of the fund or an underlying fund; and
- To facilitate the repatriation of foreign currency and the settlement of purchases of foreign securities.

The fund may invest in other types of investments including exchange-traded notes (ETNs) as described under “Other Permitted Investments of the Fund of Funds.”

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in equity securities than JHVIT Lifestyle Portfolios with greater target allocations to underlying funds that invest primarily in fixed-income securities, equity security risks are more prevalent in this fund than in other JHVIT Lifestyle Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Advance trade estimate risk. The JHVIT Lifestyle Portfolio may seek to mitigate asset transfer risk by adjusting its portfolio based on advance estimates of automatic transfers of Contract value under the Contracts. The John Hancock Issuers have provided the JHVIT Lifestyle Portfolio’s subadvisor with an analytical tool that calculates estimates of automatic transfers based on several factors, including the mathematical process for automatic transfers and market movements before the daily close of trading. The subadvisor may, but is not required to, use the tool to adjust the JHVIT Lifestyle Portfolio’s portfolio with the goal of trading in securities or purchasing shares of underlying funds as close to the market close as possible in order to limit the JHVIT Lifestyle Portfolio’s exposure to cash drag (i.e., holding cash while markets are rising) and adverse overnight market fluctuations. For example, in a rising market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will receive inflows that day (the “Trade Date”), the subadvisor could buy securities or shares of an underlying fund close to or at the closing prices on the Trade Date, as opposed to the following business day, when the actual transfer amount would be known. In a falling market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will experience outflows on Trade Date, the subadvisor could sell securities or shares of an underlying fund close to or at the closing prices on Trade Date, as opposed to the following business day, when the actual transfer amount would be known.

If the subadvisor relies on the analytical tool or its own judgment and places trades in anticipation of purchases and redemptions of JHVIT Lifestyle shares, there can be no assurance that the prices paid by the JHVIT Lifestyle Portfolio will be better than if the JHVIT Lifestyle Portfolio had traded the following business day. The estimated transfer amount may be different from the actual transfer amount for various reasons, including changes in market direction, contract owner behavior and faulty inputs. If the estimated transfer amount is different from the actual transfer amount, the JHVIT Lifestyle Portfolio will buy or sell securities or shares of an underlying fund the following business day to adjust for this difference. For example, if cash flows into the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio could be forced to liquidate positions it had purchased. Conversely, if cash flows out of the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio may be required to repurchase

Fund summary

positions it had sold. In addition, purchasing securities or shares of an underlying fund early could cause the JHVIT Lifestyle Portfolio to spend more money than it has available and, in the event of a market decline, such leverage will magnify losses because the decline also affects the securities purchased with amounts in excess of the JHVIT Lifestyle Portfolio's assets. Due to these various factors, trading on the basis of advance estimates of automatic transfers may cause higher portfolio turnover than that based solely on automatic transfers of Contract value under the Contracts, increase JHVIT Lifestyle Portfolio expenses and adversely affect the performance of the JHVIT Lifestyle Portfolio.

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund's investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Allocation risk. The fund is subject to risks related to conflicts of interest associated with the advisor's ability to determine the fund's strategic asset allocation among general investment categories, which are executed by multiple unaffiliated and/or affiliated subadvisors.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could

Fund summary

become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

JHVIT Lifestyle Portfolio asset transfer risk. The Lifestyle Growth Portfolio (the “JHVIT Lifestyle Portfolio”) is offered in connection with specific guaranteed benefits under variable annuity contracts (the “Contracts”) issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the “John Hancock Issuers”).

The Contracts provide that the John Hancock Issuers can automatically transfer contract value between the JHVIT Lifestyle Portfolio and the Select Bond Trust through a non-discretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and thereby limit the John Hancock Issuers’ exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers’ process will depend on several factors including market movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from the JHVIT Lifestyle Portfolio to the Select Bond Trust when equity markets fall. These asset flows may negatively affect the performance of the JHVIT Lifestyle Portfolio and an underlying fund in which the JHVIT Lifestyle Portfolio invests by increasing the underlying fund’s transaction costs and causing it to purchase or sell securities when it would not normally do so. It could be particularly disadvantageous for the underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolio bears its proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolio.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Target allocation risk. The fund’s risk profile will change due to reallocation or rebalancing of portfolio assets.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF’s shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fund summary

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

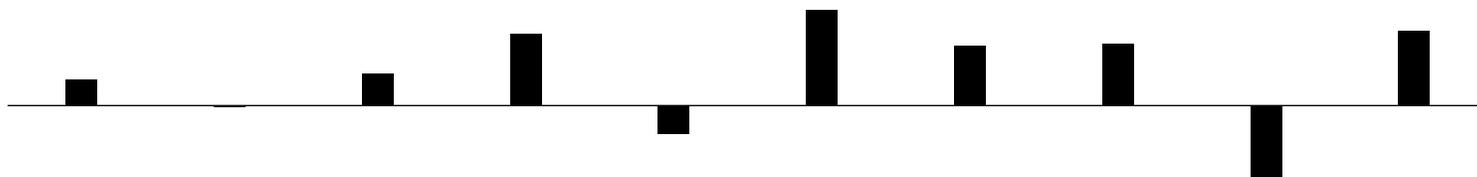
The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 49% Russell 3000 Index/21% MSCI EAFE Index/30% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its

Fund summary

underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.88	-0.25	7.02	15.90	-6.31	21.20	13.37	13.84	-16.24	16.67



Best quarter:	Q2 2020	14.93%
Worst quarter:	Q1 2020	-15.41%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	17.00	9.09	6.72
Series II	16.67	8.86	6.49
Series NAV	16.97	9.14	6.77
Morningstar U.S. Moderately Aggressive Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	19.46	10.61	7.97
49% Russell 3000 Index/21% MSCI EAFE Index/30% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	18.03	9.66	7.25

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2023

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

David Kobuszewski, CFA

Portfolio Manager, Senior Investment Analyst
Managed fund since 2023

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan.

Fund summary

Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Lifestyle Moderate Portfolio

Investment objective

To seek a balance between a high level of current income and growth of capital, with a greater emphasis on income.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.04	0.04	0.04
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Acquired fund fees and expenses	0.57 ¹	0.57 ¹	0.57 ¹
Total annual fund operating expenses	0.72²	0.92²	0.67²
Contractual expense reimbursement	-0.02 ³	-0.02 ³	-0.02 ³
Total annual fund operating expenses after expense reimbursements	0.70	0.90	0.65

- ¹ “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- ² The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- ³ The advisor has contractually agreed to reduce its management fee and/or make payment to the fund in an amount equal to the amount by which “Other expenses” of the fund exceed 0.04% of the average daily net assets of the fund. “Other expenses” means all of the expenses of the fund, excluding certain expenses such as advisory fees, taxes, brokerage commissions, interest expense, litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, distribution and service (Rule 12b-1) fees, underlying fund expenses (acquired fund fees), and short dividend expense. The current expense limitation agreement expires on April 30, 2025 unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	72	92	66
3 years	228	291	212
5 years	399	507	371
10 years	893	1,129	833

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 9% of the average value of its portfolio.

Principal investment strategies

The fund, except as otherwise described below, operates as a fund of funds and normally invests approximately 40% of its assets in underlying funds that invest primarily in equity securities or in futures contracts on equity markets (the “Equity Allocation”) and approximately 60% of its assets in underlying funds that invest primarily in fixed-income securities or in futures contracts on fixed-income markets (the “Fixed Income Allocation”). Underlying funds may include exchange traded funds (“ETFs”) and the fund may invest a significant portion of its assets in ETFs. At the discretion of the subadvisor, the Equity Allocation may also include direct investments in equity securities and the Fixed Income Allocation may also include direct

Fund summary

investments in fixed-income securities. The subadvisor may also determine in light of market or economic conditions that the normal percentage limitations should be exceeded to protect the fund or achieve its investment objective.

Within the prescribed percentage allocation, the subadvisor selects the percentage level to be maintained in specific underlying funds and in futures contracts on equity or fixed-income markets. These allocations may be changed at any time by the subadvisor.

The fund may invest in various underlying funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities) and sector holdings such as utilities, science, and technology stocks. Each of these underlying funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in underlying funds that purchase futures contracts on equity markets.

Certain of these underlying funds focus their investment strategy on fixed-income securities, which may include investment grade and below investment grade debt securities with maturities that range from short to longer term. The fixed-income underlying funds collectively hold various types of debt instruments such as corporate bonds and mortgage backed, U.S. and foreign government issued, domestic and international securities.

The fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates and related indexes. The fund may use derivatives for hedging and nonhedging purposes including, without limitation, the following purposes:

- To establish a position in the derivatives markets as a method of gaining exposure to a particular security or market;
- To attempt to protect against possible changes in the market value of securities held or to be purchased by the fund or an underlying fund;
- To manage the effective maturity or duration of the securities of the fund or an underlying fund; and
- To facilitate the repatriation of foreign currency and the settlement of purchases of foreign securities.

The fund may invest in other types of investments including exchange-traded notes (ETNs) as described under “Other Permitted Investments of the Fund of Funds.”

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in equity securities than JHVIT Lifestyle Portfolios with greater target allocations to underlying funds that invest primarily in fixed-income securities, equity security risks are more prevalent in this fund than in other JHVIT Lifestyle Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Advance trade estimate risk. The JHVIT Lifestyle Portfolio may seek to mitigate asset transfer risk by adjusting its portfolio based on advance estimates of automatic transfers of Contract value under the Contracts. The John Hancock Issuers have provided the JHVIT Lifestyle Portfolio’s subadvisor with an analytical tool that calculates estimates of automatic transfers based on several factors, including the mathematical process for automatic transfers and market movements before the daily close of trading. The subadvisor may, but is not required to, use the tool to adjust the JHVIT Lifestyle Portfolio’s portfolio with the goal of trading in securities or purchasing shares of underlying funds as close to the market close as possible in order to limit the JHVIT Lifestyle Portfolio’s exposure to cash drag (i.e., holding cash while markets are rising) and adverse overnight market fluctuations. For example, in a rising market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will receive inflows that day (the “Trade Date”), the subadvisor could buy securities or shares of an underlying fund close to or at the closing prices on the Trade Date, as opposed to the following business day, when the actual transfer amount would be known. In a falling market, if the analytical tool suggests that the JHVIT Lifestyle Portfolio will experience outflows on Trade Date, the subadvisor could sell securities or shares of an underlying fund close to or at the closing prices on Trade Date, as opposed to the following business day, when the actual transfer amount would be known.

If the subadvisor relies on the analytical tool or its own judgment and places trades in anticipation of purchases and redemptions of JHVIT Lifestyle shares, there can be no assurance that the prices paid by the JHVIT Lifestyle Portfolio will be better than if the JHVIT Lifestyle Portfolio had traded the

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following business day. The estimated transfer amount may be different from the actual transfer amount for various reasons, including changes in market direction, contract owner behavior and faulty inputs. If the estimated transfer amount is different from the actual transfer amount, the JHVIT Lifestyle Portfolio will buy or sell securities or shares of an underlying fund the following business day to adjust for this difference. For example, if cash flows into the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio could be forced to liquidate positions it had purchased. Conversely, if cash flows out of the JHVIT Lifestyle Portfolio are less than estimated, the JHVIT Lifestyle Portfolio may be required to repurchase positions it had sold. In addition, purchasing securities or shares of an underlying fund early could cause the JHVIT Lifestyle Portfolio to spend more money than it has available and, in the event of a market decline, such leverage will magnify losses because the decline also affects the securities purchased with amounts in excess of the JHVIT Lifestyle Portfolio's assets. Due to these various factors, trading on the basis of advance estimates of automatic transfers may cause higher portfolio turnover than that based solely on automatic transfers of Contract value under the Contracts, increase JHVIT Lifestyle Portfolio expenses and adversely affect the performance of the JHVIT Lifestyle Portfolio.

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund's investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Allocation risk. The fund is subject to risks related to conflicts of interest associated with the advisor's ability to determine the fund's strategic asset allocation among general investment categories, which are executed by multiple unaffiliated and/or affiliated subadvisors.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

JHVIT Lifestyle Portfolio asset transfer risk. The Lifestyle Moderate Portfolio (the "JHVIT Lifestyle Portfolio") is offered in connection with specific guaranteed benefits under variable annuity contracts (the "Contracts") issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the "John Hancock Issuers").

The Contracts provide that the John Hancock Issuers can automatically transfer contract value between the JHVIT Lifestyle Portfolio and the Select Bond Trust through a non-discretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and thereby limit the John Hancock Issuers' exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers' process will depend on several factors including market movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from the JHVIT Lifestyle Portfolio to the Select Bond Trust when equity markets fall. These asset flows may negatively affect the performance of the JHVIT Lifestyle Portfolio and an underlying fund in which the JHVIT Lifestyle Portfolio invests by increasing the underlying fund's transaction costs and causing it to purchase or sell securities when it would not normally do so. It could be particularly disadvantageous for the underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolio bears its proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolio.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

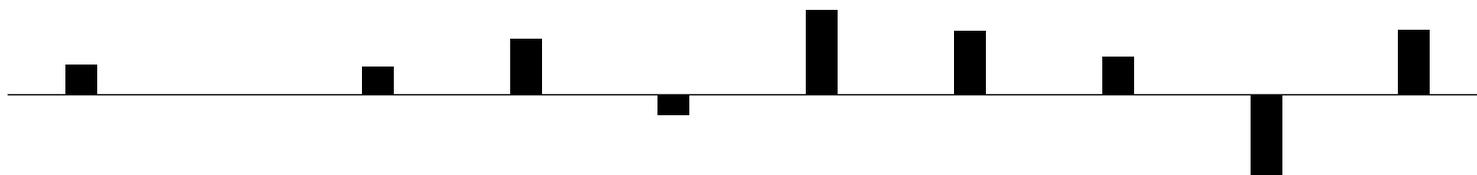
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 28% Russell 3000 Index/12% MSCI EAFE Index/60% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series II

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.61	-0.10	5.28	10.28	-3.77	15.72	11.87	7.03	-15.34	11.91



Best quarter:	Q2 2020	10.81%
Worst quarter:	Q2 2022	-9.58%

Average annual total returns (%)—as of 12/31/2023	1 year	5 year	10 year
Series I	12.15	5.81	4.67
Series II	11.91	5.59	4.46
Series NAV	12.21	5.86	4.73
Morningstar U.S. Moderately Conservative Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	13.04	6.12	5.09
28% Russell 3000 Index/12% MSCI EAFE Index/60% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	12.57	6.08	5.01

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity

Managed fund since 2023

David Kobuszewski, CFA

Portfolio Manager, Senior Investment Analyst

Managed fund since 2023

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation

Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager

Managed fund since 2013

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Managed Volatility Balanced Portfolio

Investment objective

To seek growth of capital and current income while seeking to both manage the volatility of return and limit the magnitude of portfolio losses.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.18	0.18	0.18
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.03	0.03	0.03
Acquired fund fees and expenses	0.55 ¹	0.55 ¹	0.55 ¹
Total annual fund operating expenses	0.81²	1.01²	0.76²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	83	103	78
3 years	259	322	243
5 years	450	558	422
10 years	1,002	1,236	942

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 6% of the average value of its portfolio.

Principal investment strategies

The Managed Volatility Balanced Portfolio, except as otherwise described below, normally invests primarily in underlying funds that invest primarily in equity securities (“Equity Funds”) and underlying funds that invest primarily in fixed-income securities (“Fixed-Income Funds”). The fund may also use certain risk management techniques to seek to manage the volatility of returns (i.e. standard deviation) and limit the magnitude of portfolio losses.

As described below, the fund may directly hold derivative instruments and collateral for these derivative instruments. The fund’s economic exposure to equities and fixed-income securities may fluctuate due to its risk management strategy as noted below. The fund may employ a risk management strategy to attempt to manage the volatility of returns and limit the magnitude of portfolio losses. The risk management strategy may cause the fund’s economic exposure to equity securities, fixed-income securities and cash and cash equivalents (either directly or through investment in underlying funds or derivatives) to fluctuate, and during extreme market volatility, the fund’s economic exposure to either equity or fixed-income securities could be reduced to 0% and its economic exposure to cash and cash equivalents could increase to 100%. The subadvisor normally will seek to limit the fund’s exposure to equity securities (either directly or through investment in underlying funds or derivatives) to no more than 55% and normally will seek to

Fund summary

reduce any equity exposure in excess of this amount as soon as practicable. However, the subadvisor may determine in light of market or economic conditions that the limit should be exceeded to achieve the fund's investment objective.

The fund seeks long term growth of capital while attempting to manage the volatility of returns and limit the magnitude of portfolio losses. The fund seeks to limit the volatility of returns to a range of 8.25% to 10.25% (as measured by annualized standard deviation of the fund's returns). However, during periods of prolonged low market volatility the actual volatility experienced by the fund may fall below the range due to maximum limits on equity and fixed-income exposures.

Volatility is a measure of the magnitude of up and down fluctuations in the fund's NAV over time as measured by the annualized standard deviation of its returns. Higher volatility generally indicates higher risk. The more a fund's returns vary from the fund's average return, the more volatile the fund and the higher the standard deviation. The purpose of managing the volatility of returns is to attempt to limit exposure to more volatile asset classes, including both equities and fixed-income asset classes, during periods of high volatility and protect the fund from losses during market declines. The fund also seeks to limit the magnitude of portfolio losses in order to limit exposure during market declines. There can be no assurance that the risk management strategy will be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

In seeking to manage the volatility of returns and limit the magnitude of portfolio losses, the fund may employ certain risk management techniques using derivative instruments and may reallocate assets between the underlying Equity and Fixed-Income Funds. These derivatives may be used to increase or decrease the fund's net equity exposure and will typically consist of stock index futures, but may also include stock index options, options on stock index futures, and stock index swaps. The fund may also employ risk management techniques using derivatives that may increase or decrease the fund's exposure to certain types of fixed-income securities. These instruments may include government bond futures, swaps, and credit default swaps. For more information about these derivative instruments in which the fund may invest, please see the "Hedging And Other Strategic Transactions" risk section in the Statement of Additional Information. Fund assets employed for its risk management strategy include not only derivative instruments but also fixed-income instruments. Because equity and fixed-income derivative instruments may be purchased with a fraction of the assets that would be needed to purchase the securities directly, the remainder of the assets used for the risk management strategy will be invested in a variety of fixed-income instruments. The fund may be required to hold cash or other liquid assets and post these assets with a broker as collateral to cover its obligation under the futures contracts. The fund's risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could underperform funds that do not use a risk management strategy.

The use of derivatives may be combined with asset allocation techniques. The timing and extent of these techniques will depend on several factors, including market movements. In general, when equity markets are more volatile or are declining, assets may be reallocated to Fixed-Income Funds, cash and/or cash equivalents, and short positions in equity derivative instruments. When equity markets rise, or if volatility is lower, assets may be reallocated to Equity Funds and stock index futures, options, and swaps. Similarly, if fixed-income markets are volatile or are declining, assets may be reallocated to Equity Funds, cash and cash equivalents, and short positions in fixed-income derivative instruments. Even in periods of low volatility, the subadvisor may continue to use risk management techniques to protect against sudden market movements, preserve gains after favorable market conditions, and reduce losses in adverse market conditions. Due to the leverage provided by derivatives, the notional value of the fund's derivative positions could exceed 100% of the fund's assets.

In determining when to employ risk management techniques and/or reallocate assets between Equity Funds and Fixed-Income Funds, the subadvisor may use quantitative models that use historical factors such as market movements, and historical changes in the NAV of the fund to make this determination.

The subadvisor selects the percentage level to be maintained in specific underlying Equity Funds and Fixed-Income Funds, and cash and cash equivalents and may from time to time change the allocation in specific underlying funds or rebalance the underlying funds. From time to time, a significant portion of the fund's underlying fixed income assets may be managed by an affiliated subadvisor. To maintain a target allocation in the underlying funds, daily cash flows for the fund may be directed to its underlying funds that most deviate from target.

The fund may invest in various Equity Funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities), and sector holdings such as utilities, science, and technology stocks. Each of these Equity Funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in Fixed-Income Funds that as a group hold a wide range of fixed-income securities including investment grade and below-investment-grade debt securities with maturities that range from short to longer term. The Fixed-Income Funds collectively hold various types of debt instruments, such as corporate bonds and mortgage backed, government issued, domestic and international securities. Equity Funds and Fixed-Income Funds may include funds that employ a passive investment style (i.e., index funds and exchange-traded funds (ETFs)) and at times most of the fund's assets may be invested in index funds.

The fund may also invest in the securities of other investment companies including ETFs and may invest directly in other types of investments, such as equity and fixed-income securities including U.S. government securities, closed-end funds, exchange-traded notes, and partnerships. See "Other

Fund summary

Permitted Investments by the Funds of Funds.” The fund may also engage in short selling. The fund may engage in active and frequent trading of portfolio securities and other instruments to achieve its primary investment strategies.

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

Use of Risk Management and Other Strategic Transactions. In addition to the risk management techniques described above, the fund is authorized to use other investment strategies referred to under “Hedging And Other Strategic Transactions” risk section including, without limitation, investing in foreign currency forward contracts, futures contracts including stock index and foreign currency futures, swaps including interest rate swaps, stock index swaps and credit default swaps and options including stock index options and options on stock index futures, among others.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund’s investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Cash collateral risk. Subject to the requirements of Rule 18f-4, to the extent a fund maintains cash collateral required to cover its obligations, such collateral holdings may have the effect of reducing overall portfolio returns. In addition, because such collateral positions cannot be eliminated or reduced unless the corresponding derivative obligation is eliminated or reduced, a large derivative position may materially limit the subadvisor’s flexibility in managing the fund.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Hedging risk. There may be imperfect or even negative correlation between the price of the futures contracts and the price of the underlying securities. For example, futures contracts may not provide an effective hedge because changes in futures contract prices may not track those of the underlying securities or indexes they are intended to hedge. In addition, there are significant differences between the securities and futures markets that could result in an imperfect correlation between the markets, causing a given hedge not to achieve its objectives. The degree of imperfection of correlation depends on circumstances such as variations in speculative market demand for futures, including technical influences in futures trading, and differences between the financial instruments being hedged and the instruments underlying the standard contracts available for trading. A decision as to whether, when and how to hedge involves the exercise of skill and judgment, and even a well-conceived hedge may be unsuccessful to some degree because of market behavior or unexpected interest rate trends. In addition, the fund's investment in exchange-traded futures as a result of the risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could cause the fund to underperform funds that do not use a risk management strategy.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Leveraging risk. Using derivatives may result in a leveraged portfolio. Leveraging long exposures increases a fund's losses when the value of its investments declines. Some derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative models may not produce the desired results. In determining when to employ risk management techniques and/or reallocate exposure among equity, fixed-income and cash, the subadvisor uses quantitative models that use historical market data. However, future market conditions may not be consistent with historical periods, and the historical data may not, therefore, prove to be an accurate predictor of future volatility or losses. The model also may not measure or analyze such data effectively. Thus, the quantitative model may not produce the desired results and may not accurately forecast either future volatility or future large market declines, and this would affect the ability of a fund to be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

Risk management strategies may not be successful, may limit upside potential or may permit or result in losses. The purposes of the risk management strategies are to attempt to limit the fund's total risk exposure during periods of high market volatility and reduce the fund's losses during market declines; however, there is no assurance that these strategies will be successful. These risk management strategies could limit the upside participation of the fund in rising equity markets during periods of high volatility. In instances of equity market declines followed by rising equity markets and significant levels of market volatility, these risk management strategies may detract from fund performance and at times prevent the fund from fully recovering losses by limiting the levels of exposure to equity markets. Due to the use of historical data in the models used in the risk management strategy, there can be delays, especially during volatile markets, in fully implementing the strategy when markets are declining causing the fund to experience greater losses than if the strategy had been fully implemented. There can also be delays, especially during volatile markets, in removing hedges designed to limit losses during declining markets when markets are rising strongly causing the fund to not fully participate in the rising market. The application of risk management techniques can be complex, and misjudgments in implementation may result in under- or over-allocations to equity, fixed-income and/or cash and cash equivalent exposure causing the fund to underperform or experience losses. Also, futures contracts may be subject to exchange-imposed daily price fluctuation limits, and trading may be halted if a contract's price moves above or below the limit on a given day. As a result, the fund may not be able to promptly liquidate unfavorable futures positions and could be required to hold such positions until the delivery date, regardless of changes in its value.

Since the characteristics of many securities change as markets change or time passes, the success of risk management techniques will be subject to the portfolio managers' ability to execute the strategy. Moreover, risk management strategies may increase portfolio transaction costs, which could cause or increase losses or reduce gains. Any one or more of these factors may prevent the fund from achieving the intended risk management goals or could cause the fund to underperform or experience losses (some of which may be sudden) or volatility for any particular period.

Short positions risk. In taking a short position, a fund seeks to profit from an anticipated decline in the value of a security or index of securities. If the security or index instead appreciates in value, the fund will incur losses by having to pay to close out its position at a higher price than the price it received to open that position. Unlike losses from declines in long positions in stocks or other securities (which may not exceed the original amount invested), the losses a fund may incur to close out a short position if the underlying security or index increases in value are potentially unlimited.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Swaps risk. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Use of index futures risk. While the use of index futures may involve a small investment of cash, the losses to a fund could exceed the amount invested, and in certain cases even the total value of the fund's assets, due to the embedded leverage provided by the derivative. Index futures may also result in a loss to the fund if the counterparty to the transaction does not perform.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact

Fund summary

performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, and options. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Fund summary

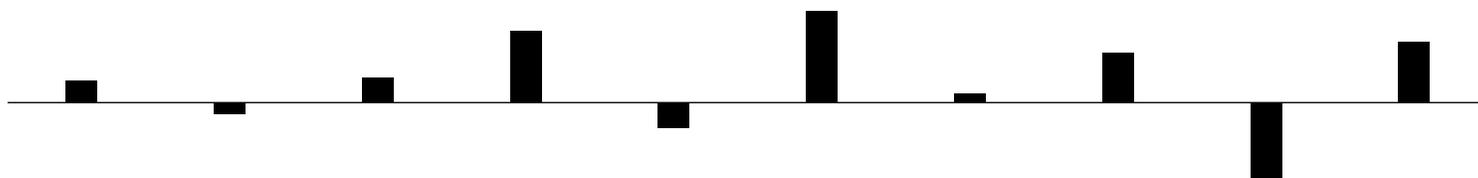
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 35% Russell 3000 Index/15% MSCI EAFE Index/50% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

On March 3, 2014, the fund changed its investment objective and principal investment strategies. The performance information below for the period prior to this date does not reflect these changes. Under the fund's prior investment objective and principal investment strategies, the fund normally invested approximately 50% of its assets in underlying funds that invest primarily in equity securities and approximately 50% of its assets in underlying funds that invest primarily in fixed-income securities and did not use certain risk management techniques to seek to manage the volatility of returns (i.e. standard deviation) and limit the magnitude of portfolio losses.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
4.29	-2.25	4.79	14.13	-4.89	17.92	1.81	9.76	-15.08	11.99



Best quarter:	Q4 2023	9.47%
Worst quarter:	Q1 2020	-13.22%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	11.99	4.62	3.81
Series II	11.79	4.42	3.61
Series NAV	12.00	4.67	3.86
Morningstar U.S. Moderate Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	16.75	8.84	6.93
35% Russell 3000 Index/15% MSCI EAFE Index/50% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	14.37	7.29	5.77

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2020

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Jeffrey Wu

Portfolio Manager and Senior Investment Analyst
Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Managed Volatility Conservative Portfolio

Investment objective

To seek current income and growth of capital, while seeking to both manage the volatility of return and limit the magnitude of portfolio losses.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.17	0.17	0.17
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Acquired fund fees and expenses	0.53 ¹	0.53 ¹	0.53 ¹
Total annual fund operating expenses	0.80²	1.00²	0.75²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	82	102	77
3 years	255	318	240
5 years	444	552	417
10 years	990	1,225	930

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 5% of the average value of its portfolio.

Principal investment strategies

The Managed Volatility Conservative Portfolio, except as otherwise described below, normally invests primarily in underlying funds that invest primarily in equity securities (“Equity Funds”) and underlying funds that invest primarily in fixed-income securities (“Fixed-Income Funds”). The fund may also use certain risk management techniques to seek to manage the volatility of returns (i.e., standard deviation) and limit the magnitude of portfolio losses.

As described below, the fund may directly hold derivative instruments and collateral for these derivative instruments. The fund’s economic exposure to equities and fixed-income securities may fluctuate due to its risk management strategy as noted below. The fund may employ a risk management strategy to attempt to manage the volatility of returns and limit the magnitude of portfolio losses. The risk management strategy may cause the fund’s economic exposure to equity securities, fixed-income securities and cash and cash equivalents (either directly or through investment in underlying funds or derivatives) to fluctuate, and during extreme market volatility, the fund’s economic exposure to either equity or fixed-income securities could be reduced to 0% and its economic exposure to cash and cash equivalents could increase to 100%. The subadvisor normally will seek to limit the fund’s exposure to equity securities (either directly or through investment in underlying funds or derivatives) to no more than 22% and normally will seek to

Fund summary

reduce any equity exposure in excess of this amount as soon as practicable. However, the subadvisor may determine in light of market or economic conditions that the limit should be exceeded to achieve the fund's investment objective.

The fund seeks long term growth of capital while attempting to manage the volatility of returns and limit the magnitude of portfolio losses. The fund seeks to limit the volatility of returns to a range of 5.5% to 6.5% (as measured by annualized standard deviation of the fund's returns). However, during periods of prolonged low market volatility the actual volatility experienced by the fund may fall below the range due to maximum limits on equity and fixed-income exposures.

Volatility is a measure of the magnitude of up and down fluctuations in the fund's NAV over time as measured by the annualized standard deviation of its returns. Higher volatility generally indicates higher risk. The more a fund's returns vary from the fund's average return, the more volatile the fund and the higher the standard deviation. The purpose of managing the volatility of returns is to attempt to limit exposure to more volatile asset classes, including both equities and fixed-income asset classes, during periods of high volatility and protect the fund from losses during market declines. The fund also seeks to limit the magnitude of portfolio losses in order to limit exposure during market declines. There can be no assurance that the risk management strategy will be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

In seeking to manage the volatility of returns and limit the magnitude of portfolio losses, the fund may employ certain risk management techniques using derivative instruments and may reallocate assets between the underlying Equity and Fixed-Income Funds. These derivatives may be used to increase or decrease the fund's net equity exposure and will typically consist of stock index futures, but may also include stock index options, options on stock index futures, and stock index swaps. The fund may also employ risk management techniques using derivatives that may increase or decrease the fund's exposure to certain types of fixed-income securities. These instruments may include government bond futures, swaps, and credit default swaps. For more information about these derivative instruments in which the fund may invest, please see the "Hedging And Other Strategic Transactions" risk section in the Statement of Additional Information. Fund assets employed for its risk management strategy include not only derivative instruments but also fixed-income instruments. Because equity and fixed-income derivative instruments may be purchased with a fraction of the assets that would be needed to purchase the securities directly, the remainder of the assets used for the risk management strategy will be invested in a variety of fixed-income instruments. The fund may be required to hold cash or other liquid assets and post these assets with a broker as collateral to cover its obligation under the futures contracts. The fund's risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could underperform funds that do not use a risk management strategy.

The use of derivatives may be combined with asset allocation techniques. The timing and extent of these techniques will depend on several factors, including market movements. In general, when equity markets are more volatile or are declining, assets may be reallocated to Fixed-Income Funds, cash and cash equivalents, and short positions in equity derivative instruments. When equity markets rise, or if volatility is lower, assets may be reallocated to Equity Funds and stock index futures, options, and swaps. Similarly, if fixed-income markets are volatile or are declining, assets may be reallocated to Equity Funds, cash and/or cash equivalents, and short positions in fixed-income derivative instruments. Even in periods of low volatility, the subadvisor may continue to use risk management techniques to protect against sudden market movements, preserve gains after favorable market conditions, and reduce losses in adverse market conditions. Due to the leverage provided by derivatives, the notional value of the fund's derivative positions could exceed 100% of the fund's assets.

In determining when to employ risk management techniques and/or reallocate assets between Equity Funds and Fixed-Income Funds, the subadvisor may use quantitative models that use historical factors such as market movements, and historical changes in the NAV of the fund to make this determination.

The subadvisor selects the percentage level to be maintained in specific underlying Equity Funds and Fixed-Income Funds, and cash and cash equivalents and may from time to time change the allocation in specific underlying funds or rebalance the underlying funds. From time to time, a significant portion of the fund's underlying fixed income assets may be managed by an affiliated subadvisor. To maintain a target allocation in the underlying funds, daily cash flows for the fund may be directed to its underlying funds that most deviate from target.

The fund may invest in various Equity Funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities), and sector holdings such as utilities, science, and technology stocks. Each of these Equity Funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in Fixed-Income Funds that as a group hold a wide range of fixed-income securities including investment grade and below-investment-grade debt securities with maturities that range from short to longer term. The Fixed-Income Funds collectively hold various types of debt instruments, such as corporate bonds and mortgage backed, government issued, domestic and international securities. Equity Funds and Fixed-Income Funds may include funds that employ a passive investment style (i.e., index funds and exchange-traded funds (ETFs)) and at times most of the fund's assets may be invested in index funds.

The fund may also invest in the securities of other investment companies including ETFs and may invest directly in other types of investments, such as equity and fixed-income securities including U.S. government securities, closed-end funds, exchange-traded notes, and partnerships. See "Other

Fund summary

Permitted Investments by the Funds of Funds.” The fund may also engage in short selling. The fund may engage in active and frequent trading of portfolio securities and other instruments to achieve its primary investment strategies.

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

Use of Risk Management and Other Strategic Transactions. In addition to the risk management techniques described above, the fund is authorized to use other investment strategies referred to under “Hedging And Other Strategic Transactions” risk section including, without limitation, investing in foreign currency forward contracts, futures contracts including stock index and foreign currency futures, swaps including interest rate swaps, stock index swaps and credit default swaps and options including stock index options and options on stock index futures, among others.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in fixed-income securities than JHVIT Managed Volatility Portfolios with greater target allocations to underlying funds that invest primarily in equity securities, fixed-income security risks are more prevalent in this fund than in other JHVIT Managed Volatility Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund’s investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Cash collateral risk. Subject to the requirements of Rule 18f-4, to the extent a fund maintains cash collateral required to cover its obligations, such collateral holdings may have the effect of reducing overall portfolio returns. In addition, because such collateral positions cannot be eliminated or reduced unless the corresponding derivative obligation is eliminated or reduced, a large derivative position may materially limit the subadvisor’s flexibility in managing the fund.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Hedging risk. There may be imperfect or even negative correlation between the price of the futures contracts and the price of the underlying securities. For example, futures contracts may not provide an effective hedge because changes in futures contract prices may not track those of the underlying securities or indexes they are intended to hedge. In addition, there are significant differences between the securities and futures markets that could result in an imperfect correlation between the markets, causing a given hedge not to achieve its objectives. The degree of imperfection of correlation depends on circumstances such as variations in speculative market demand for futures, including technical influences in futures trading, and differences between the financial instruments being hedged and the instruments underlying the standard contracts available for trading. A decision as to whether, when and how to hedge involves the exercise of skill and judgment, and even a well-conceived hedge may be unsuccessful to some degree because of market behavior or unexpected interest rate trends. In addition, the fund's investment in exchange-traded futures as a result of the risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could cause the fund to underperform funds that do not use a risk management strategy.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Leveraging risk. Using derivatives may result in a leveraged portfolio. Leveraging long exposures increases a fund's losses when the value of its investments declines. Some derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative models may not produce the desired results. In determining when to employ risk management techniques and/or reallocate exposure among equity, fixed-income and cash, the subadvisor uses quantitative models that use historical market data. However, future market conditions may not be consistent with historical periods, and the historical data may not, therefore, prove to be an accurate predictor of future volatility or losses. The model also may not measure or analyze such data effectively. Thus, the quantitative model may not produce the desired results and may not accurately forecast either future volatility or future large market declines, and this would affect the ability of a fund to be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

Risk management strategies may not be successful, may limit upside potential or may permit or result in losses. The purposes of the risk management strategies are to attempt to limit the fund's total risk exposure during periods of high market volatility and reduce the fund's losses during market declines; however, there is no assurance that these strategies will be successful. These risk management strategies could limit the upside participation of the fund in rising equity markets during periods of high volatility. In instances of equity market declines followed by rising equity markets and significant levels of market volatility, these risk management strategies may detract from fund performance and at times prevent the fund from fully recovering losses by limiting the levels of exposure to equity markets. Due to the use of historical data in the models used in the risk management strategy, there can be delays, especially during volatile markets, in fully implementing the strategy when markets are declining causing the fund to experience greater losses than if the strategy had been fully implemented. There can also be delays, especially during volatile markets, in removing hedges designed to limit losses during declining markets when markets are rising strongly causing the fund to not fully participate in the rising market. The application of risk management techniques can be complex, and misjudgments in implementation may result in under- or over-allocations to equity, fixed-income and/or cash and cash equivalent exposure causing the fund to underperform or experience losses. Also, futures contracts may be subject to exchange-imposed daily price fluctuation limits, and trading may be halted if a contract's price moves above or below the limit on a given day. As a result, the fund may not be able to promptly liquidate unfavorable futures positions and could be required to hold such positions until the delivery date, regardless of changes in its value.

Since the characteristics of many securities change as markets change or time passes, the success of risk management techniques will be subject to the portfolio managers' ability to execute the strategy. Moreover, risk management strategies may increase portfolio transaction costs, which could cause or increase losses or reduce gains. Any one or more of these factors may prevent the fund from achieving the intended risk management goals or could cause the fund to underperform or experience losses (some of which may be sudden) or volatility for any particular period.

Short positions risk. In taking a short position, a fund seeks to profit from an anticipated decline in the value of a security or index of securities. If the security or index instead appreciates in value, the fund will incur losses by having to pay to close out its position at a higher price than the price it received to open that position. Unlike losses from declines in long positions in stocks or other securities (which may not exceed the original amount invested), the losses a fund may incur to close out a short position if the underlying security or index increases in value are potentially unlimited.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Swaps risk. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Use of index futures risk. While the use of index futures may involve a small investment of cash, the losses to a fund could exceed the amount invested, and in certain cases even the total value of the fund's assets, due to the embedded leverage provided by the derivative. Index futures may also result in a loss to the fund if the counterparty to the transaction does not perform.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, and options. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Fund summary

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

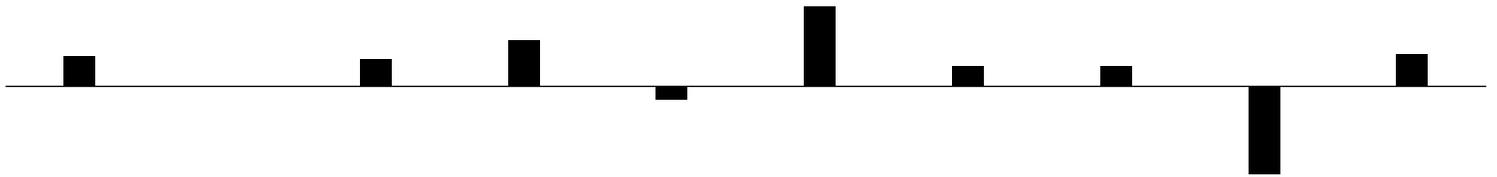
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 14% Russell 3000 Index/6% MSCI EAFE Index/80% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

On March 3, 2014, the fund changed its investment objective and principal investment strategies. The performance information below for the period prior to this date does not reflect these changes. Under the fund's prior investment objective and principal investment strategies, the fund normally invested approximately 20% of its assets in underlying funds that invest primarily in equity securities and approximately 80% of its assets in underlying funds that invest primarily in fixed-income securities and did not use certain risk management techniques to seek to manage the volatility of returns (i.e., standard deviation) and limit the magnitude of portfolio losses.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.02	0.05	4.58	7.82	-2.18	13.38	3.39	3.48	-14.80	5.47



Best quarter:	Q4 2023	6.02%
Worst quarter:	Q2 2022	-7.12%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	5.47	1.74	2.36
Series II	5.20	1.54	2.16
Series NAV	5.50	1.80	2.41
Morningstar U.S. Conservative Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	10.07	4.03	3.71
14% Russell 3000 Index/6% MSCI EAFE Index/80% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	9.01	3.62	3.44

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2020

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Jeffrey Wu

Portfolio Manager and Senior Investment Analyst
Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Managed Volatility Growth Portfolio

Investment objective

To seek long term growth of capital while seeking to both manage the volatility of return and limit the magnitude of portfolio losses.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.19	0.19	0.19
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.03	0.03	0.03
Acquired fund fees and expenses	0.57 ¹	0.57 ¹	0.57 ¹
Total annual fund operating expenses	0.84²	1.04²	0.79²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	86	106	81
3 years	268	331	252
5 years	466	574	439
10 years	1,037	1,271	978

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 8% of the average value of its portfolio.

Principal investment strategies

The Managed Volatility Growth Portfolio, except as otherwise described below, normally invests primarily in underlying funds that invest primarily in equity securities (“Equity Funds”) and underlying funds that invest primarily in fixed-income securities (“Fixed-Income Funds”). The fund may also use certain risk management techniques to seek to manage the volatility of returns (i.e., standard deviation) and limit the magnitude of portfolio losses.

As described below, the fund may directly hold derivative instruments and collateral for these derivative instruments. The fund’s economic exposure to equities and fixed-income securities may fluctuate due to its risk management strategy as noted below. The fund may employ a risk management strategy to attempt to manage the volatility of returns and limit the magnitude of portfolio losses. The risk management strategy may cause the fund’s economic exposure to equity securities, fixed-income securities and cash and cash equivalents (either directly or through investment in underlying funds or derivatives) to fluctuate, and during extreme market volatility, the fund’s economic exposure to either equity or fixed-income securities could be reduced to 0% and its economic exposure to cash and cash equivalents could increase to 100%. The subadvisor normally will seek to limit the fund’s exposure to equity securities (either directly or through investment in underlying funds or derivatives) to no more than 77% and normally will seek to

Fund summary

reduce any equity exposure in excess of this amount as soon as practicable. However, the subadvisor may determine in light of market or economic conditions that the limit should be exceeded to achieve the fund's investment objective.

The fund seeks long term growth of capital while attempting to manage the volatility of returns and limit the magnitude of portfolio losses. The fund seeks to limit the volatility of returns to a range of 11% to 13% (as measured by annualized standard deviation of the fund's returns). However, during periods of prolonged low market volatility the actual volatility experienced by the fund may fall below the range due to maximum limits on equity and fixed-income exposures.

Volatility is a measure of the magnitude of up and down fluctuations in the fund's NAV over time as measured by the annualized standard deviation of its returns. Higher volatility generally indicates higher risk. The more a fund's returns vary from the fund's average return, the more volatile the fund and the higher the standard deviation. The purpose of managing the volatility of returns is to attempt to limit exposure to more volatile asset classes, including both equities and fixed-income asset classes, during periods of high volatility and protect the fund from losses during market declines. The fund also seeks to limit the magnitude of portfolio losses in order to limit exposure during market declines. There can be no assurance that the risk management strategy will be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

In seeking to manage the volatility of returns and limit the magnitude of portfolio losses, the fund may employ certain risk management techniques using derivative instruments and may reallocate assets between the underlying Equity and Fixed-Income Funds. These derivatives may be used to increase or decrease the fund's net equity exposure and will typically consist of stock index futures, but may also include stock index options, options on stock index futures, and stock index swaps. The fund may also employ risk management techniques using derivatives that may increase or decrease the fund's exposure to certain types of fixed-income securities. These instruments may include government bond futures, swaps, and credit default swaps. For more information about these derivative instruments in which the fund may invest, please see the "Hedging And Other Strategic Transactions" risk section in the Statement of Additional Information. Fund assets employed for its risk management strategy include not only derivative instruments but also fixed-income instruments. Because equity and fixed-income derivative instruments may be purchased with a fraction of the assets that would be needed to purchase the securities directly, the remainder of the assets used for the risk management strategy will be invested in a variety of fixed-income instruments. The fund may be required to hold cash or other liquid assets and post these assets with a broker as collateral to cover its obligation under the futures contracts. The fund's risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could underperform funds that do not use a risk management strategy.

The use of derivatives may be combined with asset allocation techniques. The timing and extent of these techniques will depend on several factors, including market movements. In general, when equity markets are more volatile or are declining, assets may be reallocated to Fixed-Income Funds, cash and/or cash equivalents, and short positions in equity derivative instruments. When equity markets rise, or if volatility is lower, assets may be reallocated to Equity Funds and stock index futures, options, and swaps. Similarly, if fixed-income markets are volatile or are declining, assets may be reallocated to Equity Funds, cash and cash equivalents, and short positions in fixed-income derivative instruments. Even in periods of low volatility, the subadvisor may continue to use risk management techniques to protect against sudden market movements, preserve gains after favorable market conditions, and reduce losses in adverse market conditions. Due to the leverage provided by derivatives, the notional value of the fund's derivative positions could exceed 100% of the fund's assets.

In determining when to employ risk management techniques and/or reallocate assets between Equity Funds and Fixed-Income Funds, the subadvisor may use quantitative models that use historical factors such as market movements, and historical changes in the NAV of the fund to make this determination.

The subadvisor selects the percentage level to be maintained in specific underlying Equity Funds and Fixed-Income Funds, and cash and cash equivalents and may from time to time change the allocation in specific underlying funds or rebalance the underlying funds. From time to time, a significant portion of the fund's underlying fixed income assets may be managed by an affiliated subadvisor. To maintain a target allocation in the underlying funds, daily cash flows for the fund may be directed to its underlying funds that most deviate from target.

The fund may invest in various Equity Funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities), and sector holdings such as utilities, science, and technology stocks. Each of these Equity Funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in Fixed-Income Funds that as a group hold a wide range of fixed-income securities including investment grade and below-investment-grade debt securities with maturities that range from short to longer term. The Fixed-Income Funds collectively hold various types of debt instruments, such as corporate bonds and mortgage backed, government issued, domestic and international securities. Equity Funds and Fixed-Income Funds may include funds that employ a passive investment style (i.e., index funds and exchange-traded funds (ETFs)) and at times most of the fund's assets may be invested in index funds.

The fund may also invest in the securities of other investment companies including ETFs and may invest directly in other types of investments, such as equity and fixed-income securities including U.S. government securities, closed-end funds, exchange-traded notes, and partnerships. See "Other

Fund summary

Permitted Investments by the Funds of Funds.” The fund may also engage in short selling. The fund may engage in active and frequent trading of portfolio securities and other instruments to achieve its primary investment strategies.

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

Use of Risk Management and Other Strategic Transactions. In addition to the risk management techniques described above, the fund is authorized to use other investment strategies referred to under “Hedging And Other Strategic Transactions” risk section including, without limitation, investing in foreign currency forward contracts, futures contracts including stock index and foreign currency futures, swaps including interest rate swaps, stock index swaps and credit default swaps and options including stock index options and options on stock index futures, among others.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in equity securities than JHVIT Managed Volatility Portfolios with greater target allocations to underlying funds that invest primarily in fixed-income securities, equity security risks are more prevalent in this fund than in other JHVIT Managed Volatility Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund’s investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Cash collateral risk. Subject to the requirements of Rule 18f-4, to the extent a fund maintains cash collateral required to cover its obligations, such collateral holdings may have the effect of reducing overall portfolio returns. In addition, because such collateral positions cannot be eliminated or reduced unless the corresponding derivative obligation is eliminated or reduced, a large derivative position may materially limit the subadvisor’s flexibility in managing the fund.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Hedging risk. There may be imperfect or even negative correlation between the price of the futures contracts and the price of the underlying securities. For example, futures contracts may not provide an effective hedge because changes in futures contract prices may not track those of the underlying securities or indexes they are intended to hedge. In addition, there are significant differences between the securities and futures markets that could result in an imperfect correlation between the markets, causing a given hedge not to achieve its objectives. The degree of imperfection of correlation depends on circumstances such as variations in speculative market demand for futures, including technical influences in futures trading, and differences between the financial instruments being hedged and the instruments underlying the standard contracts available for trading. A decision as to whether, when and how to hedge involves the exercise of skill and judgment, and even a well-conceived hedge may be unsuccessful to some degree because of market behavior or unexpected interest rate trends. In addition, the fund's investment in exchange-traded futures as a result of the risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could cause the fund to underperform funds that do not use a risk management strategy.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Leveraging risk. Using derivatives may result in a leveraged portfolio. Leveraging long exposures increases a fund's losses when the value of its investments declines. Some derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative models may not produce the desired results. In determining when to employ risk management techniques and/or reallocate exposure among equity, fixed-income and cash, the subadvisor uses quantitative models that use historical market data. However, future market conditions may not be consistent with historical periods, and the historical data may not, therefore, prove to be an accurate predictor of future volatility or losses. The model also may not measure or analyze such data effectively. Thus, the quantitative model may not produce the desired results and may not accurately forecast either future volatility or future large market declines, and this would affect the ability of a fund to be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

Risk management strategies may not be successful, may limit upside potential or may permit or result in losses. The purposes of the risk management strategies are to attempt to limit the fund's total risk exposure during periods of high market volatility and reduce the fund's losses during market declines; however, there is no assurance that these strategies will be successful. These risk management strategies could limit the upside participation of the fund in rising equity markets during periods of high volatility. In instances of equity market declines followed by rising equity markets and significant levels of market volatility, these risk management strategies may detract from fund performance and at times prevent the fund from fully recovering losses by limiting the levels of exposure to equity markets. Due to the use of historical data in the models used in the risk management strategy, there can be delays, especially during volatile markets, in fully implementing the strategy when markets are declining causing the fund to experience greater losses than if the strategy had been fully implemented. There can also be delays, especially during volatile markets, in removing hedges designed to limit losses during declining markets when markets are rising strongly causing the fund to not fully participate in the rising market. The application of risk management techniques can be complex, and misjudgments in implementation may result in under- or over-allocations to equity, fixed-income and/or cash and cash equivalent exposure causing the fund to underperform or experience losses. Also, futures contracts may be subject to exchange-imposed daily price fluctuation limits, and trading may be halted if a contract's price moves above or below the limit on a given day. As a result, the fund may not be able to promptly liquidate unfavorable futures positions and could be required to hold such positions until the delivery date, regardless of changes in its value.

Since the characteristics of many securities change as markets change or time passes, the success of risk management techniques will be subject to the portfolio managers' ability to execute the strategy. Moreover, risk management strategies may increase portfolio transaction costs, which could cause or increase losses or reduce gains. Any one or more of these factors may prevent the fund from achieving the intended risk management goals or could cause the fund to underperform or experience losses (some of which may be sudden) or volatility for any particular period.

Short positions risk. In taking a short position, a fund seeks to profit from an anticipated decline in the value of a security or index of securities. If the security or index instead appreciates in value, the fund will incur losses by having to pay to close out its position at a higher price than the price it received to open that position. Unlike losses from declines in long positions in stocks or other securities (which may not exceed the original amount invested), the losses a fund may incur to close out a short position if the underlying security or index increases in value are potentially unlimited.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Swaps risk. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Use of index futures risk. While the use of index futures may involve a small investment of cash, the losses to a fund could exceed the amount invested, and in certain cases even the total value of the fund's assets, due to the embedded leverage provided by the derivative. Index futures may also result in a loss to the fund if the counterparty to the transaction does not perform.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, and options. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Fund summary

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

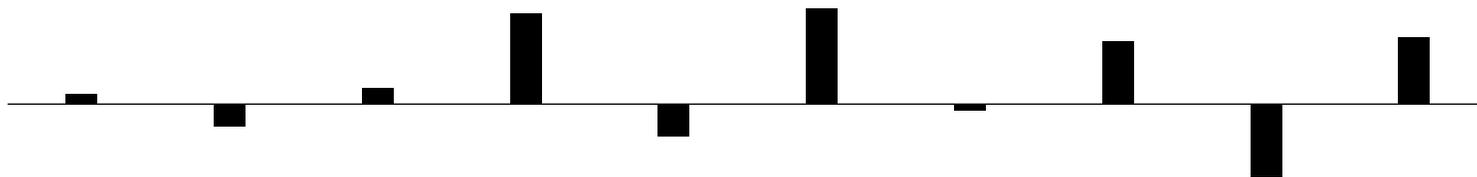
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 49% Russell 3000 Index/21% MSCI EAFE Index/30% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

On March 3, 2014, the fund changed its investment objective and principal investment strategies. The performance information below for the period prior to this date does not reflect these changes. Under the fund's prior investment objective and principal investment strategies, the fund normally invested approximately 70% of its assets in underlying funds that invest primarily in equity securities and approximately 30% of its assets in underlying funds that invest primarily in fixed-income securities and did not use certain risk management techniques to seek to manage the volatility of returns (i.e. standard deviation) and limit the magnitude of portfolio losses.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2.16	-4.53	3.34	18.59	-6.54	19.56	-1.42	12.82	-14.86	13.69



Best quarter:	Q4 2023	10.31%
Worst quarter:	Q1 2020	-16.79%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.69	5.18	3.70
Series II	13.54	4.98	3.50
Series NAV	13.81	5.25	3.76
Morningstar U.S. Moderately Aggressive Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	19.46	10.61	7.97
49% Russell 3000 Index/21% MSCI EAFE Index/30% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	18.03	9.66	7.25

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2020

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Jeffrey Wu

Portfolio Manager and Senior Investment Analyst
Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Managed Volatility Moderate Portfolio

Investment objective

To seek current income and growth of capital while seeking to both manage the volatility of return and limit the magnitude of portfolio losses.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.17	0.17	0.17
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.03	0.03	0.03
Acquired fund fees and expenses	0.55 ¹	0.55 ¹	0.55 ¹
Total annual fund operating expenses	0.80²	1.00²	0.75²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	82	102	77
3 years	255	318	240
5 years	444	552	417
10 years	990	1,225	930

Portfolio turnover

The fund, which operates as a fund of funds and invests in underlying funds, does not pay transaction costs, such as commissions, when it buys and sells shares of underlying funds (or “turns over” its portfolio). An underlying fund does pay transaction costs when it turns over its portfolio, and a higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the performance of the underlying funds and of the fund. During its most recent fiscal year, the fund’s portfolio turnover rate was 6% of the average value of its portfolio.

Principal investment strategies

The Managed Volatility Moderate Portfolio, except as otherwise described below, normally invests primarily in underlying funds that invest primarily in equity securities (“Equity Funds”) and underlying funds that invest primarily in fixed-income securities (“Fixed-Income Funds”). The fund may also use certain risk management techniques to seek to manage the volatility of returns (i.e., standard deviation) and limit the magnitude of portfolio losses.

As described below, the fund may directly hold derivative instruments and collateral for these derivative instruments. The fund’s economic exposure to equities and fixed-income securities may fluctuate due to its risk management strategy as noted below. The fund may employ a risk management strategy to attempt to manage the volatility of returns and limit the magnitude of portfolio losses. The risk management strategy may cause the fund’s economic exposure to equity securities, fixed-income securities and cash and cash equivalents (either directly or through investment in underlying funds or derivatives) to fluctuate, and during extreme market volatility, the fund’s economic exposure to either equity or fixed-income securities could be reduced to 0% and its economic exposure to cash and cash equivalents could increase to 100%. The subadvisor normally will seek to limit the fund’s exposure to equity securities (either directly or through investment in underlying funds or derivatives) to no more than 44% and normally will seek to

Fund summary

reduce any equity exposure in excess of this amount as soon as practicable. However, the subadvisor may determine in light of market or economic conditions that the limit should be exceeded to achieve the fund's investment objective.

The fund seeks long term growth of capital while attempting to manage the volatility of returns and limit the magnitude of portfolio losses. The fund seeks to limit the volatility of returns to a range of 7% to 9% (as measured by annualized standard deviation of the fund's returns). However, during periods of prolonged low market volatility the actual volatility experienced by the fund may fall below the range due to maximum limits on equity and fixed-income exposures.

Volatility is a measure of the magnitude of up and down fluctuations in the fund's NAV over time as measured by the annualized standard deviation of its returns. Higher volatility generally indicates higher risk. The more a fund's returns vary from the fund's average return, the more volatile the fund and the higher the standard deviation. The purpose of managing the volatility of returns is to attempt to limit exposure to more volatile asset classes, including both equities and fixed-income asset classes, during periods of high volatility and protect the fund from losses during market declines. The fund also seeks to limit the magnitude of portfolio losses in order to limit exposure during market declines. There can be no assurance that the risk management strategy will be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

In seeking to manage the volatility of returns and limit the magnitude of portfolio losses, the fund may employ certain risk management techniques using derivative instruments and may reallocate assets between the underlying Equity and Fixed-Income Funds. These derivatives may be used to increase or decrease the fund's net equity exposure and will typically consist of stock index futures, but may also include stock index options, options on stock index futures, and stock index swaps. The fund may also employ risk management techniques using derivatives that may increase or decrease the fund's exposure to certain types of fixed-income securities. These instruments may include government bond futures, swaps, and credit default swaps. For more information about these derivative instruments in which the fund may invest, please see the "Hedging And Other Strategic Transactions" risk section in the Statement of Additional Information. Fund assets employed for its risk management strategy include not only derivative instruments but also fixed-income instruments. Because equity and fixed-income derivative instruments may be purchased with a fraction of the assets that would be needed to purchase the securities directly, the remainder of the assets used for the risk management strategy will be invested in a variety of fixed-income instruments. The fund may be required to hold cash or other liquid assets and post these assets with a broker as collateral to cover its obligation under the futures contracts. The fund's risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could underperform funds that do not use a risk management strategy.

The use of derivatives may be combined with asset allocation techniques. The timing and extent of these techniques will depend on several factors, including market movements. In general, when equity markets are more volatile or are declining, assets may be reallocated to Fixed-Income Funds, cash and/or cash equivalents, and short positions in equity derivative instruments. When equity markets rise, or if volatility is lower, assets may be reallocated to Equity Funds and stock index futures, options, and swaps. Similarly, if fixed-income markets are volatile or are declining, assets may be reallocated to Equity Funds, cash and cash equivalents, and short positions in fixed-income derivative instruments. Even in periods of low volatility, the subadvisor may continue to use risk management techniques to protect against sudden market movements, preserve gains after favorable market conditions, and reduce losses in adverse market conditions. Due to the leverage provided by derivatives, the notional value of the fund's derivative positions could exceed 100% of the fund's assets.

In determining when to employ risk management techniques and/or reallocate assets between Equity Funds and Fixed-Income Funds, the subadvisor may use quantitative models that use historical factors such as market movements, and historical changes in the NAV of the fund to make this determination.

The subadvisor selects the percentage level to be maintained in specific underlying Equity Funds and Fixed-Income Funds, and cash and cash equivalents and may from time to time change the allocation in specific underlying funds or rebalance the underlying funds. From time to time, a significant portion of the fund's underlying fixed income assets may be managed by an affiliated subadvisor. To maintain a target allocation in the underlying funds, daily cash flows for the fund may be directed to its underlying funds that most deviate from target.

The fund may invest in various Equity Funds that as a group hold a wide range of equity type securities. These include small-, mid- and large-capitalization stocks, domestic and foreign securities (including emerging market securities), and sector holdings such as utilities, science, and technology stocks. Each of these Equity Funds has its own investment strategy which, for example, may focus on growth stocks or value stocks or may employ a strategy combining growth and income stocks and/or may invest in derivatives such as options on securities and futures contracts. The fund may also invest in Fixed-Income Funds that as a group hold a wide range of fixed-income securities including investment grade and below-investment-grade debt securities with maturities that range from short to longer term. The Fixed-Income Funds collectively hold various types of debt instruments, such as corporate bonds and mortgage backed, government issued, domestic and international securities. Equity Funds and Fixed-Income Funds may include funds that employ a passive investment style (i.e., index funds and exchange-traded funds (ETFs)) and at times most of the fund's assets may be invested in index funds.

The fund may also invest in the securities of other investment companies including ETFs and may invest directly in other types of investments, such as equity and fixed-income securities including U.S. government securities, closed-end funds, exchange-traded notes, and partnerships. See "Other

Fund summary

Permitted Investments by the Funds of Funds.” The fund may also engage in short selling. The fund may engage in active and frequent trading of portfolio securities and other instruments to achieve its primary investment strategies.

The fund bears its own expenses and, in addition, indirectly bears its proportionate share of the expenses of the underlying funds in which it invests.

Use of Risk Management and Other Strategic Transactions. In addition to the risk management techniques described above, the fund is authorized to use other investment strategies referred to under “Hedging And Other Strategic Transactions” risk section including, without limitation, investing in foreign currency forward contracts, futures contracts including stock index and foreign currency futures, swaps including interest rate swaps, stock index swaps and credit default swaps and options including stock index options and options on stock index futures, among others.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

Because this fund has a greater exposure to underlying funds that invest primarily in equity securities than JHVIT Managed Volatility Portfolios with greater target allocations to underlying funds that invest primarily in fixed-income securities, equity security risks are more prevalent in this fund than in other JHVIT Managed Volatility Portfolios. The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Principal risks of investing in the funds of funds

Affiliated insurance companies risk. The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund’s investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Cash collateral risk. Subject to the requirements of Rule 18f-4, to the extent a fund maintains cash collateral required to cover its obligations, such collateral holdings may have the effect of reducing overall portfolio returns. In addition, because such collateral positions cannot be eliminated or reduced unless the corresponding derivative obligation is eliminated or reduced, a large derivative position may materially limit the subadvisor’s flexibility in managing the fund.

Commodity risk. Commodity prices may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund's investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Exchange-traded notes (ETNs) risk. An ETN generally reflects the risks associated with the assets composing the underlying market benchmark or strategy it is designed to track. ETNs also are subject to issuer and fixed-income risks.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Fund of funds risk. The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives. A fund bears underlying fund fees and expenses indirectly.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Hedging risk. There may be imperfect or even negative correlation between the price of the futures contracts and the price of the underlying securities. For example, futures contracts may not provide an effective hedge because changes in futures contract prices may not track those of the underlying securities or indexes they are intended to hedge. In addition, there are significant differences between the securities and futures markets that could result in an imperfect correlation between the markets, causing a given hedge not to achieve its objectives. The degree of imperfection of correlation depends on circumstances such as variations in speculative market demand for futures, including technical influences in futures trading, and differences between the financial instruments being hedged and the instruments underlying the standard contracts available for trading. A decision as to whether, when and how to hedge involves the exercise of skill and judgment, and even a well-conceived hedge may be unsuccessful to some degree because of market behavior or unexpected interest rate trends. In addition, the fund's investment in exchange-traded futures as a result of the risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could cause the fund to underperform funds that do not use a risk management strategy.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Leveraging risk. Using derivatives may result in a leveraged portfolio. Leveraging long exposures increases a fund's losses when the value of its investments declines. Some derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Master limited partnership (MLP) risk. MLPs generally reflect the risks associated with their underlying assets and with pooled investment vehicles. MLPs with credit-related holdings are subject to interest-rate risk and risk of default.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative models may not produce the desired results. In determining when to employ risk management techniques and/or reallocate exposure among equity, fixed-income and cash, the subadvisor uses quantitative models that use historical market data. However, future market conditions may not be consistent with historical periods, and the historical data may not, therefore, prove to be an accurate predictor of future volatility or losses. The model also may not measure or analyze such data effectively. Thus, the quantitative model may not produce the desired results and may not accurately forecast either future volatility or future large market declines, and this would affect the ability of a fund to be successful in managing the volatility of returns and limiting the magnitude of portfolio losses.

Risk management strategies may not be successful, may limit upside potential or may permit or result in losses. The purposes of the risk management strategies are to attempt to limit the fund's total risk exposure during periods of high market volatility and reduce the fund's losses during market declines; however, there is no assurance that these strategies will be successful. These risk management strategies could limit the upside participation of the fund in rising equity markets during periods of high volatility. In instances of equity market declines followed by rising equity markets and significant levels of market volatility, these risk management strategies may detract from fund performance and at times prevent the fund from fully recovering losses by limiting the levels of exposure to equity markets. Due to the use of historical data in the models used in the risk management strategy, there can be delays, especially during volatile markets, in fully implementing the strategy when markets are declining causing the fund to experience greater losses than if the strategy had been fully implemented. There can also be delays, especially during volatile markets, in removing hedges designed to limit losses during declining markets when markets are rising strongly causing the fund to not fully participate in the rising market. The application of risk management techniques can be complex, and misjudgments in implementation may result in under- or over-allocations to equity, fixed-income and/or cash and cash equivalent exposure causing the fund to underperform or experience losses. Also, futures contracts may be subject to exchange-imposed daily price fluctuation limits, and trading may be halted if a contract's price moves above or below the limit on a given day. As a result, the fund may not be able to promptly liquidate unfavorable futures positions and could be required to hold such positions until the delivery date, regardless of changes in its value.

Since the characteristics of many securities change as markets change or time passes, the success of risk management techniques will be subject to the portfolio managers' ability to execute the strategy. Moreover, risk management strategies may increase portfolio transaction costs, which could cause or increase losses or reduce gains. Any one or more of these factors may prevent the fund from achieving the intended risk management goals or could cause the fund to underperform or experience losses (some of which may be sudden) or volatility for any particular period.

Short positions risk. In taking a short position, a fund seeks to profit from an anticipated decline in the value of a security or index of securities. If the security or index instead appreciates in value, the fund will incur losses by having to pay to close out its position at a higher price than the price it received to open that position. Unlike losses from declines in long positions in stocks or other securities (which may not exceed the original amount invested), the losses a fund may incur to close out a short position if the underlying security or index increases in value are potentially unlimited.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Swaps risk. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Target allocation risk. The fund's risk profile will change due to reallocation or rebalancing of portfolio assets.

Use of index futures risk. While the use of index futures may involve a small investment of cash, the losses to a fund could exceed the amount invested, and in certain cases even the total value of the fund's assets, due to the embedded leverage provided by the derivative. Index futures may also result in a loss to the fund if the counterparty to the transaction does not perform.

Principal risks of investing in the underlying funds

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that a fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, interest-rate swaps, and options. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Fund summary

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

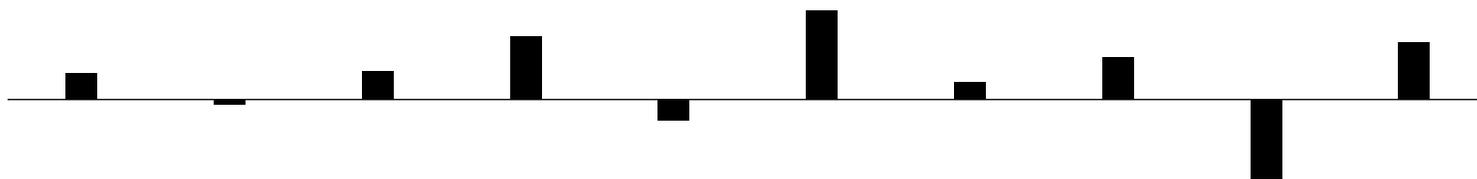
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 28% Russell 3000 Index/12% MSCI EAFE Index/60% Bloomberg U.S. Aggregate Bond Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

On March 3, 2014, the fund changed its investment objective and principal investment strategies. The performance information below for the period prior to this date does not reflect these changes. Under the fund's prior investment objective and principal investment strategies, the fund normally invested approximately 40% of its assets in underlying funds that invest primarily in equity securities and approximately 60% of its assets in underlying funds that invest primarily in fixed-income securities and did not use certain risk management techniques to seek to manage the volatility of returns (i.e. standard deviation) and limit the magnitude of portfolio losses.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
4.94	-0.91	5.29	11.88	-3.99	16.72	3.31	7.90	-14.87	10.64



Best quarter:	Q4 2023	8.83%
Worst quarter:	Q1 2020	-10.97%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	10.64	4.15	3.72
Series II	10.54	3.94	3.52
Series NAV	10.79	4.21	3.78
Morningstar U.S. Moderately Conservative Target Allocation Index (reflects no deduction for fees, expenses, or taxes)	13.04	6.12	5.09
28% Russell 3000 Index/12% MSCI EAFE Index/60% Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	12.57	6.08	5.01

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Geoffrey Kelley, CFA

Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity
Managed fund since 2020

Robert E. Sykes, CFA

Senior Portfolio Manager and Head of Asset Allocation
Managed fund since 2018

Nathan W. Thoof, CFA

Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

Jeffrey Wu

Portfolio Manager and Senior Investment Analyst
Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Mid Cap Growth Trust

Investment objective

To seek long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.83	0.83	0.83
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Acquired fund fees and expenses	0.01 ¹	0.01 ¹	0.01 ¹
Total annual fund operating expenses	0.95²	1.15²	0.90²

1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.

2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	97	117	92
3 years	303	365	287
5 years	525	633	498
10 years	1,166	1,398	1,108

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 104% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities of medium-sized companies with significant capital appreciation potential. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) For the fund, “medium-sized companies” are those with market capitalizations within the collective market capitalization range of companies represented in either the Russell Midcap Index (\$357 million to \$87 billion as of February 29, 2024) or the S&P Midcap 400 Index (\$1.6 billion to \$46 billion as of February 29, 2024).

The subadvisor’s investment approach is based primarily on proprietary fundamental analysis. Fundamental analysis involves the assessment of a company through such factors as its business environment, management, balance sheet, income statement, anticipated earnings, revenues and other related measures of value. In analyzing companies for investment, the subadvisor looks for, among other things, a strong balance sheet, strong earnings growth, attractive industry dynamics, strong competitive advantages (e.g., strong management teams), and attractive relative value within the context of a security’s primary trading market. Securities are sold when the investment has achieved its intended purpose, or because it is no longer considered attractive. The fund may invest up to 25% of its total assets in foreign securities, including emerging market securities.

The fund’s investment process may, at times, result in a higher than average portfolio turnover ratio and increased trading expenses.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Consumer discretionary sector risk. The consumer discretionary sector may be affected by fluctuations in supply and demand, and may also be adversely affected by changes in consumer spending as a result of world events, political and economic conditions, commodity price volatility, changes in exchange rates, imposition of import controls, increased competition, depletion of resources, and labor relations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Privately held and newly public companies risk. Investments in the stocks of privately held companies and newly public companies involve greater risks than investments in stocks of companies that have traded publicly on an exchange for extended time periods. Investments in such companies are less liquid and may be difficult to value. There may be significantly less information available about these companies' business models, quality of management, earnings growth potential, and other criteria used to evaluate their investment prospects. The extent (if at all) to which securities of privately held companies or newly public companies may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Funds with principal investment strategies that involve investments in securities of privately held companies tend to have a greater exposure to liquidity risk than funds that do not invest in securities of privately held companies.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

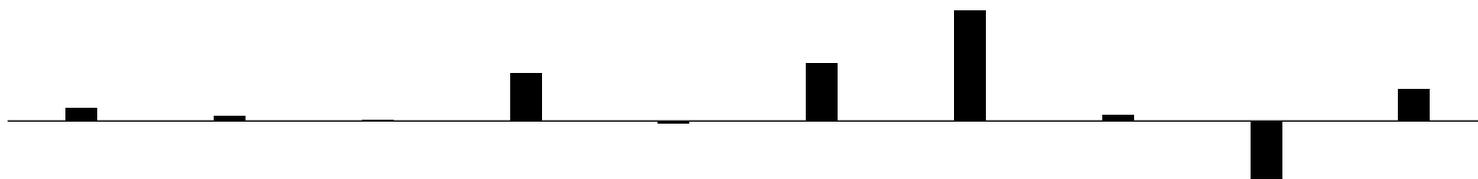
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
8.02	3.00	0.59	28.54	-1.56	34.53	65.39	3.54	-34.64	18.71



Best quarter:	Q2 2020	42.22%
Worst quarter:	Q2 2022	-29.21%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	18.71	12.32	9.73
Series II	18.63	12.11	9.52
Series NAV	18.87	12.39	9.79
Russell Midcap Growth Index (reflects no deduction for fees, expenses, or taxes)	25.87	13.81	10.57

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Mario E. Abularach, CFA

Senior Managing Director and Equity Research Analyst
Managed fund since 2006

Stephen Mortimer

Senior Managing Director and Equity Portfolio Manager
Managed fund since 2010

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other

Fund summary

investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Mid Cap Index Trust

Investment objective

Seeks to approximate the aggregate total return of a mid cap U.S. domestic equity market index.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.47	0.47	0.47
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	0.57	0.77	0.52
Contractual expense reimbursement	-0.11 ¹	-0.11 ¹	-0.11 ¹
Total annual fund operating expenses after expense reimbursements	0.46	0.66	0.41

1 The advisor contractually agrees to reduce its management fee by an annual rate of 0.10% of the fund's average daily net assets. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	47	67	42
3 years	172	235	156
5 years	307	417	280
10 years	703	944	642

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 19% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) at the time of investment in: (a) the common stocks that are included in the S&P Midcap 400 Index; and (b) securities (which may or may not be included in the S&P Midcap 400 Index) that the subadvisor believes as a group will behave in a manner similar to the index. (The fund will provide written notice to shareholders at least

Fund summary

60 days prior to a change in its 80% investment policy.) As of February 29, 2024, the market capitalizations of companies included in the S&P Midcap 400 Index ranged from \$1.6 billion to \$46 billion.

An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indexes may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. In contrast to actively managed funds, which seek to outperform their respective benchmark indexes through research and analysis, index funds are passively managed funds that seek to mirror the performance of their target indexes, minimizing performance differences over time. The fund seeks to track the performance of the S&P Midcap 400 Index by: (a) holding all, or a representative sample, of the securities that comprise that index; and/or (b) by holding securities (which may or may not be included in the index) that the subadvisor believes as a group will behave in a manner similar to the index. However, the fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index closely, typically will be unable to match the performance of the target index exactly. The composition of an index changes from time to time, and the subadvisor will reflect those changes in the composition of the fund's portfolio as soon as practicable.

The fund may invest in index futures for the purposes of replicating an index and depositary receipts.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. Depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include futures contracts. Futures contracts generally are subject to counterparty risk.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Fund summary

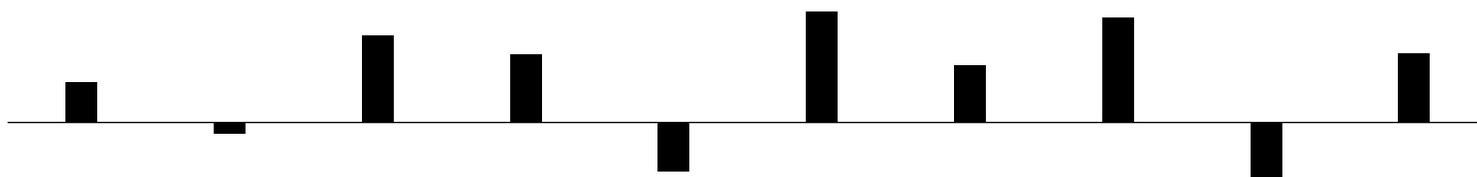
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
9.35	-2.59	20.11	15.81	-11.46	25.59	13.22	24.21	-13.43	16.01



Best quarter:	Q4 2020	24.19%
Worst quarter:	Q1 2020	-29.73%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	16.01	12.14	8.81
Series II	15.73	11.93	8.59
Series NAV	16.00	12.20	8.86
S&P Midcap 400 Index (reflects no deduction for fees, expenses, or taxes)	16.44	12.62	9.27

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (North America) Limited

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Ashikhusein Shahpurwala, CFA, PRM

Senior Portfolio Manager
Managed fund since 2013

Boncana Maiga, CFA, CIM

Portfolio Manager
Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Mid Value Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.87	0.87	0.87
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Acquired fund fees and expenses	0.04 ¹	0.04 ¹	0.04 ¹
Total annual fund operating expenses	1.02²	1.22²	0.97²
Contractual expense reimbursement	-0.01 ³	-0.01 ³	-0.01 ³
Total annual fund operating expenses after expense reimbursements	1.01	1.21	0.96

- ¹ “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- ² The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- ³ The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	103	123	98
3 years	324	386	308
5 years	562	669	535
10 years	1,247	1,476	1,189

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 46% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in companies with market capitalizations that are within the Russell Midcap Value Index (\$357 million to \$87 billion as of February 29, 2024). The fund invests in a diversified mix of common stocks of mid-size U.S. companies that are believed to be undervalued by various measures and offer good prospects for capital appreciation.

The subadvisor employs a value approach in selecting investments. The subadvisor's in-house research team seeks to identify companies whose stock prices do not appear to reflect their underlying values. The subadvisor generally looks for companies with one or more of the following characteristics:

- Low stock prices relative to net assets, earnings, cash flow, sales, book value, or private market value;
- Demonstrated or potentially attractive operating margins, profits and/or cash flow;
- Sound balance sheets;
- Stock ownership by management/employees; or
- Experienced and capable management.

The market capitalization of companies held by the fund and included in the index changes over time. The fund will not automatically sell or cease to purchase stock of a company it already owns just because the company's market capitalization grows or falls outside these ranges.

The fund may sell assets for a variety of reasons, including in response to a change in the original investment considerations or to limit losses, adjust the characteristics of the overall portfolio, or redeploy assets into different opportunities.

In pursuing the fund's investment objective, the subadvisor has the discretion to deviate from its normal investment criteria, as described above, and purchase securities that the subadvisor believes will provide an opportunity for substantial appreciation. These situations might arise when the subadvisor believes a security could increase in value for a variety of reasons, including a change in management, an extraordinary corporate event, a new product introduction or innovation or a favorable competitive development.

While most assets will be invested in U.S. common stocks, the fund may purchase other types of securities, for example: convertible securities and warrants, foreign securities (up to 20% of total assets), and certain exchange-traded funds (ETFs). For purposes of the fund, ETFs are considered securities with a market capitalization equal to the weighted average market capitalization of the basket of securities comprising the ETF.

The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivative that can combine the characteristics of securities, futures and options. Such securities may bear interest or pay dividends at below (or even relatively nominal) rates.

The fund may focus its investments in a particular sector or sectors of the economy.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

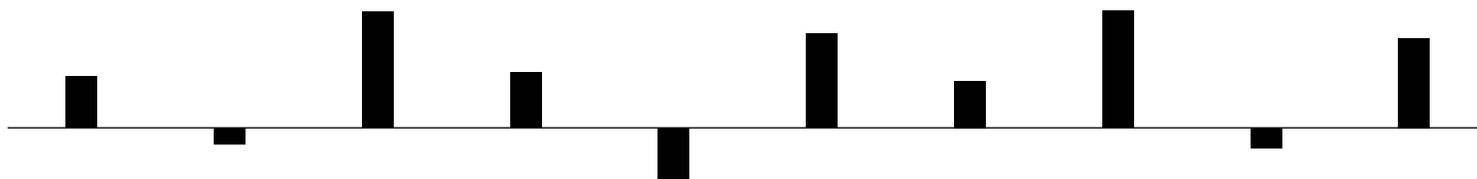
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
10.70	-3.40	24.09	11.46	-10.68	19.49	9.72	24.26	-4.30	18.65



Best quarter:	Q2 2020	22.19%
Worst quarter:	Q1 2020	-28.72%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	18.52	13.06	9.29
Series II	18.25	12.80	9.06
Series NAV	18.65	13.09	9.35
Russell Midcap Value Index (reflects no deduction for fees, expenses, or taxes)	12.71	11.16	8.26

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Vincent DeAugustino, CFA

Vice President

Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other

Fund summary

investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Money Market Trust

Investment objective

To obtain maximum current income consistent with preservation of principal and liquidity.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.34	0.34	0.34
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	0.44	0.64	0.39
Contractual expense reimbursement	-0.11 ¹	-0.11 ¹	-0.11 ¹
Total annual fund operating expenses after expense reimbursements	0.33	0.53	0.28

1 The advisor contractually agrees to reduce its management fee or, if necessary, make payment to the fund in an amount equal to the amount by which expenses of the fund exceed 0.28% of average daily net assets of the fund. For purposes of this agreement, “expenses of the fund” means all fund expenses, excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, (e) class-specific expenses, (f) borrowing costs, (g) prime brokerage fees, (h) acquired fund fees and expenses paid indirectly, and (i) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the advisor and the fund based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	34	54	29
3 years	130	194	114
5 years	235	346	208
10 years	544	788	482

Principal investment strategies

The fund operates as a “government money market fund” in accordance with Rule 2a-7 under the Investment Company Act of 1940, as amended, and is managed in the following manner:

- under normal market conditions, the fund invests at least 99.5% of its total assets in cash, U.S. government securities and/or repurchase agreements that are fully collateralized by U.S. government securities or cash;
- U.S. government securities include both securities issued or guaranteed by the U.S. Treasury and securities issued by entities that are chartered or sponsored by Congress but are not issued or guaranteed by the U.S. Treasury;

Fund summary

- the fund seeks to maintain a stable net asset value (“NAV”) of \$1.00 per share and its portfolio is valued using the amortized cost method as permitted by Rule 2a-7;
- the fund invests only in U.S. dollar-denominated securities;
- the fund buys securities that have remaining maturities of 397 days or less (as calculated pursuant to Rule 2a-7);
- the fund maintains a dollar-weighted average maturity of 60 days or less and a dollar-weighted average life to maturity of 120 days or less;
- the fund must meet certain other criteria, including those relating to maturity, liquidity and credit quality; and
- as a government money market fund, the fund is not subject to liquidity fees, although the fund’s Board of Trustees may elect to impose such fees in the future.

The fund generally expects to declare and pay dividends from net investment income on a daily basis on each share class as long as the income attributable to a class exceeds the expenses attributable to that class on each day. If class expenses exceed class income on any day, the fund will not pay a dividend on the class on that day and will resume paying dividends only when, on a future date, the accumulated net investment income of the class is positive. The fund has adopted this policy because, in a low interest rate investment environment, it may find that on any given day or on a number of consecutive days, its investment returns may be less than the expenses attributable to a class. For a more complete description of this policy, which can result in the fund not paying dividends on one or more classes for one or more periods that may be as short as a day or quite lengthy, see “General Information — Dividends” below. For a description of the allocation of expenses among fund share classes, see “Rule 12b-1 plans” in the prospectus.

Principal risks

The fund is subject to risks, and you could lose money by investing in the fund. Although the fund seeks to preserve the value of your investment at \$1.00 per share, it cannot guarantee it will do so. The fund’s investment strategy may not produce the intended results. An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. The fund’s sponsor has no legal obligation to provide financial support to the fund, and you should not expect that the sponsor will provide financial support to the fund at any time.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund’s securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Redemption risk. The fund may experience periods of heavy redemptions that could cause it to liquidate its assets at inopportune times or at a loss or depressed value, particularly during periods of declining or illiquid markets, and that could affect the fund’s ability to maintain a \$1.00 share price. Redemption risk is greater to the extent that the fund has investors with large shareholdings, short investment horizons or unpredictable cash flow needs. The redemption by one or more large shareholders of their holdings in the fund could cause the remaining shareholders in the fund to lose money. In addition, the fund may suspend redemptions and liquidate the fund when permitted by applicable regulations.

Fund summary

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Tax diversification risk. As described above, the fund operates as a “government money market fund” in accordance with Rule 2a-7 under the Investment Company Act of 1940, as amended, (a “Government Fund”). Additionally, the fund intends to meet the diversification requirements that are applicable to insurance company separate accounts under Subchapter L of the Internal Revenue Code of 1986, as amended (the “Diversification Requirements”). To satisfy the Diversification Requirements applicable to variable annuity contracts, the value of the assets of the fund invested in securities issued by the United States government must remain below specified thresholds. For these purposes, each United States government agency or instrumentality is treated as a separate issuer. Under a Notice issued by the Internal Revenue Service in 2016, pending amendment of the applicable regulations, government money market funds may rely upon an alternative diversification standard.

A failure to satisfy the Diversification Requirements could have significant adverse tax consequences for variable annuity contract owners whose contract values are determined by investment in the fund.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

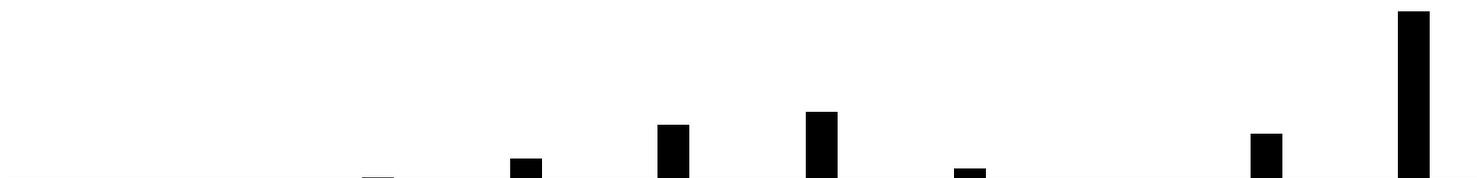
U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year. The inception dates for Series I and Series NAV are June 18, 1985 and May 2, 2016, respectively. Performance shown for periods prior to the inception date of Series NAV is the performance of the fund's oldest share class, Series I. This pre-inception performance would be higher if adjusted to reflect that Series NAV does not have a Rule 12b-1 fee. The performance information below does not reflect fees and expenses of any variable insurance contract that may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
0.00	0.00	0.07	0.59	1.54	1.92	0.31	0.00	1.29	4.76



Best quarter:	Q4 2023	1.28%
Worst quarter:	Q4 2021	0.00%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	4.76	1.64	1.04
Series II	4.55	1.51	0.92
Series NAV	4.81	1.68	1.07

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Opportunistic Fixed Income Trust

Investment objective

To seek maximum total return, consistent with preservation of capital and prudent investment management.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.65	0.65	0.65
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.23	0.23	0.23
Acquired fund fees and expenses	0.01 ¹	0.01 ¹	0.01 ¹
Total annual fund operating expenses	0.94²	1.14²	0.89²
Contractual expense reimbursement	-0.01 ³	-0.01 ³	-0.01 ³
Total annual fund operating expenses after expense reimbursements	0.93	1.13	0.88

- 1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- 2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- 3 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	95	115	90
3 years	299	361	283
5 years	519	627	492
10 years	1,154	1,385	1,095

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 89% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in fixed income instruments. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) Fixed income instruments include, but are not limited to the following securities, which may be denominated in U.S. dollars or foreign currencies: sovereign debt,

Fund summary

inflation-linked bonds, corporate and high yield credit (also known as “junk bonds”), securitized debt, bank loans and floating rate loans and emerging markets debt, convertible and hybrid securities. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risks of being a lender.

In order to achieve its investment objective, the manager seeks to:

- invest across multiple asset types, geographies, credit tiers, and time horizons;
- provide timely and dynamic exposure to a portfolio of global fixed income securities consisting of sovereign debt, inflation-linked bonds, corporate and high yield credit, securitized debt, bank loans and floating rate loans and emerging markets debt, convertible and hybrid securities;
- manage the fund's overall performance volatility within a range as reflected by the Bloomberg Global Aggregate Bond Index hedged to USD over the medium to long-term;
- generate total returns through three main approaches: strategic sector positioning, market-neutral strategies, and tactical asset allocation:
- the strategic sector component of the portfolio provides exposure to non-core investment opportunities (e.g. emerging markets debt, high yield credit, bank loans etc.) that are designed to capture the repricing of long-term structural themes in the business cycle;
- the market neutral component of the portfolio is primarily expressed via relative value positioning, aimed at providing incremental return with low correlation to the direction of global fixed income markets. Market neutral positions are typically taken on interest rates, currencies, corporate and high yield credit, and emerging market debt positions; and
- tactical asset allocation is used to capture both short and medium term dislocations in the market. Tactical opportunities are primarily expressed via sector rotation, country selection, security selection, currency management strategies and duration management strategies.
- combine the three approaches noted above in a holistic manner while managing aggregate portfolio risk.

The fund may invest in securities that at times may have equity-like characteristics including, but not limited to convertible securities or preferred equity. Additionally, the fund may hold equities received as part of a corporate action. The fund also may hold all or a portion of its assets in cash, money market instruments, bonds or other debt securities for defensive or other purposes. The fund may engage in active trading and may have a high portfolio turnover rate.

The fund makes significant use of derivative instruments and may take both long and short positions in securities. Derivatives may be used for purposes of hedging and/or efficient portfolio management and/or investment purposes. Derivatives may be exchange-traded or over-the-counter and may include futures contracts, options, credit default swaps, foreign currency swaps, interest rate swaps, total return swaps and foreign currency forward contracts. In its use of derivatives, the fund aims to contribute to the target return and the volatility strategies of the fund. The use of derivative instruments as part of the investment strategy means that the fund may, from time to time, have substantial holdings in liquid assets, including deposits and money market instruments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance. Additionally, the value of inflation-indexed securities is subject to the effects of changes in market interest rates caused by factors other than inflation ("real interest rates"). Generally, when real interest rates rise, the value of inflation-indexed securities will fall and the fund's value may decline as a result of this exposure to these securities.

Floating rate loans risk. Floating rate loans are generally rated below investment-grade and are generally considered speculative because they present a greater risk of loss, including default, than higher quality debt instruments.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps, foreign currency forward contracts, foreign currency swaps, futures contracts, interest-rate swaps, options, options on futures, swaps, and total return swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

LIBOR discontinuation risk. The official publication of the London Interbank Offered Rate (LIBOR), which many debt securities, derivatives and other financial instruments traditionally utilized as the reference or benchmark rate for interest rate calculations, was discontinued as of June 30, 2023. However, a subset of LIBOR settings will continue to be published on a "synthetic" basis. The synthetic publication of the one-, three- and six-month U.S. dollar LIBOR will continue until September 30, 2024. The discontinuation of LIBOR and a transition to replacement rates may lead to volatility and illiquidity in markets and may adversely affect the fund's performance.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting

Fund summary

issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

Past performance

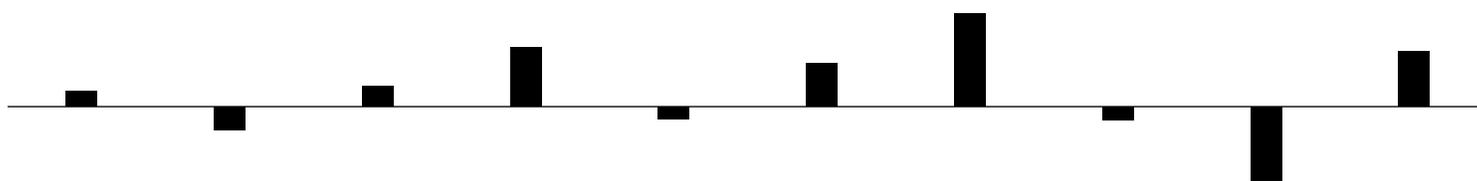
The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

A note on performance

Prior to February 28, 2020, the fund was managed by a different subadvisor pursuant to different investment strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor. The fund's performance shown below might have differed materially had the current subadvisor managed the fund prior to February 28, 2020.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2.28	-3.50	3.05	8.75	-1.90	6.38	13.79	-2.02	-11.12	8.23



Best quarter:	Q2 2020	10.08%
Worst quarter:	Q1 2022	-8.04%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	8.23	2.67	2.16
Series II	7.97	2.45	1.96
Series NAV	8.21	2.72	2.22
Bloomberg Global Aggregate Bond (USD Hedged) Index (reflects no deduction for fees, expenses, or taxes)	7.15	1.40	2.42

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Brian M. Garvey
Senior Managing Director and
Portfolio Manager
Managed fund since 2020

Brij S. Khurana
Senior Managing Director and
Portfolio Manager
Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Real Estate Securities Trust

Investment objective

To seek to achieve a combination of long-term capital appreciation and current income.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.70	0.70	0.70
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.07	0.07	0.07
Total annual fund operating expenses	0.82	1.02	0.77
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.81	1.01	0.76

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	83	103	78
3 years	261	324	245
5 years	454	562	427
10 years	1,013	1,247	953

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 106% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities of real estate investment trusts ("REITs") and real estate companies. Equity securities include common stock, preferred stock and securities convertible into common stock.

Fund summary

A company is considered to be a real estate company if the Global Industry Classification Standards (or some other common industry accepted sector or industry classification schema) includes the company within its Real Estate sector or Hotels, Restaurants & Leisure Industry or Homebuilding sub-industry.

The manager looks for real estate securities it believes will provide superior returns to the fund, and attempts to focus on companies with the potential for stock price appreciation and a record of paying dividends.

The manager's approach to real estate investing is based on a bottom-up analysis of factors affecting individual securities, combined with a top-down analysis of the real estate market. The manager believes that property markets overly discount and extrapolate short-term events and that a research-intensive and long-term focus are the keys to sustainable alpha generation. By focusing on multiple valuation metrics and leveraging the analytical resources at both the team and firm level, the manager is able to identify short-term dislocations between stock prices and fundamentals, and ultimately invest in what the manager believes are long-term winners at below market valuations. The bottom-up research coupled with top-down trends in the property markets allow the manager to effectively capture inflection points and own companies with dominant and improving market positions before their true value is recognized by the broader investment community.

A REIT invests primarily in income-producing real estate or makes loans to persons involved in the real estate industry.

Some REITs, called equity REITs, buy real estate and pay investors income from the rents received from the real estate owned by the REIT and from any profits on the sale of its properties. Other REITs, called mortgage REITs, lend money to building developers and other real estate companies and pay investors income from the interest paid on those loans. There are also hybrid REITs which engage in both owning real estate and making loans.

If a REIT meets certain requirements, it is not taxed on the income it distributes to its investors.

The fund may realize some short-term gains or losses if the manager chooses to sell a security because it believes that one or more of the following is true:

- A security is not fulfilling its investment purpose;
- A security has reached its optimum valuation; or
- A particular company or general economic conditions have changed.

Based on its recent practices, the manager expects that the fund's assets will be invested primarily in equity REITs. In changing market conditions, the fund may invest in other types of REITs.

When the manager believes that it is prudent, the fund may invest a portion of its assets in other types of securities. These securities may include convertible securities, short-term securities, bonds, notes, securities of companies not principally engaged in the real estate industry, non-leveraged stock index futures contracts and other similar securities. (Stock index futures contracts can help the fund's cash assets remain liquid while performing more like stocks.)

The fund may invest up to 10% of its total assets in securities of foreign real estate companies.

The fund is a non-diversified fund, which means that it may invest in a smaller number of issuers than a diversified fund and may invest more of its assets in the securities of a single issuer. The fund concentrates its investments in securities of issuers in the real estate industry.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Concentration risk. Because the fund may focus on one or more industries or sectors of the economy, its performance depends in large part on the performance of those industries or sectors. As a result, the value of an investment may fluctuate more widely since it is more susceptible to market, economic, political, regulatory, and other conditions and risks affecting those industries or sectors than a fund that invests more broadly across industries and sectors. A downturn in the real estate industry may significantly detract from performance.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts. Futures contracts generally are subject to counterparty risk.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Non-diversified risk. Adverse events affecting a particular issuer or group of issuers may magnify losses for non-diversified funds, which may invest a large portion of assets in any one issuer or a small number of issuers.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Real estate securities risk. Securities of companies in the real estate industry carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

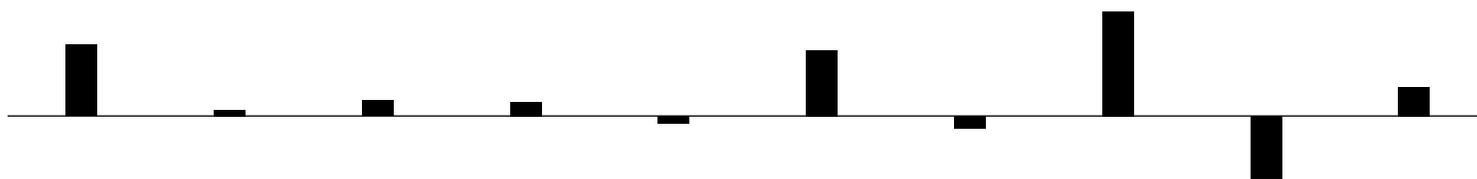
Fund summary

A note on performance

Prior to November 16, 2020, the fund was managed by a different subadvisor pursuant to different investment strategies, and thus, the performance presented prior to this date should not be attributed to the current subadvisor. The fund's performance shown below might have differed materially had the current subadvisor managed the fund prior to November 16, 2020.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
31.73	2.68	6.92	6.24	-3.46	29.40	-5.64	46.79	-28.51	13.02



Best quarter:	Q4 2021	17.19%
Worst quarter:	Q1 2020	-22.97%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.02	7.69	7.94
Series II	12.80	7.47	7.73
Series NAV	13.06	7.74	8.00
Dow Jones U.S. Select REIT Index (reflects no deduction for fees, expenses, or taxes)	13.96	6.12	7.00

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Bradford D. Stoesser

Senior Managing Director and Equity Portfolio Manager

Managed fund since 2020

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Science & Technology Trust

Investment objective

To seek long-term growth of capital. Current income is incidental to the fund's objective.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.95	0.95	0.95
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	1.05	1.25	1.00
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.04	1.24	0.99

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	106	126	101
3 years	333	396	317
5 years	578	685	551
10 years	1,282	1,510	1,224

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 208% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in the common stocks of companies expected to benefit from the development, and/or use of science and/or technology. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) For purposes of satisfying this requirement, common stock may include equity-linked notes and derivatives relating to common stocks, such as options on equity-linked notes.

Some industries likely to be represented in the fund include:

Fund summary

- information technology including hardware, software, semiconductors and technology equipment
 - telecommunications equipment and services
 - media including advertising, broadcasting, cable and satellite, movies, entertainment, publishing and information services
 - environmental services
 - internet commerce and advertising
 - life sciences and health care, including pharmaceuticals, health care equipment and services, and biotechnology
 - chemicals and synthetic materials
 - defense and aerospace
 - alternative energy
- While most of the fund's assets are invested in U.S. common stocks, the fund may also purchase other types of securities, including U.S. dollar- and foreign currency-denominated foreign securities, convertible stocks and bonds, and warrants, and use futures and options, in keeping with the fund's investment objectives. Stock selection for the fund generally reflects a growth approach based on an assessment of a company's fundamental prospects for above-average earnings, rather than on a company's size. As a result, fund holdings can range from securities of small companies developing new technologies to securities of blue chip firms with established track records. The fund may also invest in companies that are expected to benefit from technological advances even if they are not directly involved in research and development. The fund may invest in suitable companies through initial public offerings (IPOs). The fund holds a certain portion of its assets in money market reserves, which can consist of shares of certain internal T. Rowe Price money market funds as well as U.S. dollar and foreign currency-denominated money market securities, including repurchase agreements, in the two highest rating categories, maturing in one year or less. The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivative which can combine the characteristics of securities, futures and options. Such securities may bear interest or pay dividends at below market (or even relatively nominal) rates. In pursuing the fund's investment objective, a subadvisor has the discretion to purchase some securities that do not meet its normal investment criteria, as described above, when it perceives an unusual opportunity for gain. These special situations might arise when a subadvisor believes a security could increase in value for a variety of reasons including a change in management, an extraordinary corporate event, a new product introduction or a favorable competitive development.

The fund may sell securities for a variety of reasons, including to realize gains, limit losses, or redeploy assets into more promising opportunities.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Greater China risk. Investments in the Greater China region may be subject to less developed trading markets, acute political risks such as possible negative repercussions resulting from China's relationship with Taiwan or Hong Kong, and restrictions on monetary repatriation or other adverse government actions. For example, a government may restrict investment in companies or industries considered important to national interests, or intervene in the financial markets, such as by imposing trading restrictions, or banning or curtailing short selling. A small number of companies and industries may generally represent a relatively large portion of the Greater China market as a whole.

Hong Kong Stock Connect Program (Stock Connect) risk. Trading in China A-Shares through Stock Connect, a mutual market access program that enables foreign investment in the People's Republic of China (PRC), is subject to certain restrictions and risks. Securities listed on Stock Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Stock Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Stock Connect may affect China A-Share prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Healthcare sector risk. Health sciences companies may be significantly affected by product obsolescence, thin capitalization, limited product lines and markets, civil liability claims, and legislative or regulatory activities, among other factors.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the notes' issuer, may be privately placed, and may have a limited secondary market), and options. Futures contracts and options generally are subject to counterparty risk.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Media and communications sector risk. Media and communications companies may be significantly affected by product and service obsolescence due to technological advancement or development, competitive pressures, substantial capital requirements, fluctuating demand, and changes in regulation.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Fund summary

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Telecommunications sector risk. Telecommunication services companies are subject to government regulation of services and rates of return and can be significantly affected by intense competition, among other factors.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

Past performance

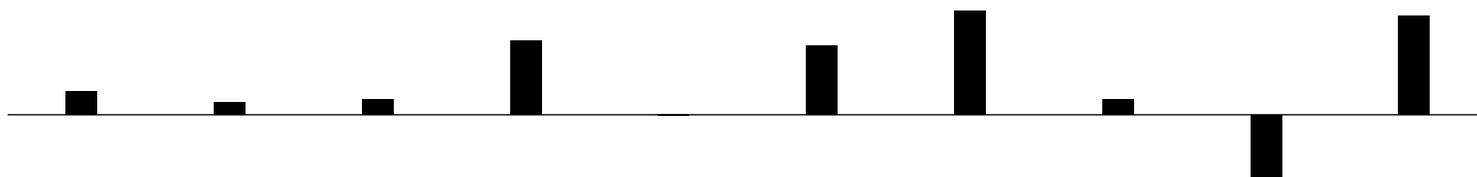
The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The S&P North American Technology Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

A note on performance

Effective June 23, 2022, T. Rowe Price Associates, Inc. (T. Rowe Price) became the fund's sole subadvisor. Prior to June 23, 2022, the fund was managed by both T. Rowe Price and a different subadvisor. The performance presented prior to June 23, 2022 should not be attributed to the sole management of the fund by T. Rowe Price. The fund's performance shown below might have differed materially had T. Rowe Price solely managed the fund prior to June 23, 2022.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
12.89	6.69	8.39	41.13	-0.61	38.06	57.46	8.53	-35.67	54.68



Best quarter:	Q2 2020	33.24%
Worst quarter:	Q2 2022	-23.02%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	54.68	18.61	15.70
Series II	54.37	18.38	15.48
Series NAV	54.73	18.67	15.76
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
S&P North American Technology Index (reflects no deduction for fees, expenses, or taxes)	61.13	22.22	18.72

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Anthony Wang

Vice President

Managed fund since 2023

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Select Bond Trust

Investment objective

To seek income and capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.57	0.57	0.57
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.04	0.04	0.04
Total annual fund operating expenses	0.66	0.86	0.61
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.65	0.85	0.60

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	66	87	61
3 years	210	273	194
5 years	367	476	339
10 years	822	1,060	761

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 146% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in a diversified mix of debt securities and instruments. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund seeks to invest its assets in debt securities and instruments with an average duration of plus or minus one year of its benchmark, Bloomberg US Aggregate Bond Index, however, there is no limit on the fund's average maturity. The fund does not invest in bonds rated below investment-grade at time of purchase.

Fund summary

Eligible investments include, but are not limited to:

- U.S. Treasury and agency securities as well as notes backed by the Federal Deposit Insurance Corporation,
- Mortgage-backed securities, including mortgage pass-through securities, commercial mortgage-backed securities (“CMBS”) and collateralized mortgage obligations (“CMOs”),
- U.S. and foreign corporate bonds, and
- Foreign government and agency securities.

The subadvisor uses proprietary research and economic and industry analysis to identify specific bonds, bond sectors and industries that are attractively priced. Due to this process, the fund may have a higher than average portfolio turnover ratio which may affect performance results.

The foreign securities in which the fund invests may be denominated in U.S. dollars or foreign currency.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under “Additional Information About the Funds’ Principal Risks — Hedging, derivatives and other strategic transactions risk” including, but not limited to, U.S. Treasury futures and options, index derivatives, credit default swaps and forwards.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund’s volatility and could produce disproportionate losses, potentially more than the fund’s principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps; foreign currency forward contracts; foreign currency swaps; futures contracts; interest-rate swaps; options on futures; options, swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associates with their underlying securities, depends on the credit of the note’s issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund’s ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund’s net asset value per share (NAV).

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Fund summary

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

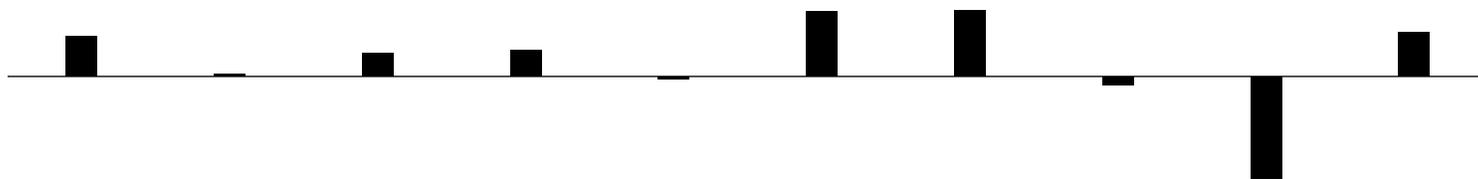
U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.59	0.29	3.19	3.65	-0.38	9.01	9.14	-1.15	-14.16	6.15



Best quarter:	Q4 2023	6.90%
Worst quarter:	Q1 2022	-6.10%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	6.10	1.34	1.86
Series II	5.88	1.13	1.67
Series NAV	6.15	1.39	1.92
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Jeffrey N. Given, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2009

Howard C. Greene, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2009

Pranay Sonalkar, CFA

Portfolio Manager
Managed fund since 2021

Connor Minnaar, CFA

Portfolio Manager
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Short Term Government Income Trust

Investment objective

To seek a high level of current income consistent with preservation of capital. Maintaining a stable share price is a secondary goal.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.57	0.57	0.57
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.11	0.11	0.11
Total annual fund operating expenses	0.73	0.93	0.68
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.72	0.92	0.67

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	74	94	68
3 years	232	295	217
5 years	405	514	378
10 years	906	1,142	846

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 108% of the average value of its portfolio.

Principal investment strategies

The fund seeks to achieve its investment objective by investing under normal circumstances at least 80% of its net assets in obligations issued or guaranteed by the U.S. government and its agencies, authorities or instrumentalities (U.S. government securities). Under normal circumstances, the fund's effective duration is no more than three years.

U.S. government securities may be supported by:

Fund summary

- The full faith and credit of the United States government, such as Treasury bills, notes and bonds, and Government National Mortgage Association Certificates.
- The right of the issuer to borrow from the U.S. Treasury, such as obligations of the Federal Home Loan Mortgage Corporation.
- The credit of the instrumentality, such as obligations of the Federal National Mortgage Association.

The fund may invest in higher-risk securities, including U.S. dollar-denominated foreign government securities and asset-backed securities. It may also invest up to 10% of its net assets in foreign government high-yield securities (junk bonds) rated as low as B and their unrated equivalents.

In managing the portfolio of the fund, the subadvisor considers interest rate trends to determine which types of bonds to emphasize at a given time. The fund typically favors mortgage-related securities when it anticipates that interest rates will be relatively stable, and favors U.S. Treasuries at other times. Because high yield bonds often respond to market movements differently from U.S. government bonds, the fund may use them to manage volatility.

The fund may invest in mortgage-related securities and Treasury futures to protect against adverse changes and manage risks.

The fund may invest in other investment companies, including exchange traded funds (“ETFs”), and engage in short sales.

Under normal circumstances, the fund's effective duration is no more than three years which means that the fund may purchase securities with a duration of greater than three years, as long as the fund's average duration does not exceed three years.

The fund may trade securities actively which could increase transaction costs (thus lowering performance).

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options, credit default swaps, foreign currency swaps, interest-rate swaps, swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depends on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to

Fund summary

dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Short sales risk. Short sales involve costs and risk. A fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

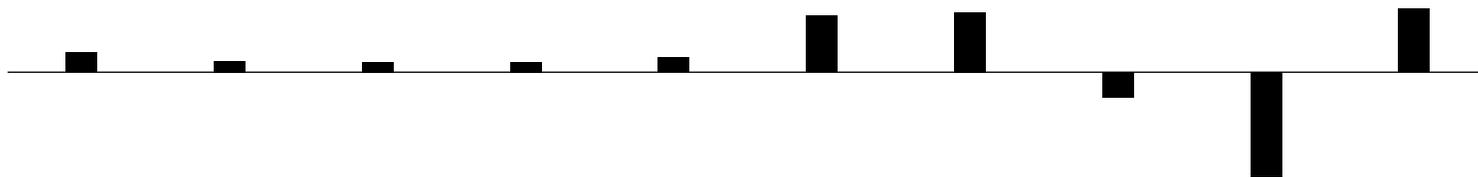
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1.20	0.69	0.62	0.62	0.89	3.44	3.65	-1.54	-6.43	3.87



Best quarter:	Q4 2023	3.12%
Worst quarter:	Q1 2022	-3.45%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	3.92	0.48	0.62
Series II	3.63	0.27	0.41
Series NAV	3.87	0.51	0.66

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Howard C. Greene, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2008

Jeffrey N. Given, CFA

Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income
Managed fund since 2008

Connor Minnaar, CFA

Portfolio Manager
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other

Fund summary

investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Small Cap Index Trust

Investment objective

Seeks to approximate the aggregate total return of a small cap U.S. domestic equity market index.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.48	0.48	0.48
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	0.59	0.79	0.54
Contractual expense reimbursement	-0.06 ¹	-0.06 ¹	-0.06 ¹
Total annual fund operating expenses after expense reimbursements	0.53	0.73	0.48

1 The advisor contractually agrees to reduce its management fee by an annual rate of 0.05% of the fund's average daily net assets. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	54	75	49
3 years	183	246	167
5 years	323	433	296
10 years	732	972	671

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 11% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) at the time of investment in: (a) the common stocks that are included in the Russell 2000 Index; and (b) securities (which may or may not be included in the Russell 2000 Index) that the subadvisor believes as a group will behave in a manner similar to the index. (The fund will provide written notice to shareholders at least 60 days

Fund summary

prior to a change in its 80% investment policy.) As of February 29, 2024, the market capitalizations of companies included in the Russell 2000 Index ranged from \$23.1 million to \$48.4 billion.

An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indexes may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. In contrast to actively managed funds, which seek to outperform their respective benchmark indexes through research and analysis, index funds are passively managed funds that seek to mirror the performance of their target indexes, minimizing performance differences over time. The fund attempts to track the performance of the Russell 2000 Index by: (a) holding all, or a representative sample, of the securities that comprise that index; and/or (b) by holding securities (which may or may not be included in the index) that the subadvisor believes as a group will behave in a manner similar to the index. However, the fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index closely, typically will be unable to match the performance of the target index exactly. The composition of an index changes from time to time, and the subadvisor will reflect those changes in the composition of the fund's portfolio as soon as practicable.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

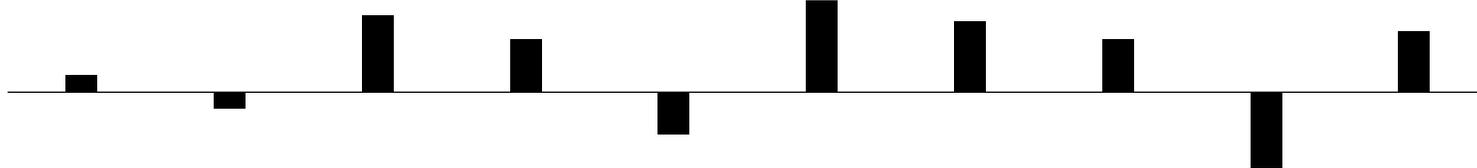
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
4.59	-4.58	20.98	14.39	-11.42	25.04	19.29	14.49	-20.65	16.49



Best quarter:	Q4 2020	31.14%
Worst quarter:	Q1 2020	-30.72%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	16.49	9.56	6.80
Series II	16.22	9.33	6.59
Series NAV	16.52	9.60	6.85
Russell 2000 Index (reflects no deduction for fees, expenses, or taxes)	16.93	9.97	7.16

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (North America) Limited

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Ashikhusein Shahpurwala, CFA, PRM

Senior Portfolio Manager

Managed fund since 2013

Boncana Maiga, CFA, CIM

Portfolio Manager

Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other

Fund summary

investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Small Cap Opportunities Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	1.00	1.00	1.00
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	1.15	1.35	1.10
Contractual expense reimbursement	-0.26 ¹	-0.26 ¹	-0.26 ¹
Total annual fund operating expenses after expense reimbursements	0.89	1.09	0.84

1 The advisor contractually agrees to waive its management fee so that the amount retained by the advisor after payment of subadvisory fees does not exceed 0.45% of the fund's average daily net assets. The current expense limitation agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	91	111	86
3 years	340	402	324
5 years	608	715	581
10 years	1,374	1,601	1,317

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 18% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in equity securities of small-capitalization companies. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) The fund has two subadvisors: Dimensional Fund Advisors LP ("Dimensional") and GW&K Investment Management, LLC ("GW&K"). The Advisor to the

Fund summary

fund, John Hancock Variable Trust Advisers LLC, may allocate fund assets between Dimensional and GW&K without restriction. Each subadvisor's investment strategy is described below.

Dimensional

Dimensional will manage its portion of the fund's assets (the "Dimensional Subadvised Assets") as follows:

Dimensional generally will invest the Dimensional Subadvised Assets, using a market capitalization weighted approach, in a broad and diverse group of readily marketable securities of U.S. small and mid cap companies traded on a U.S. national securities exchange that Dimensional determines to be value stocks with higher profitability at time of purchase. A company's market capitalization is the number of its shares outstanding times its price per share. See "Market Capitalization Weighted Approach" below. An equity issuer is considered to have a low relative price (i.e., a value stock) primarily because it has a low price in relation to its book value. In assessing relative price, Dimensional may consider additional factors, such as price-to-cash flow or price-to-earnings ratios. The criteria Dimensional uses for assessing relative price are subject to change from time to time. As of the date of this Prospectus, Dimensional generally considers for investment companies whose market capitalizations are generally smaller than the 500th largest U.S. company. Dimensional does not intend to purchase or sell securities based on the prospects for the economy, the securities markets or the individual issuers whose shares are eligible for purchase.

Dimensional may sell portfolio securities when the issuer's market capitalization increases to a level that exceeds that of the issuer with the largest market capitalization that is then eligible for investment by the Dimensional Subadvised Assets. In addition, Dimensional may sell portfolio securities when their price-to-book ratios rise above those of the security with the highest such ratio that is then eligible for purchase by the Dimensional Subadvised Assets. However, Dimensional may retain securities of issuers with relatively larger market capitalizations for longer periods, despite an increase in the issuers' price-to-book ratios.

The total market capitalization ranges, and the value criteria used by Dimensional for the Dimensional Subadvised Assets, as described above, generally apply at the time of purchase. Dimensional will not be required to dispose of a security if the security's issuer is no longer within the total market capitalization range or does not meet current value criteria. Securities that do meet the market capitalization and/or value criteria nevertheless may be sold at any time when, in Dimensional's judgment, circumstances warrant their sale.

Dimensional may use derivatives such as futures contracts and options on futures contracts, to increase or decrease equity market exposure based on actual or expected cash inflows to or outflows from the fund. Dimensional may enter into futures contracts and options on futures contracts for U.S. equity securities and indices. Dimensional may also invest in exchange-traded funds ("ETFs") and similarly structured pooled investments for the purpose of gaining exposure to the U.S. equity markets while maintaining liquidity. In addition to money market instruments and other short-term investments, the fund may invest in affiliated and unaffiliated unregistered money market funds to manage the fund's cash pending investment in other securities or to maintain liquidity for the payment of redemptions or other purposes. Investments in ETFs and money market funds may involve a duplication of certain fees and expenses.

Market Capitalization Weighted Approach

The strategy used by Dimensional in managing the Dimensional Subadvised Assets involves market capitalization weighting in determining individual security weights. Market capitalization weighting means each security is generally purchased based on the issuer's relative market capitalization.

Market capitalization weighting may be modified by Dimensional for a variety of reasons. Dimensional may adjust the representation in the Dimensional Subadvised Assets of an eligible company, or exclude a company, after considering such factors as free float, price momentum, short-run reversals, trading strategies, liquidity, size, relative price, profitability, investment characteristics and other factors determined to be appropriate. An equity issuer is considered to have a low relative price (i.e., a value stock) primarily because it has a low price in relation to its book value. In assessing relative price, Dimensional considers additional factors such as price to cash flow or price to earnings ratios. In assessing profitability, Dimensional considers different ratios, such as that of earnings or profits from operations relative to book value or assets. In assessing a company's investment characteristics, Dimensional considers ratios such as recent changes in assets divided by total assets. The criteria Dimensional uses for assessing relative price, profitability and investment characteristics are subject to change from time to time.

Dimensional may deviate from market capitalization weighting to limit or fix the exposure of the Dimensional Subadvised Assets to a particular issuer to a maximum proportion of the assets of the Dimensional Subadvised Assets. Dimensional may exclude the stock of a company that meets applicable market capitalization criteria if Dimensional determines, in its judgment, that the purchase of such stock is inappropriate in light of other conditions. The subadvisor may decrease the allocation of the fund's assets to eligible small capitalization companies that generally have lower profitability and/or higher relative prices. These adjustments will result in a deviation from traditional market capitalization weighting.

GW&K

GW&K will manage its portion of the fund's assets as follows:

GW&K utilizes fundamental research and bottom-up stock selection to identify undervalued small cap companies with sustainable earnings growth, and whose management is focused on enhancing value for shareholders. GW&K seeks to hold securities for the long term.

Fund summary

GW&K focuses on quality small-cap companies with sound management and long-term sustainable growth, regardless of style. In selecting companies, GW&K looks for firms with the following key attributes:

- Experienced, tenured, high-quality management;
- Business models that deliver consistent long-term growth;
- Leading companies in attractive and defensible niche markets;
- Strong financial characteristics; and
- Appropriate valuation.

Various factors may lead GW&K to consider selling a particular security, such as a significant change in the relevant company's senior management or its products, deterioration in its fundamental characteristics, if the company has corporate governance issues, or if GW&K believes that the security has become overvalued.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, options on futures and options. Futures contracts and options generally are subject to counterparty risk.

Industrials sector risk. Companies in the industrials sector may be affected by general economic conditions, commodity production and pricing, supply and demand fluctuations, environmental and other government regulations, geopolitical events, interest rates, insurance costs, technological developments, liabilities arising from governmental or civil actions, labor relations, input controls, and government spending.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Fund summary

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

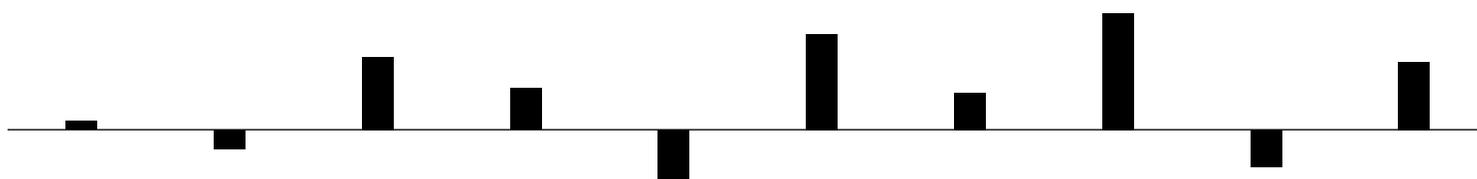
Value investment style risk. Value securities, as a category, may underperform other segments of the market or the market as a whole and following a value-oriented investment strategy may cause the fund, at times, to underperform equity funds that employ a different investment style.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The Russell 2000 Value Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2.38	-5.17	19.47	11.07	-13.84	25.54	9.88	31.10	-10.07	18.05



Best quarter:	Q4 2020	30.49%
Worst quarter:	Q1 2020	-35.31%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	18.05	13.93	7.86
Series II	17.83	13.70	7.64
Series NAV	18.12	13.99	7.92
Russell 2000 Index (reflects no deduction for fees, expenses, or taxes)	16.93	9.97	7.16
Russell 2000 Value Index (reflects no deduction for fees, expenses, or taxes)	14.65	10.00	6.76

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Dimensional Fund Advisors LP

Subadvisor GW&K Investment Management, LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Fund summary

Jed S. Fogdall

Global Head of Portfolio Management, Senior Portfolio Manager and Vice President Dimensional Fund Advisors LP
Managed fund since 2012

Marc C. Leblond

Senior Portfolio Manager and Vice President Dimensional Fund Advisors LP
Managed fund since 2020

Joel P. Schneider

Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President Dimensional Fund Advisors LP
Managed fund since 2015

Joseph C. Craigen, CFA

Partner and Equity Portfolio Manager GW&K Investment Management, LLC
Managed fund since 2017

Daniel L. Miller, CFA

Partner and Director of Equities GW&K Investment Management, LLC
Managed fund since 2017

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Small Cap Stock Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	1.01	1.01	1.01
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.08	0.08	0.08
Total annual fund operating expenses	1.14	1.34	1.09
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.13	1.33	1.08

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	115	135	110
3 years	361	424	346
5 years	627	733	600
10 years	1,385	1,612	1,328

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 41% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in stocks of small cap companies. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) For the purposes of the fund, "small cap companies" are those with market capitalizations, at the time of investment, not exceeding the maximum market capitalization of any company represented in either the Russell 2000 Index (approximately \$48.4 billion as of February 29, 2024) or the S&P Small Cap 600 Index (approximately \$8 billion as of February 29, 2024).

Fund summary

The fund invests in small-cap companies that are believed to offer above-average potential for growth in revenues and earnings. Market capitalizations of companies in the indices change over time; however, the fund will not sell a security just because a company has grown to a market capitalization outside the maximum range of the indices.

The subadvisor selects stocks using a combination of quantitative screens and bottom-up, fundamental security research. Quantitative screening seeks to narrow the list of small capitalization companies and to identify a group of companies with strong revenue growth and accelerating earnings. Fundamental equity research seeks to identify individual companies from that group with a higher potential for earnings growth and capital appreciation.

The subadvisor looks for companies based on a combination of criteria including one or more of the following:

- Improving market shares and positive financial trends;
- Superior management with significant equity ownership; and
- Attractive valuations relative to earnings growth outlook.

The fund is likely to experience periods of higher turnover in portfolio securities because the subadvisor frequently adjusts the selection of companies and/or their position size based on these criteria. The fund's sector exposures are broadly diversified, but are primarily a result of stock selection and therefore may vary significantly from its benchmark. The fund may invest up to 25% of its total assets in foreign securities, including emerging market securities. The fund may invest significantly in the information technology sector.

Except as otherwise stated under "Additional Information About the Funds — Temporary Defensive Investing," the fund normally has 10% or less (usually lower) of its total assets in cash and cash equivalents.

The fund may invest in Initial Public Offerings (IPOs). The fund may also purchase each of the following types of securities:

U.S. dollar-denominated foreign securities and certain exchange-traded funds (ETFs).

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Healthcare sector risk. Health sciences companies may be significantly affected by product obsolescence, thin capitalization, limited product lines and markets, civil liability claims, and legislative or regulatory activities, among other factors.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Fund summary

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

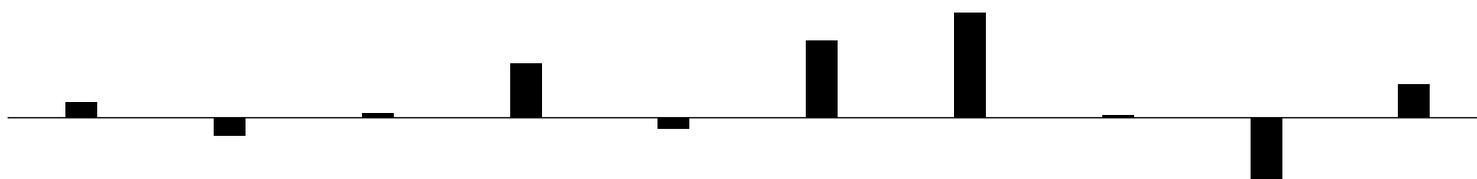
Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
7.60	-8.78	2.27	26.70	-5.22	38.10	51.62	1.27	-31.13	16.31



Best quarter:	Q2 2020	38.05%
Worst quarter:	Q1 2020	-25.00%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	16.10	11.10	7.37
Series II	15.89	10.90	7.16
Series NAV	16.31	11.18	7.43
Russell 2000 Growth Index (reflects no deduction for fees, expenses, or taxes)	18.66	9.22	7.16

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Ranjit Ramachandran, CFA

Managing Director and Equity Portfolio Manager

Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Small Cap Value Trust

Investment objective

To seek long-term capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.94	0.94	0.94
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.06	0.06	0.06
Total annual fund operating expenses	1.05	1.25	1.00
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	1.04	1.24	0.99

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	106	126	101
3 years	333	396	317
5 years	578	685	551
10 years	1,282	1,510	1,224

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 47% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in small-cap companies that are believed to be undervalued by various measures and offer good prospects for capital appreciation. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) For the purposes of the fund, "small cap companies" are those with market capitalizations, at the time of investment, not exceeding the maximum market capitalization of any company represented in either the Russell 2000 Index (approximately \$48.4 billion as of February 29, 2024) or the S&P SmallCap 600 Index (approximately \$8 billion as of February 29, 2024).

Fund summary

The fund invests primarily in a diversified mix of common stocks of U.S. small-cap companies. The subadvisor employs a value-oriented investment approach in selecting stocks, using proprietary fundamental research to identify stocks the subadvisor believes have distinct value characteristics based on industry-specific valuation criteria. The subadvisor focuses on high quality companies with a proven record of above-average rates of profitability that sell at a discount relative to the overall small-cap market.

Fundamental research is then used to identify those companies demonstrating one or more of the following characteristics:

- Sustainable competitive advantages within a market niche;
- Strong profitability and free cash flows;
- Strong market share positions and trends;
- Quality of and share ownership by management; and
- Financial structures that are more conservative than the relevant industry average.

The fund's sector exposures are broadly diversified, but are primarily a result of stock selection and may, therefore, vary significantly from its benchmark. The fund may invest up to 15% of its total assets in foreign securities (with no more than 5% in emerging market securities). The fund may have significant investments in the financial services sector.

Except as otherwise stated under "Additional Information about the Funds — Temporary Defensive Investing," the fund normally has 10% or less (usually lower) of its total assets invested in cash and cash equivalents.

The fund may invest in initial public offerings ("IPOs"). The fund may also purchase each of the following types of securities: real estate investment trusts ("REITs") or other real estate related equity securities, U.S. dollar-denominated foreign securities and certain exchange-traded funds ("ETFs"). For purposes of the fund, ETFs are considered securities with a market capitalization equal to the weighted average market capitalization of the basket of securities comprising the ETF.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Industrials sector risk. Companies in the industrials sector may be affected by general economic conditions, commodity production and pricing, supply and demand fluctuations, environmental and other government regulations, geopolitical events, interest rates, insurance costs, technological developments, liabilities arising from governmental or civil actions, labor relations, input controls, and government spending.

Initial public offerings (IPOs) risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Fund summary

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Real estate securities risk. Securities of companies in the real estate industry carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

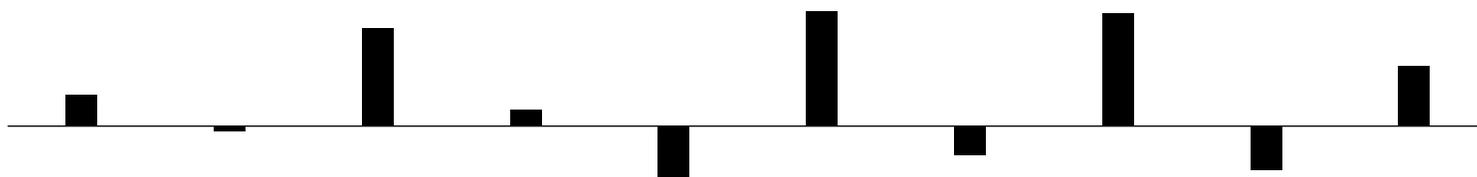
Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
7.25	-1.31	22.68	3.79	-12.45	26.62	-6.68	26.30	-10.25	14.07



Best quarter:	Q4 2020	34.84%
Worst quarter:	Q1 2020	-36.20%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	14.01	8.80	6.02
Series II	13.85	8.58	5.81
Series NAV	14.07	8.85	6.07
Russell 2000 Value Index (reflects no deduction for fees, expenses, or taxes)	14.65	10.00	6.76

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Wellington Management Company LLP

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Shaun F. Pedersen

Senior Managing Director and Equity Portfolio Manager
Managed fund since 2004

Edmond C. Griffin, CFA

Managing Director and Equity Portfolio Manager
Managed fund since 2020

Danielle S. Williams, CFA

Managing Director and Equity Portfolio Manager
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Small Company Value Trust

Investment objective

To seek long-term growth of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	1.05	1.05	1.05
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.11	0.11	0.11
Acquired fund fees and expenses	0.01 ¹	0.01 ¹	0.01 ¹
Total annual fund operating expenses	1.22²	1.42²	1.17²
Contractual expense reimbursement	-0.01 ³	-0.01 ³	-0.01 ³
Total annual fund operating expenses after expense reimbursements	1.21	1.41	1.16

- ¹ “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- ² The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- ³ The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	123	144	118
3 years	386	448	371
5 years	669	775	643
10 years	1,476	1,701	1,419

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 28% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in companies with market capitalizations, at the time of investment, that do not exceed the maximum market capitalization of any security in the Russell 2000 Index (\$23.1 million to \$48.4 billion as of February 29, 2024). (The fund will provide written notice to shareholders at least 60 days prior to a change in its

Fund summary

80% investment policy.) The fund invests in small companies whose common stocks are believed to be undervalued. The market capitalization of the companies in the fund's portfolio and the Russell 2000 Index changes over time, and the fund will not sell a stock just because the company has grown to a market capitalization outside the range. The fund may, on occasion, purchase companies with a market capitalization above the range.

Reflecting a value approach to investing, the fund will seek the stocks of companies whose current stock prices do not appear to adequately reflect their underlying value as measured by assets, earnings, cash flow, or business franchises. The subadvisor's in house research team seeks to identify companies that appear to be undervalued by various measures, and may be temporarily out of favor, but have good prospects for capital appreciation. In selecting investments, they generally look for some of the following factors:

- Low price/earnings, price/book value, or price/cash flow ratios relative to the Russell 2000 Index, a company's peers, or company's historical norm;
- Low stock price relative to a company's underlying asset values;
- Above-average dividend yield relative to a company's peers or its own historic norm;
- A plan to improve the business through restructuring; and/or
- A sound balance sheet and other positive financial characteristics.

While most assets will be invested in U.S. common stocks, including real estate investment trusts (REITs) that pool money to invest in properties and mortgages, the fund may purchase other securities, including foreign securities (up to 20% of its total net assets), futures, and options. The fund may invest in fixed-income and convertible securities without restrictions on quality or rating, including up to 10% of total assets in below-investment-grade fixed-income securities ("junk bonds") and loans. The fund's fixed-income investments may include privately negotiated notes or loans, including loan participations and assignments ("bank loans"). These investments in bank loans will be made only in companies, municipalities or entities that meet the fund's investment criteria. Direct investments in bank loans may be illiquid and holding a loan could expose the fund to the risks of being a direct lender. Since the fund invests primarily in equity securities, the risks associated with fixed-income securities will not affect the fund as much as they would a fund that invests more of its assets in fixed-income securities.

The fund holds a certain portion of its assets in money market reserves, which can consist of shares of certain internal T. Rowe Price money market funds as well as U.S. dollar and foreign currency-denominated money market securities, including repurchase agreements, in the two highest rating categories, maturing in one year or less.

The fund may sell securities for a variety of reasons, including to realize gains, limit losses or redeploy assets into more promising opportunities.

The fund may invest up to 10% of its total assets in hybrid instruments. Hybrid instruments are a type of high-risk derivatives which can combine the characteristics of securities, futures and options. Such securities may bear interest or pay dividends at below (or even relatively nominal) rates. The fund may focus its investments in a particular sector or sectors of the economy.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance.

Convertible securities risk. Convertible securities are subject to certain risks of both equity and debt securities. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. As the market price of underlying common stock declines below the conversion price, the market value of the convertible security tends to be increasingly influenced by its yield.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Securities the manager believes are undervalued may never realize their full potential value, and in certain markets value stocks may underperform the market as a whole.

Financial services sector risk. Financial services companies can be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts and options. Futures contracts and options generally are subject to counterparty risk.

Hybrid instrument risk. Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. Hybrid instruments entail greater market risk and may be more volatile than traditional debt instruments, may bear interest or pay preferred dividends at below-market rates, and may be illiquid. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures, and currencies.

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Investment company securities risk. Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Real estate investment trust (REIT) risk. REITs, pooled investment vehicles that typically invest in real estate directly or in loans collateralized by real estate, carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Real estate securities risk. Securities of companies in the real estate industry carry risks associated with owning real estate, including the potential for a decline in value due to economic or market conditions.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

Fund summary

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

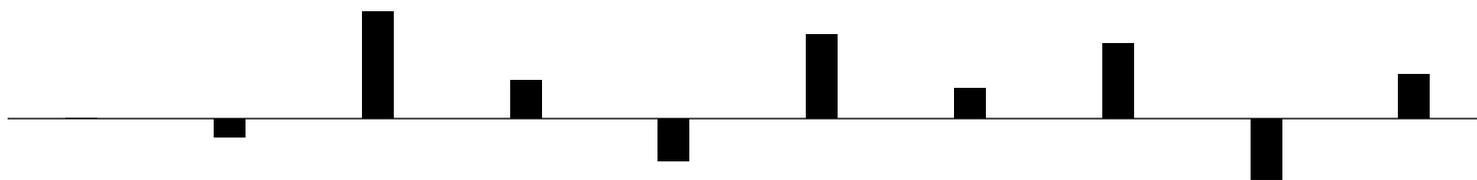
Value investment style risk. Value securities may underperform the market as a whole, which may cause value-oriented funds to underperform equity funds with other investment strategies. Securities the manager believes are undervalued may never perform as expected.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
0.11	-5.60	32.32	11.49	-12.94	25.53	9.24	22.70	-18.73	13.49



Best quarter:	Q4 2020	28.47%
Worst quarter:	Q1 2020	-31.27%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	13.49	9.19	6.54
Series II	13.38	8.99	6.33
Series NAV	13.52	9.25	6.59
Russell 2000 Value Index (reflects no deduction for fees, expenses, or taxes)	14.65	10.00	6.76

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor T. Rowe Price Associates, Inc.

Sub-Subadvisor T. Rowe Price Investment Management, Inc.

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

J. David Wagner, CFA

Vice President

Managed fund since 2014

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Fund summary

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Strategic Equity Allocation Trust

Investment objective

To seek capital appreciation.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.63	0.63	0.63
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05 ¹	0.05 ¹	0.05
Total annual fund operating expenses	0.73	0.93	0.68
Contractual expense reimbursement	-0.01 ²	-0.01 ²	-0.01 ²
Total annual fund operating expenses after expense reimbursements	0.72	0.92	0.67

1 "Other expenses" have been estimated for the first year of operations of the fund's Series I and Series II shares.

2 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	74	94	68
3 years	232	295	217
5 years	405	514	378
10 years	906	1,142	846

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 4% of the average value of its portfolio.

Principal investment strategies

The fund seeks to achieve its investment objective by investing under normal market conditions at least 80% of its net assets (plus any borrowings for investment purposes) in U.S. and foreign equity securities of any market capitalization, including futures on indexes of equity securities. The fund's allocation to various markets and types of securities will be actively managed.

The fund may invest in both developed and emerging markets. The fund's investment in equity securities will vary both with respect to types of securities and markets in response to changing market and economic trends. The precise mix of securities will depend on the subadvisor's outlook for the markets

Fund summary

and generally reflect the subadvisor's strategic asset allocation analysis and its assessment of the relative attractiveness of a particular asset class. When determining whether to invest in a particular market, the subadvisor considers various factors, including economic and political conditions, potential for economic growth and possible changes in currency exchange rates.

The fund also may invest in exchange-traded funds and fixed-income securities, including, but not limited to:

- U.S. Treasury and agency securities as well as notes backed by the Federal Deposit Insurance Corporation,
- U.S. Treasury futures contracts,
- Mortgage-backed securities, including mortgage pass-through securities, commercial mortgage-backed securities ("CMBS") and collateralized mortgage obligations ("CMOs"),
- U.S. and foreign corporate bonds,
- Foreign government and agency securities, and
- Lower Rated Fixed Income Securities and High Yield Securities (also known as "junk bonds").

The foreign securities in which the fund invests may be denominated in U.S. dollars or foreign currency. The fund may actively manage its exposure to foreign currencies through the use of foreign currency forward contracts and other currency derivatives. The fund may own foreign cash equivalents and foreign bank deposits as part of its investment strategy. The fund may invest in foreign currencies for hedging and speculative purposes.

The fund will engage in derivatives transactions, including but not limited to, futures and options contracts, foreign currency forward contracts and swaps including credit default swaps and total return swaps, for hedging and nonhedging purposes including, without limitation, the following purposes:

- to attempt to protect against possible changes in the market value of securities held or to be purchased by the fund resulting from securities markets or currency exchange rate fluctuations,
- to protect the fund's unrealized gains in the value of its securities,
- to facilitate the sale of the fund's securities for investment purposes,
- to manage the effective maturity or duration of the fund's securities,
- to establish a position in the derivatives markets as a method of gaining exposure to a particular security or market,
- to facilitate the repatriation of foreign currency and the settlement of purchases of foreign securities, and
- to increase or decrease exposure to a foreign currency or to shift exposure to foreign currency fluctuations from one country to another.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Foreign currencies may decline in value, which could negatively impact performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions. Growth company securities may fluctuate more in price than other securities because of the greater emphasis on earnings expectations.

Fund summary

Exchange-traded funds (ETFs) risk. The risks of owning shares of an ETF include the risks of owning the underlying securities the ETF holds. Lack of liquidity in an ETF could result in the ETF being more volatile than its underlying securities. An ETF's shares could trade at a significant premium or discount to its net asset value (NAV). A fund bears ETF fees and expenses indirectly.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, options, total return swaps, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

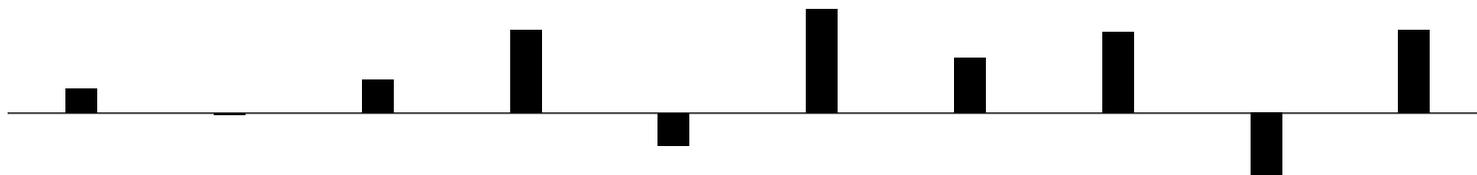
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The 70% Russell 3000 Index/30% MSCI EAFE Index shows how the fund's performance compares against the returns of similar investments. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
6.40	-0.35	8.81	21.77	-8.52	27.15	14.34	21.15	-16.98	21.86



Best quarter:	Q2 2020	19.39%
Worst quarter:	Q1 2020	-22.02%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series NAV	21.86	12.25	8.64
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	26.29	15.69	12.03
70% Russell 3000 Index/30% MSCI EAFE Index (reflects no deduction for fees, expenses, or taxes, except foreign withholding taxes on dividends)	23.64	13.09	9.34

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Nathan W. Thoft, CFA
Chief Investment Officer, Senior Portfolio Manager
Managed fund since 2013

James Robertson, CIM
Head of Asset Allocation, Canada, Head of Tactical Asset Allocation and Senior Portfolio Manager
Managed fund since 2023

Michael J. Comer, CFA
Managing Director and Portfolio Manager
Managed fund since 2023

David J. Rule, CFA, FRM¹
Managing Director and Portfolio Manager
Managed fund since 2023

1 Effective June 6, 2024, David J. Rule, CFA, FRM will no longer serve as a portfolio manager of the fund.

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Strategic Income Opportunities Trust

Investment objective

To seek a high level of current income.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.65	0.65	0.65
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.10	0.10	0.10
Total annual fund operating expenses	0.80	1.00	0.75
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.79	0.99	0.74

¹ The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	81	101	76
3 years	254	317	239
5 years	443	551	416
10 years	989	1,224	929

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 39% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests primarily in the following types of securities: foreign government and corporate debt securities from developed and emerging markets, U.S. government and agency securities, and high-yield bonds.

The fund may also invest in preferred stock and other types of debt securities.

Fund summary

Although the fund may invest up to 10% of its net assets in securities rated as low as D (in default) by S&P Global Ratings (“S&P”) or Moody’s Investors Service, Inc. (“Moody’s”) (or their unrated equivalents) (i.e., “junk bonds”), it seeks to keep its average credit quality in the investment-grade range (AAA to BBB). There is no limit on the fund’s average maturity. The fund’s investment policies are based on credit ratings at the time of purchase.

In managing the fund, the subadvisor allocates assets among the three major types of securities (U.S. government debt and mortgages; corporate debt — primarily high yield; and foreign debt — both government and corporate, including emerging markets) based on analysis of economic factors, such as projected international interest rate movements, industry cycles and political trends. However, the subadvisor may invest up to 100% of the fund’s total assets in any one sector. Within each type of security, the subadvisor looks for investments that are appropriate for the overall fund in terms of yield, credit quality, structure and industry distribution. In selecting securities, relative yields and risk/reward ratios are the primary considerations.

The fund may use certain higher-risk investments, including restricted or illiquid securities and derivatives, which include futures contracts on securities, indices and foreign currency; options on futures contracts, securities, indices and foreign currency; interest rate, foreign currency and credit default swaps; and foreign currency forward contracts, in each case, for the purposes of reducing risk, obtaining efficient market exposure and/or enhancing investment returns. In addition, the fund may invest up to 10% of its net assets in domestic or foreign common stocks.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under “Additional Information About the Funds’ Principal Risks — Hedging, derivatives and other strategic transactions risk” including, but not limited to, U.S. Treasury futures and options, index derivatives, credit default swaps and currency forwards and options.

The manager considers environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of its investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in the fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Asset allocation risk. Although allocation among asset categories generally limits exposure to any one category, the management team may favor a category that performs poorly relative to the others.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Currency risk. Fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund’s investments. Foreign currencies may decline in value, which could negatively impact performance.

Defaulted debt risk. Investing in defaulted debt securities is speculative and involves substantial risks in addition to those of non-defaulted high-yield securities. Defaulted debt securities generally do not generate interest payments. Principal on defaulted debt might not be repaid, and a fund could lose up to its entire investment.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company’s financial condition or overall market conditions.

ESG integration risk. The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing the fund. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The manager may consider these ESG factors on all or a meaningful portion of the fund’s investments. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that the fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets.

Hong Kong Bond Connect Program (Bond Connect) risk. Trading in China bonds through Bond Connect, a mutual market access program that enables foreign investment in the People's Republic of China (PRC), is subject to certain restrictions and risks. Bonds listed on Bond Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Bond Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Bond Connect may affect bond prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Hong Kong Stock Connect Program (Stock Connect) risk. Trading in China A-Shares through Stock Connect, a mutual market access program that enables foreign investment in the People's Republic of China (PRC), is subject to certain restrictions and risks. Securities listed on Stock Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Stock Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Stock Connect may affect China A-Share prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: credit default swaps, foreign currency forward contracts, futures contracts, options on futures contracts, options, interest rate swaps, swaps, foreign currency swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Lower-rated and high-yield fixed-income securities risk. Lower-rated and high-yield fixed-income securities (junk bonds) are subject to greater credit quality risk, risk of default, and price volatility than higher-rated fixed-income securities, may be considered speculative, and can be difficult to resell.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Fund summary

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

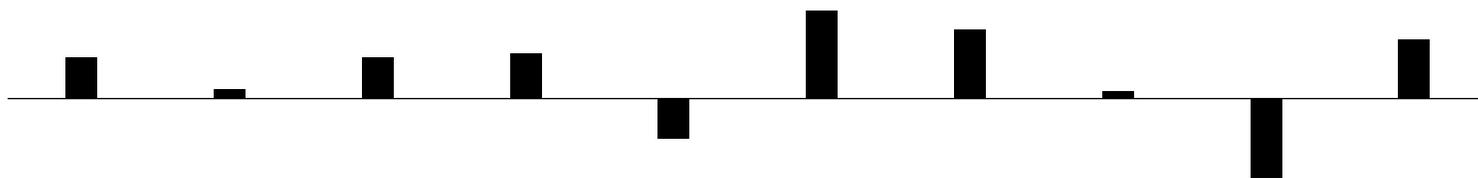
U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5.14	1.22	5.12	5.59	-5.03	10.91	8.59	0.90	-10.06	7.37



Best quarter:	Q2 2020	7.06%
Worst quarter:	Q2 2022	-6.97%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	7.37	3.25	2.79
Series II	7.23	3.06	2.59
Series NAV	7.53	3.31	2.85
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Fund summary

Thomas C. Goggins

Senior Portfolio Manager
Managed fund since 2009

Christopher M. Chapman, CFA

*Senior Portfolio Manager, Co-Head of
Global Multi-Sector Fixed Income*
Managed fund since 2017

Kisoo Park

Senior Portfolio Manager
Managed fund since 2015

Brad Lutz, CFA

Senior Portfolio Manager
Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under “Valuation of shares” in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Total Bond Market Trust

Investment objective

To seek to track the performance of the Bloomberg U.S. Aggregate Bond Index (the “Bloomberg Index”) (which represents the U.S. investment grade bond market).

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.47	0.47	0.47
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Total annual fund operating expenses	0.57	0.77	0.52
Contractual expense reimbursement	-0.27 ¹	-0.27 ¹	-0.27 ¹
Total annual fund operating expenses after expense reimbursements	0.30	0.50	0.25

1 The advisor contractually agrees to reduce its management fee or, if necessary, make payment to the fund in an amount equal to the amount by which expenses of the fund exceed 0.25% of average daily net assets of the fund. For purposes of this agreement, “expenses of the fund” means all fund expenses, excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, (e) class-specific expenses, (f) borrowing costs, (g) prime brokerage fees, (h) acquired fund fees and expenses paid indirectly, and (i) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the advisor and the fund based upon a determination that this is appropriate under the circumstances at that time. The advisor also contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	31	51	26
3 years	155	219	139
5 years	291	401	264
10 years	688	929	627

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 10% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowing for investment purposes) in securities listed in the Bloomberg U.S. Aggregate Bond Index (the Bloomberg Index). (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.)

The fund is an index fund, which differs from actively managed funds. Actively managed funds seek to outperform their respective indices through research and analysis. Over time, their performance may differ significantly from their respective indices. The fund is a passively managed fund that seeks to mirror the performance of its target index, minimizing performance differences over time.

An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indices may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. The fund attempts to track the performance of the Bloomberg Index by holding a representative sample of the securities that comprise the Bloomberg Index. However, an index fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index closely, typically will be unable to match the performance of the target index exactly.

The fund is an intermediate term bond fund of high and medium credit quality that seeks to track the performance of the Bloomberg Index, which broadly represents the U.S. investment grade bond market. The fund's investment policies are based on credit ratings at the time of purchase.

The subadvisor employs a passive management strategy using quantitative techniques to select individual securities that provide a representative sample of the securities in the Bloomberg Index.

The Bloomberg Index consists of U.S. dollar-denominated, fixed rate, investment grade debt securities with maturities generally greater than one year and outstanding par values of at least \$200 million, including:

- U.S. Treasury and agency securities;
- Asset-backed and mortgage-backed securities, including mortgage pass-through securities and commercial mortgage-backed securities ("CMBS") and collateralized mortgage offerings ("CMOs");
- Corporate bonds, both U.S. and foreign (if U.S. dollar-denominated); and
- Foreign government and agency securities (if U.S. dollar-denominated).

The subadvisor selects securities to match, as closely as practicable, the Bloomberg Index's duration, cash flow, sector, credit quality, callability and other key performance characteristics.

The Bloomberg Index composition may change from time to time. The subadvisor will reflect those changes as soon as practicable.

The fund may purchase other types of securities that are not primary investment vehicles. These would include, for example, certain derivatives (investments whose value is based on indexes or other securities) such as futures contracts, interest-rate swaps and options.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use all of the various investment strategies referred to under "Additional Information About the Funds' Principal Risks — Hedging, derivatives and other strategic transactions risk" such as futures contracts, interest-rate swaps and options.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund's securities could affect the fund's performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security's credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: futures contracts, options, interest-rate swaps, foreign currency forward contracts, foreign currency swaps, swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the note's issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

U.S. government agency obligations risk. U.S. government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

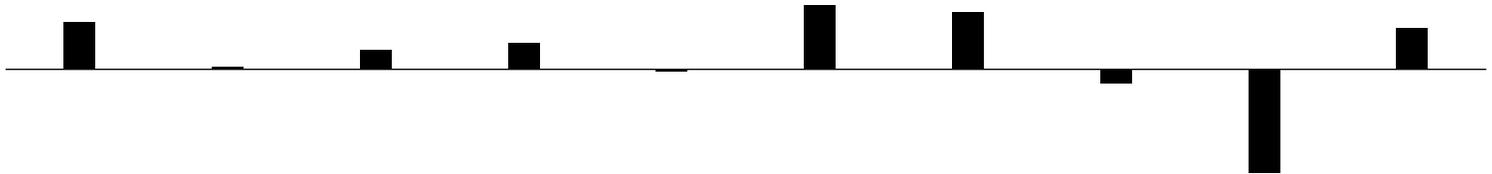
Fund summary

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series NAV

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
6.06	0.30	2.45	3.34	-0.24	8.30	7.39	-1.86	-13.36	5.29



Best quarter:	Q4 2023	6.38%
Worst quarter:	Q1 2022	-6.03%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	5.35	0.76	1.54
Series II	5.02	0.56	1.33
Series NAV	5.29	0.81	1.58
Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses, or taxes)	5.53	1.10	1.81

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individual is primarily responsible for the day-to-day management of the fund's portfolio.

Pranay Sonalkar, CFA

Portfolio Manager

Managed fund since 2023

Connor Minnaar, CFA

Portfolio Manager

Managed fund since 2023

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Total Stock Market Index Trust

Investment objective

Seeks to approximate the aggregate total return of a broad U.S. domestic equity market index.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.48	0.48	0.48
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.05	0.05	0.05
Acquired fund fees and expenses	0.01 ¹	0.01 ¹	0.01 ¹
Total annual fund operating expenses	0.59²	0.79²	0.54²
Contractual expense reimbursement	-0.01 ³	-0.01 ³	-0.01 ³
Total annual fund operating expenses after expense reimbursements	0.58	0.78	0.53

- 1 “Acquired fund fees and expenses” are based on indirect net expenses associated with the fund’s investments in underlying investment companies.
- 2 The “Total annual fund operating expenses” shown may not correlate to the fund’s ratios of expenses to average daily net assets shown in the “Financial highlights” section of the fund’s prospectus, which does not include “Acquired fund fees and expenses.”
- 3 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund’s reimbursement amounted to 0.01% of the fund’s average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund’s operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	59	80	54
3 years	188	251	172
5 years	328	438	301
10 years	737	977	676

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or “turns over” its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund’s performance. During its most recent fiscal year, the fund’s portfolio turnover rate was 2% of the average value of its portfolio.

Principal investment strategies

Under normal market conditions, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) at the time of investment in (a) the common stocks that are included in the Wilshire 5000 Total Market Full Cap Index and (b) securities (which may or may not be included in the Wilshire 5000 Total Market Full Cap Index) that the subadvisor believes as a group will behave in a manner similar to the index. (The fund will provide

Fund summary

written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) As of February 29, 2024, the market capitalizations of companies included in the Wilshire 5000 Total Market Full Cap Index ranged from less than \$2 million to \$3.1 trillion.

An index is an unmanaged group of securities whose overall performance is used as an investment benchmark. Indexes may track broad investment markets, such as the global equity market, or more narrow investment markets, such as the U.S. small cap equity market. In contrast to actively managed funds, which seek to outperform their respective benchmark indexes through research and analysis, index funds are passively managed funds that seek to mirror the performance of their target indexes, minimizing performance differences over time. The fund attempts to match the performance of the Wilshire 5000 Total Market Full Cap Index by: (a) holding all, or a representative sample, of the securities that comprise that index; and/or (b) holding securities (which may or may not be included in the index) that the subadvisor believes as a group will behave in a manner similar to the index. However, the fund has operating expenses and transaction costs, while a market index does not. Therefore, the fund, while it attempts to track its target index closely, typically will be unable to match the performance of the index exactly. The composition of an index changes from time to time, and the subadvisor will reflect those changes in the composition of the fund's portfolio as soon as practicable.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Index management risk. Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's operating expenses and transaction costs, and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Information technology companies risk. Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Quantitative modeling risk. Quantitative models may not accurately predict future market movements or characteristics, which may negatively impact performance. Models also may perform differently than expected due to implementation problems, technological malfunction, or programming or data inaccuracies, among other possible issues.

Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Small and mid-sized company risk. Small and mid-sized companies are generally less established and may be more volatile than larger companies. Small and/or mid-capitalization securities may underperform the market as a whole.

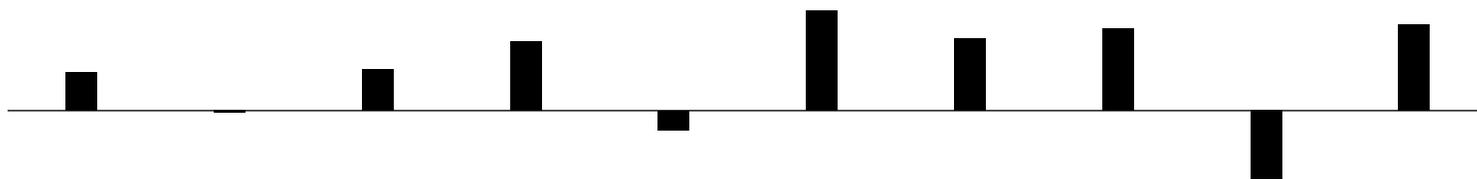
Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Fund summary

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
11.47	-0.64	12.38	20.59	-5.70	29.63	21.45	24.45	-20.41	25.53



Best quarter:	Q2 2020	22.54%
Worst quarter:	Q1 2020	-21.01%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	25.53	14.38	10.73
Series II	25.25	14.15	10.51
Series NAV	25.58	14.44	10.78
Wilshire 5000 Total Market Full Cap Index (reflects no deduction for fees, expenses, or taxes)	26.25	14.84	11.21

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (North America) Limited

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Ashikhusein Shahpurwala, CFA, PRM

Senior Portfolio Manager

Managed fund since 2013

Boncana Maiga, CFA, CIM

Portfolio Manager

Managed fund since 2021

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other

Fund summary

investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Fund summary

Ultra Short Term Bond Trust

Investment objective

The fund seeks a high level of current income consistent with the maintenance of liquidity and the preservation of capital.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold, and sell shares of the fund. **The fees and expenses do not reflect fees and expenses of any variable insurance or variable annuities contract that may use the fund as its underlying investment option and would be higher if they did.**

Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	Series I	Series II	Series NAV
Management fee	0.55	0.55	0.55
Distribution and service (Rule 12b-1) fees	0.05	0.25	0.00
Other expenses	0.08	0.08	0.08
Total annual fund operating expenses	0.68	0.88	0.63
Contractual expense reimbursement	-0.01 ¹	-0.01 ¹	-0.01 ¹
Total annual fund operating expenses after expense reimbursements	0.67	0.87	0.62

1 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement, including the fund (the participating portfolios). This waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

Expense example

The examples are intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. The examples assume that \$10,000 is invested in the fund for the periods indicated and then all shares are redeemed at the end of those periods. The examples also assume that the investment has a 5% return each year and that the fund's operating expenses remain the same. The expense example does not reflect fees and expenses of any variable insurance contract that may use the fund as its underlying investment option and would be higher if they did. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

Expenses (\$)	Series I	Series II	Series NAV
1 year	68	89	63
3 years	217	280	201
5 years	378	487	350
10 years	846	1,083	785

Portfolio turnover

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 41% of the average value of its portfolio.

Principal investment strategies

Under normal circumstances, the fund invests at least 80% of its net assets in a diversified portfolio of domestic, investment grade, debt securities. (The fund will provide written notice to shareholders at least 60 days prior to a change in its 80% investment policy.) Debt securities may be issued by governments, companies or special purpose entities and may include notes, discount notes, bonds, debentures, commercial paper, repurchase agreements, mortgage-backed and other asset-backed securities and assignments, participations and other interests in bank loans. Direct investments in loans may be illiquid and holding a loan could expose the fund to the risks of being a direct lender. The fund may also invest in cash and cash equivalents. The fund's investment policies are based on credit ratings at the time of purchase.

Fund summary

Investment grade securities include securities that are rated in one of the four highest rating categories as determined by a nationally recognized statistical rating organization, such as S&P Global Ratings (“S&P”), Fitch Ratings (“Fitch”) or Moody’s Investors Service (“Moody’s”), or are unrated securities determined by the subadvisor to be of comparable quality.

The fund may invest up to 20% of its net assets in securities that are rated BBB by S&P or Fitch, Baa by Moody’s, or unrated securities determined by the subadvisor to be of comparable quality. The fund may invest up to 20% of its net assets in foreign debt securities, including up to 5% of its net assets in foreign debt securities that are denominated in a foreign currency.

Under normal circumstances, the fund’s dollar weighted average maturity will be two years or less and its duration will be one year or less. Up to 15% of the fund’s net assets may be invested in securities with maturities greater than three years.

Use of Hedging and Other Strategic Transactions. The fund is authorized to use various hedging, derivatives and other strategic transactions described under “Additional Information about the Funds’ Principal Risks – Hedging, derivatives and other strategic transactions risk.”

The fund may invest in derivatives, including futures, currency forwards, options, swap contracts and other derivative instruments. The fund may invest in derivatives for both hedging and non-hedging purposes, including, for example, to seek to enhance returns or as a substitute for a position in an underlying asset.

Principal risks

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund’s investment strategy may not produce the intended results.

The fund’s main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 254 of the prospectus.*

Cash and cash equivalents risk. Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance.

Changing distribution levels risk. The fund may cease or reduce the level of its distribution if income or dividends paid from its investments declines.

Credit and counterparty risk. The issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter derivatives contract, or a borrower of fund securities may not make timely payments or otherwise honor its obligations. U.S. government securities are subject to varying degrees of credit risk depending upon the nature of their support. A downgrade or default affecting any of the fund’s securities could affect the fund’s performance.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Fixed-income securities risk. A rise in interest rates typically causes bond prices to fall. The longer the average maturity or duration of the bonds held by a fund, the more sensitive it will likely be to interest-rate fluctuations. An issuer may not make all interest payments or repay all or any of the principal borrowed. Changes in a security’s credit quality may adversely affect fund performance.

Foreign securities risk. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund’s volatility and could produce disproportionate losses, potentially more than the fund’s principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, options, swaps, foreign currency swaps, interest-rate swaps, credit default swaps, swaptions, equity-linked notes (equity-linked notes generally reflect the risks associated with their underlying securities, depend on the credit of the note’s issuer, may be privately placed, and may have a limited secondary market), inverse floating-rate securities, reverse repurchase agreements, total return swaps, and options on futures. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund’s ability to dispose of the

Fund summary

underlying securities, in addition, a reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Illiquid and restricted securities risk. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Illiquidity may have an adverse impact on a particular security's market price and the fund's ability to sell the security.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Liquidity risk may be magnified in rising interest rate environments due to higher than normal redemption rates. Widespread selling of fixed-income securities to satisfy redemptions during periods of reduced demand may adversely impact the price or salability of such securities. Periods of heavy redemption could cause the fund to sell assets at a loss or depressed value, which could negatively affect performance. Redemption risk is heightened during periods of declining or illiquid markets.

Loan participations risk. Participations and assignments involve special types of risks, including credit risk, interest-rate risk, counterparty risk, liquidity risk, risks associated with extended settlement, and the risks of being a lender.

Mortgage-backed and asset-backed securities risk. Mortgage-backed and asset-backed securities are subject to different combinations of prepayment, extension, interest-rate, and other market risks. Factors that impact the value of these securities include interest rate changes, the reliability of available information, credit quality or enhancement, and market perception.

Operational and cybersecurity risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Repurchase agreements risk. The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument.

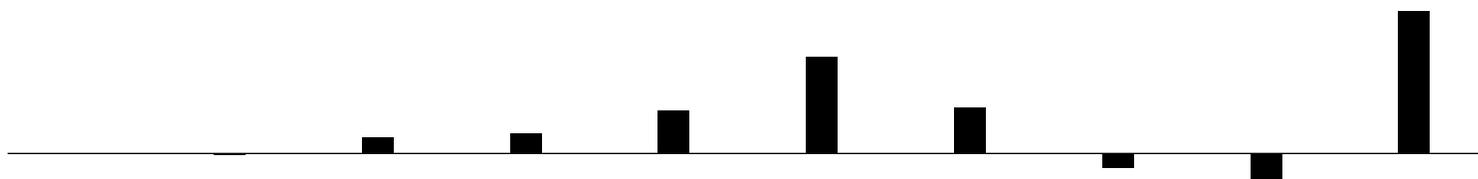
Sector risk. When a fund focuses its investments in certain sectors of the economy, its performance may be driven largely by sector performance and could fluctuate more widely than if the fund were invested more evenly across sectors.

Past performance

The following information provides some indication of the risks of investing in the fund by showing changes in performance from year to year and by showing how average annual returns for specified periods compare with those of a broad measure of market performance. The performance information below does not reflect fees and expenses of any variable insurance contract which may use JHVIT as its underlying investment option. If such fees and expenses had been reflected, performance would be lower. The past performance of the fund is not necessarily an indication of how the fund will perform in the future.

Calendar year total returns (%)—Series I

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
-0.02	-0.04	0.52	0.66	1.40	3.12	1.47	-0.46	-0.84	4.60



Best quarter:	Q2 2020	2.02%
Worst quarter:	Q1 2022	-0.98%

Average annual total returns (%)—as of 12/31/2023

	1 year	5 year	10 year
Series I	4.60	1.55	1.03
Series II	4.41	1.36	0.83
Series NAV	4.74	1.61	1.09
ICE BofA 6 Month U.S. Treasury Bill Index (reflects no deduction for fees, expenses, or taxes)	5.14	2.02	1.40

Investment management

Investment advisor John Hancock Variable Trust Advisers LLC

Subadvisor Manulife Investment Management (US) LLC

Portfolio management

The following individuals are jointly and primarily responsible for the day-to-day management of the fund's portfolio.

Howard C. Greene, CFA

*Senior Portfolio Manager, Co-Head
of U.S. Core and Core-Plus Fixed
Income*

Managed fund since 2010

Jeffrey N. Given, CFA

*Senior Portfolio Manager, Co-Head
of U.S. Core and Core-Plus Fixed
Income*

Managed fund since 2010

Pranay Sonalkar, CFA

Portfolio Manager

Managed fund since 2021

Connor Minnaar, CFA

Portfolio Manager

Managed fund since 2022

Purchase and redemption of fund shares

Shares of the fund are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds and to certain qualified retirement plans (qualified plans).

Shares of the fund are offered continuously, without sales charge, and are sold and redeemed each business day (which typically is any day the New York Stock Exchange is open) at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. The Portfolio does not have minimum initial or subsequent investment requirements. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption.

Taxes

Because shares of the fund may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the fund will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Compensation of financial intermediaries

The fund is not sold directly to the general public but instead is offered as an underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (Related Parties), may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The fund pays fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary's Web site for more information. In addition, payments by the funds to Related Parties may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

ADDITIONAL INFORMATION ABOUT THE FUNDS

Taxes

For federal income tax purposes, each of the funds is treated as a separate entity, intends to qualify as a “regulated investment company” under Subchapter M of the Internal Revenue Code of 1986, as amended (the “Code”), and intends to meet the diversification requirements that are applicable to mutual funds that serve as underlying investments for insurance company separate accounts. A fund that qualifies as a regulated investment company will not be subject to U.S. federal income tax on its net investment income and net capital gain that it distributes to its shareholders in each taxable year (provided that it distributes at least the sum of 90% of its net investment company taxable income and 90% of its net tax exempt interest income for the taxable year). Insurance company separate accounts, the principal shareholders of the funds, generally do not pay tax on dividends and capital gain distributions from the funds.

Because shares of the funds may be purchased only through variable insurance contracts and qualified plans, it is expected that any dividends or capital gains distributions made by the funds will be exempt from current federal taxation if left to accumulate within the variable contract or qualified plan. Holders of variable insurance contracts should consult the prospectuses of their respective contracts for information on the federal income tax consequences to such holders.

Variable contract owners should consult with their own tax advisors as to the tax consequences of investments in the funds, including the application of state and local taxes.

More information about taxes is located in the Statement of Additional Information (SAI) under the heading “Additional Information Concerning Taxes.”

Compensation of financial intermediaries

The JHVIT funds are not sold directly to the general public but instead are offered as underlying investment options for variable insurance contracts. The distributors of these contracts, the insurance companies that issue the contracts and their related companies (“Related Parties”) may pay compensation to broker-dealers and other intermediaries for distribution and other services and may enter into revenue sharing arrangements with certain intermediaries. The JHVIT funds pay fees to the Related Parties for management, distribution and other services. Payments by insurance and related companies to intermediaries may create a conflict of interest by influencing them and their salespersons to recommend such contracts over other investments. Ask your salesperson or visit your financial intermediary’s Web site for more information. In addition, payments by the funds to insurance and related companies may be a factor that an insurance company considers in including the funds as underlying investment options in variable insurance contracts. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Investing during transition periods

A fund may deviate from its principal investment strategies during transition periods, which may include the reassignment of portfolio management, a change in investment objective or strategy, a reorganization or liquidation, or the occurrence of large inflows or outflows.

Temporary defensive investing (applicable to all funds except Money Market Trust)

During unusual or unsettled market conditions, for purposes of meeting redemption requests, or pending investment of its assets, or in carrying out changes to the fund’s subadvisor or investment process, a fund generally may invest all or a portion of its assets in cash and securities that are highly liquid, including: (a) high quality money market instruments, such as short-term U.S. government obligations, commercial paper, repurchase agreements or other cash equivalents; and (b) money market funds. In the case of funds investing extensively in foreign securities, these investments may be denominated in either U.S. dollars or foreign currencies and may include debt of foreign corporations, governments and supranational organizations. To the extent a fund is in a defensive position, its ability to achieve its investment objective will be limited.

ESG integration (applicable to all funds except 500 Index Trust, International Equity Index Trust, Mid Cap Index Trust, Money Market Trust, Short Term Government Income Trust, Small Cap Index Trust, Total Bond Market Trust, and Total Stock Market Index Trust)

The managers may consider environmental, social, and/or governance (ESG) factors, alongside other relevant factors, as part of their investment process. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. The ESG characteristics utilized in each fund’s investment process may change over time and one or more characteristics may not be relevant with respect to all issuers that are eligible fund investments.

OTHER PERMITTED INVESTMENTS BY THE FUNDS OF FUNDS

The funds of funds may directly:

- purchase U.S. government securities and short-term paper;
- purchase shares of other registered open-end investment companies (and registered unit investment trusts) within the same “group of investment companies” as that term is defined in Section 12 of the Investment Company Act of 1940, as amended;

- purchase shares of other registered open-end investment companies (and registered unit investment trusts) where the advisor is not the same as, or affiliated with, the advisor to the fund, including ETFs;
- purchase exchange-traded notes (ETNs);
- invest in domestic and foreign equity securities, which may include common and preferred stocks of large-, mid-, and small-capitalization companies in both developed (including the United States) and emerging markets;
- invest in domestic and foreign fixed-income securities, which may include debt securities of governments throughout the world (including the United States), their agencies and instrumentalities, debt securities of corporations and supranationals, inflation-indexed securities, convertible bonds, mortgage-backed securities, asset-backed securities and collateralized debt securities. Investments in fixed-income securities may include securities of issuers in both developed (including the United States) and emerging markets, and may include fixed-income securities rated below investment grade;
- purchase securities of registered closed-end investment companies that are part of the same “group of investment companies” as that term is defined in Section 12 of the Investment Company Act of 1940, as amended;
- invest up to 15% of its net assets in illiquid securities of entities such as limited partnerships and other pooled investment vehicles, such as hedge funds;
- make short sales of securities (borrow and sell securities), either to realize appreciation when a security that the fund does not own declines in value or as a hedge against potential declines in the value of a fund security; and
- invest in qualified publicly traded partnerships and other publicly traded partnerships that, at the time of investment, the advisor believes will primarily generate only good income for purposes of qualifying as a regulated investment company under the Internal Revenue Code of 1986, as amended, including such publicly traded partnerships that invest principally in commodities or commodity-linked derivatives (with the prior approval of the advisor’s Complex Securities Committee).

The funds of funds may use various investment strategies such as hedging and other related transactions. For example, the funds of funds may use derivative instruments (such as options, futures and swaps) for hedging purposes, including hedging various market risks and managing the effective maturity or duration of debt instruments held by the fund. In addition, these strategies may be used to gain exposure to a particular security or securities market. The funds of funds also may purchase and sell commodities and may enter into swap contracts and other commodity-linked derivative instruments including those linked to physical commodities. Please refer to “Hedging and Other Strategic Transactions” in the Statement of Additional Information (SAI).

Because of uncertainties under federal tax laws as to whether income from commodity-linked derivative instruments and certain other instruments would constitute qualifying income to a regulated investment company, the fund is not permitted to invest directly in such instruments unless the manager obtains prior written approval from the advisor’s Complex Securities Committee. See “Additional information concerning taxes” in the SAI.

The funds of funds are:

- Each Lifestyle Portfolio
- Each Managed Volatility Portfolio

(Collectively the “funds of funds”)

PRINCIPAL RISKS OF INVESTING

An investment in a fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Each fund’s shares will go up and down in price, meaning that you could lose money by investing in the fund. Many factors influence a fund’s performance. A fund’s investment strategy may not produce the intended results.

Instability in the financial markets has led many governments, including the U.S. government, to take a number of unprecedented actions designed to support certain financial institutions and segments of the financial markets that have experienced extreme volatility and, in some cases, a lack of liquidity. Federal, state, and other governments, and their regulatory agencies or self-regulatory organizations, may take actions that affect the regulation of the instruments in which a fund invests, or the issuers of such instruments, in ways that are unforeseeable. Legislation or regulation may also change the way in which each fund itself is regulated. Such legislation or regulation could limit or preclude each fund’s ability to achieve its investment objective. In addition, political events within the United States and abroad could negatively impact financial markets and each fund’s performance. Further, certain municipalities of the United States and its territories are financially strained and may face the possibility of default on their debt obligations, which could directly or indirectly detract from the fund’s performance.

Governments or their agencies may also acquire distressed assets from financial institutions and acquire ownership interests in those institutions. The implications of government ownership and disposition of these assets are unclear, and such a program may have positive or negative effects on the liquidity, valuation, and performance of each fund’s portfolio holdings. Furthermore, volatile financial markets can expose each fund to greater market and liquidity risk, increased transaction costs, and potential difficulty in valuing portfolio instruments held by each fund.

The principal risks of investing in each fund are summarized in its fund summary above. Below are descriptions of the main factors that may play a role in shaping a fund's overall risk profile. The descriptions appear in alphabetical order, not in order of importance. For further details about fund risks, including additional risk factors that are not discussed in this prospectus because they are not considered primary factors, see the funds' Statement of Additional Information (SAI).

Additional information about the risks of the Lifestyle Portfolios' asset transfer process

Unless otherwise noted, in this section, references to a single fund apply equally to all of the funds.

The Lifestyle Growth Portfolio, Lifestyle Moderate Portfolio, Lifestyle Balanced Portfolio and Lifestyle Conservative Portfolio (collectively, the "JHVIT Lifestyle Portfolios") are offered in connection with specific guaranteed benefits under variable annuity contracts (the "Contracts") issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the "John Hancock Issuers"). The Contracts provide that the John Hancock Issuers can automatically transfer contract value between the JHVIT Lifestyle Portfolio and the JHVIT Select Bond Trust through a nondiscretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and therefore limit the John Hancock Issuers' exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers' process will depend on several factors, including market movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from the JHVIT Lifestyle Portfolio to the JHVIT Select Bond Trust when equity markets fall. These asset reallocations may result in large-scale asset flows into and out of, and may negatively affect the performance of the JHVIT Lifestyle Portfolio and the underlying funds in which the JHVIT Lifestyle Portfolio invest.

As a result of large scale asset flows into and out of the JHVIT Lifestyle Portfolios, the underlying funds in which the JHVIT Lifestyle Portfolios invest, may also experience large-scale inflows and outflows. These flows may increase an underlying fund's transaction costs and cause the fund to purchase or sell securities when it would not normally do so, which may negatively affect the underlying fund's expense ratios and performance. It could be particularly disadvantageous for an underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolios bear their proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolios.

ADDITIONAL INFORMATION ABOUT THE FUNDS OF FUNDS' PRINCIPAL RISKS

Unless otherwise noted, in this section, references to a single fund apply equally to all of the funds.

Advance trade estimate risk

The JHVIT Lifestyle Portfolios may seek to mitigate asset transfer risk by adjusting their portfolios based on advance estimates of automatic transfers of Contract value under the Contracts. The John Hancock Issuers have provided the JHVIT Lifestyle Portfolios' subadvisor with an analytical tool that calculates estimates of automatic transfers based on several factors, including the mathematical process for automatic transfers and market movements before the daily close of trading. The subadvisor may, but is not required to, use the tool to adjust the JHVIT Lifestyle Portfolios' portfolios with the goal of trading in securities or purchasing shares of underlying funds as close to the market close as possible in order to limit the JHVIT Lifestyle Portfolios' exposure to cash drag (i.e., holding cash while markets are rising) and adverse overnight market fluctuations. For example, in a rising market, if the analytical tool suggests that the JHVIT Lifestyle Portfolios will receive inflows that day (the "Trade Date"), the subadvisor could buy securities or shares of an underlying fund close to or at the closing prices on the Trade Date, as opposed to the following business day, when the actual transfer amount would be known. In a falling market, if the analytical tool suggests that the JHVIT Lifestyle Portfolios will experience outflows on Trade Date, the subadvisor could sell securities or shares of an underlying fund close to or at the closing prices on Trade Date, as opposed to the following business day, when the actual transfer amount would be known.

If the subadvisor relies on the analytical tool or its own judgment and places trades in anticipation of purchases and redemptions of JHVIT Lifestyle shares, there can be no assurance that the prices paid by the JHVIT Lifestyle Portfolios will be better than if the JHVIT Lifestyle Portfolios had traded the following business day. The estimated transfer amount may be different from the actual transfer amount for various reasons, including changes in market direction, contract owner behavior and faulty inputs. If the estimated transfer amount is different from the actual transfer amount, the JHVIT Lifestyle Portfolios will buy or sell securities or shares of an underlying fund the following business day to adjust for this difference. For example, if cash flows into the JHVIT Lifestyle Portfolios are less than estimated, the JHVIT Lifestyle Portfolios could be forced to liquidate positions they had purchased. Conversely, if cash flows out of the JHVIT Lifestyle Portfolios are less than estimated, the JHVIT Lifestyle Portfolios may be required to repurchase positions they had sold. In addition, purchasing securities or shares of an underlying fund early could cause the JHVIT Lifestyle Portfolios to spend more money than they have available and, in the event of a market decline, such leverage will magnify losses because the decline also affects the securities purchased with amounts in excess of the JHVIT Lifestyle Portfolios' assets. Due to these various factors, trading on the basis of advance estimates of automatic transfers may cause higher portfolio turnover than that based solely on automatic transfers of Contract value under the Contracts, increase JHVIT Lifestyle Portfolios expenses and adversely affect the performance of the JHVIT Lifestyle Portfolios.

Affiliated insurance companies risk

The Advisor may be influenced by the benefits to its affiliated life insurance companies in managing the fund and overseeing its subadvisors. The John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund have a financial interest in preserving the value of the funds and reducing their volatility due to their obligations for these guaranteed benefits (the cost of providing these guaranteed benefits is related to several factors including the performance and volatility of the fund). To the extent the fund is successful in managing the volatility of returns and downside risk, the John Hancock insurance companies issuing guaranteed benefits on variable annuity and insurance contracts investing in the fund will also benefit from a reduction in their potential investment risk which will reduce their costs of hedging this risk and may reduce their reserve and capital requirements. These financial benefits to the John Hancock insurance companies may be material. The fund and the fund's investment advisor have adopted procedures that are intended to address these conflicts and ensure that the fund is managed in accordance with its disclosed investment objectives and strategies.

Asset allocation risk

Although asset allocation among different asset categories generally limits risk and exposure to any one category, the risk remains that the subadvisor may favor an asset category that performs poorly relative to the other asset categories. To the extent that alternative asset categories underperform the general stock market, the fund would perform poorly relative to a fund invested primarily in the general stock market.

Cash and cash equivalents risk

Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund's ability to achieve its investment objective and may negatively impact the fund's performance. To the extent that the fund invests in a money market fund, the fund will indirectly bear a proportionate share of the money market fund's expenses, in addition to the operating expenses of the fund, which are borne directly by fund shareholders. In addition, while money market funds seek to maintain a stable net asset value, the value of a money market fund is not guaranteed and investors in money market funds can lose money, which could detract from the fund's performance.

Cash collateral risk

Subject to the requirements of Rule 18f-4, to the extent a fund maintains cash collateral required to cover its obligations, such collateral holdings may have the effect of reducing overall portfolio returns. In addition, because such collateral positions cannot be eliminated or reduced unless the corresponding derivative obligation is eliminated or reduced, a large derivative position may materially limit the subadvisor's flexibility in managing the fund.

Commodity risk

The market price of commodity investments may be volatile due to fluctuating demand, supply disruption, speculation, and other factors. Certain commodity investments may have no active trading market at times. The value of commodities investments will generally be affected by overall market movements and factors specific to a particular industry or commodity, which may include weather, pandemics, epidemics, embargoes, tariffs, and health, political, international and regulatory developments. Economic and other events (whether real or perceived) can reduce the demand for commodities, which may reduce market prices and cause the value of shares of the fund to fall. Exposure to commodities and commodities markets may subject the fund to greater volatility than investments in traditional securities. Certain types of commodities instruments (such as total return swaps and commodity-linked notes) are subject to the risk that the counterparty to the instrument will not perform or will be unable to perform in accordance with the terms of the instrument.

Credit and counterparty risk

This is the risk that an issuer of a U.S. government security, the issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter (OTC) derivatives contract (see "Hedging, derivatives, and other strategic transactions risk"), or a borrower of a fund's securities will be unable or unwilling to make timely principal, interest, or settlement payments, or otherwise honor its obligations. Credit risk associated with investments in fixed-income securities relates to the ability of the issuer to make scheduled payments of principal and interest on an obligation. A fund that invests in fixed-income securities is subject to varying degrees of risk that the issuers of the securities will have their credit ratings downgraded or will default, potentially reducing the fund's share price and income level. Nearly all fixed-income securities are subject to some credit risk, which may vary depending upon whether the issuers of the securities are corporations, domestic or foreign governments, or their subdivisions or instrumentalities. U.S. government securities are subject to varying degrees of credit risk depending upon whether the securities are supported by the full faith and credit of the United States; supported by the ability to borrow from the U.S. Treasury; supported only by the credit of the issuing U.S. government agency, instrumentality, or corporation; or otherwise supported by the United States. For example, issuers of many types of U.S. government securities (e.g., the Federal Home Loan Mortgage Corporation (Freddie Mac), Federal National Mortgage Association (Fannie Mae), and Federal Home Loan Banks), although chartered or sponsored by Congress, are not funded by congressional appropriations, and their fixed-income securities, including asset-backed and mortgage-backed securities, are neither guaranteed nor insured by the U.S. government. An agency of the U.S. government has placed Fannie Mae and Freddie Mac into conservatorship, a statutory process with the objective of returning the entities to normal business operations. It is unclear what effect this conservatorship will have on the securities issued or guaranteed by Fannie Mae or Freddie Mac. As a result, these securities

are subject to more credit risk than U.S. government securities that are supported by the full faith and credit of the United States (e.g., U.S. Treasury bonds). When a fixed-income security is not rated, a manager may have to assess the risk of the security itself. Asset-backed securities, whose principal and interest payments are supported by pools of other assets, such as credit card receivables and automobile loans, are subject to further risks, including the risk that the obligors of the underlying assets default on payment of those assets.

Funds that invest in below-investment-grade securities, also called junk bonds (e.g., fixed-income securities rated Ba or lower by Moody's Investors Service, Inc. or BB or lower by S&P Global Ratings or Fitch Ratings, as applicable, at the time of investment, or determined by a manager to be of comparable quality to securities so rated) are subject to increased credit risk. The sovereign debt of many foreign governments, including their subdivisions and instrumentalities, falls into this category. Below-investment-grade securities offer the potential for higher investment returns than higher-rated securities, but they carry greater credit risk: their issuers' continuing ability to meet principal and interest payments is considered speculative, they are more susceptible to real or perceived adverse economic and competitive industry conditions, and they may be less liquid than higher-rated securities.

In addition, a fund is exposed to credit risk to the extent that it makes use of OTC derivatives (such as forward foreign currency contracts and/or swap contracts) and engages to a significant extent in the lending of fund securities or the use of repurchase agreements. OTC derivatives transactions can be closed out with the other party to the transaction. If the counterparty defaults, a fund will have contractual remedies, but there is no assurance that the counterparty will be able to meet its contractual obligations or that, in the event of default, a fund will succeed in enforcing them. A fund, therefore, assumes the risk that it may be unable to obtain payments owed to it under OTC derivatives contracts or that those payments may be delayed or made only after the fund has incurred the costs of litigation. While the manager intends to monitor the creditworthiness of contract counterparties, there can be no assurance that the counterparty will be in a position to meet its obligations, especially during unusually adverse market conditions.

Economic and market events risk

Events in certain sectors historically have resulted, and may in the future result, in an unusually high degree of volatility in the financial markets, both domestic and foreign. These events have included, but are not limited to: bankruptcies, corporate restructurings, and other similar events; bank failures; governmental efforts to limit short selling and high frequency trading; measures to address U.S. federal and state budget deficits; social, political, and economic instability in Europe; economic stimulus by the Japanese central bank; dramatic changes in energy prices and currency exchange rates; and China's economic slowdown. Interconnected global economies and financial markets increase the possibility that conditions in one country or region might adversely impact issuers in a different country or region. Both domestic and foreign equity markets have experienced increased volatility and turmoil, with issuers that have exposure to the real estate, mortgage, and credit markets particularly affected. Financial institutions could suffer losses as interest rates rise or economic conditions deteriorate.

In addition, relatively high market volatility and reduced liquidity in credit and fixed-income markets may adversely affect many issuers worldwide. Actions taken by the U.S. Federal Reserve (Fed) or foreign central banks to stimulate or stabilize economic growth, such as interventions in currency markets, could cause high volatility in the equity and fixed-income markets. Reduced liquidity may result in less money being available to purchase raw materials, goods, and services from emerging markets, which may, in turn, bring down the prices of these economic staples. It may also result in emerging-market issuers having more difficulty obtaining financing, which may, in turn, cause a decline in their securities prices.

Beginning in March 2022, the Fed began increasing interest rates and has signaled the potential for further increases. As a result, risks associated with rising interest rates are currently heightened. It is difficult to accurately predict the pace at which the Fed will increase interest rates any further, or the timing, frequency or magnitude of any such increases, and the evaluation of macro-economic and other conditions could cause a change in approach in the future. Any such increases generally will cause market interest rates to rise and could cause the value of a fund's investments, and the fund's net asset value (NAV), to decline, potentially suddenly and significantly. As a result, the fund may experience high redemptions and, as a result, increased portfolio turnover, which could increase the costs that the fund incurs and may negatively impact the fund's performance.

In addition, as the Fed increases the target Fed funds rate, any such rate increases, among other factors, could cause markets to experience continuing high volatility. A significant increase in interest rates may cause a decline in the market for equity securities. These events and the possible resulting market volatility may have an adverse effect on the fund.

Political turmoil within the United States and abroad may also impact the fund. Although the U.S. government has honored its credit obligations, it remains possible that the United States could default on its obligations. While it is impossible to predict the consequences of such an unprecedented event, it is likely that a default by the United States would be highly disruptive to the U.S. and global securities markets and could significantly impair the value of the fund's investments. Similarly, political events within the United States at times have resulted, and may in the future result, in a shutdown of government services, which could negatively affect the U.S. economy, decrease the value of many fund investments, and increase uncertainty in or impair the operation of the U.S. or other securities markets. In recent years, the U.S. renegotiated many of its global trade relationships and imposed or threatened to impose significant import tariffs. These actions could lead to price volatility and overall declines in U.S. and global investment markets.

Uncertainties surrounding the sovereign debt of a number of European Union (EU) countries and the viability of the EU have disrupted and may in the future disrupt markets in the United States and around the world. If one or more countries leave the EU or the EU dissolves, the global securities markets likely will be significantly disrupted. On January 31, 2020, the United Kingdom (UK) left the EU, commonly referred to as "Brexit," the UK

ceased to be a member of the EU, and the UK and EU entered into a Trade and Cooperation Agreement. While the full impact of Brexit is unknown, Brexit has already resulted in volatility in European and global markets. There remains significant market uncertainty regarding Brexit's ramifications, and the range and potential implications of possible political, regulatory, economic, and market outcomes are difficult to predict.

A widespread health crisis such as a global pandemic could cause substantial market volatility, exchange trading suspensions and closures, which may lead to less liquidity in certain instruments, industries, sectors or the markets generally, and may ultimately affect fund performance. For example, the coronavirus (COVID-19) pandemic has resulted and may continue to result in significant disruptions to global business activity and market volatility due to disruptions in market access, resource availability, facilities operations, imposition of tariffs, export controls and supply chain disruption, among others. While many countries have lifted some or all restrictions related to the coronavirus (COVID-19) and the United States ended the public health emergency and national emergency declarations relating to the coronavirus (COVID-19) pandemic on May 11, 2023, the continued impact of coronavirus (COVID-19) and related variants is uncertain. The impact of a health crisis and other epidemics and pandemics that may arise in the future, could affect the global economy in ways that cannot necessarily be foreseen at the present time. A health crisis may exacerbate other pre-existing political, social and economic risks. Any such impact could adversely affect the fund's performance, resulting in losses to your investment.

Political and military events, including in Ukraine, North Korea, Russia, Venezuela, Iran, Syria, and other areas of the Middle East, and nationalist unrest in Europe and South America, also may cause market disruptions.

As a result of continued political tensions and armed conflicts, including the Russian invasion of Ukraine commencing in February of 2022, the extent and ultimate result of which are unknown at this time, the United States and the EU, along with the regulatory bodies of a number of countries, have imposed economic sanctions on certain Russian corporate entities and individuals, and certain sectors of Russia's economy, which may result in, among other things, the continued devaluation of Russian currency, a downgrade in the country's credit rating, and/or a decline in the value and liquidity of Russian securities, property or interests. These sanctions could also result in the immediate freeze of Russian securities and/or funds invested in prohibited assets, impairing the ability of a fund to buy, sell, receive or deliver those securities and/or assets. These sanctions or the threat of additional sanctions could also result in Russia taking counter measures or retaliatory actions, which may further impair the value and liquidity of Russian securities. The United States and other nations or international organizations may also impose additional economic sanctions or take other actions that may adversely affect Russia-exposed issuers and companies in various sectors of the Russian economy. Any or all of these potential results could lead Russia's economy into a recession. Economic sanctions and other actions against Russian institutions, companies, and individuals resulting from the ongoing conflict may also have a substantial negative impact on other economies and securities markets both regionally and globally, as well as on companies with operations in the conflict region, the extent to which is unknown at this time. The United States and the EU have also imposed similar sanctions on Belarus for its support of Russia's invasion of Ukraine. Additional sanctions may be imposed on Belarus and other countries that support Russia. Any such sanctions could present substantially similar risks as those resulting from the sanctions imposed on Russia, including substantial negative impacts on the regional and global economies and securities markets.

In addition, there is a risk that the prices of goods and services in the United States and many foreign economies may decline over time, known as deflation. Deflation may have an adverse effect on stock prices and creditworthiness and may make defaults on debt more likely. If a country's economy slips into a deflationary pattern, it could last for a prolonged period and may be difficult to reverse. Further, there is a risk that the present value of assets or income from investments will be less in the future, known as inflation. Inflation rates may change frequently and drastically as a result of various factors, including unexpected shifts in the domestic or global economy, and a fund's investments may be affected, which may reduce a fund's performance. Further, inflation may lead to the rise in interest rates, which may negatively affect the value of debt instruments held by the fund, resulting in a negative impact on a fund's performance. Generally, securities issued in emerging markets are subject to a greater risk of inflationary or deflationary forces, and more developed markets are better able to use monetary policy to normalize markets.

Equity securities risk

Common and preferred stocks represent equity ownership in a company. Stock markets are volatile. The price of equity securities will fluctuate, and can decline and reduce the value of a fund investing in equities. The price of equity securities fluctuates based on changes in a company's financial condition and overall market and economic conditions. The value of equity securities purchased by a fund could decline if the financial condition of the companies in which the fund is invested declines, or if overall market and economic conditions deteriorate. An issuer's financial condition could decline as a result of poor management decisions, competitive pressures, technological obsolescence, undue reliance on suppliers, labor issues, shortages, corporate restructurings, fraudulent disclosures, irregular and/or unexpected trading activity among retail investors, or other factors. Changes in the financial condition of a single issuer can impact the market as a whole.

Even a fund that invests in high-quality, or blue chip, equity securities, or securities of established companies with large market capitalizations (which generally have strong financial characteristics), can be negatively impacted by poor overall market and economic conditions. Companies with large market capitalizations may also have less growth potential than smaller companies and may be less able to react quickly to changes in the marketplace.

A fund generally does not attempt to time the market. Because of its exposure to equities, the possibility that stock market prices in general will decline over short or extended periods subjects the fund to unpredictable declines in the value of its investments, as well as periods of poor performance.

ESG integration risk

The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing a fund. A manager may consider these ESG factors on all or a meaningful portion of a fund's investments. In certain situations, the extent to which these ESG factors may be applied according to the manager's integrated investment process may not include U.S. Treasuries, government securities, or other asset classes. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that a fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria. Integration of ESG factors into a fund's investment process may result in a manager making different investments for a fund than for a fund with a similar investment universe and/or investment style that does not incorporate such considerations in its investment strategy or processes, and a fund's investment performance may be affected. Because ESG factors are one of many considerations for a fund, the manager may nonetheless include companies with low ESG characteristics or exclude companies with high ESG characteristics in a fund's investments.

The ESG characteristics utilized in a fund's investment process may change over time, and different ESG characteristics may be relevant to different investments. Although the manager has established its own structure to oversee ESG integration in accordance with the fund's investment objective and strategies, successful integration of ESG factors will depend on the manager's skill in researching, identifying, and applying these factors, as well as on the availability of relevant data. The method of evaluating ESG factors and subsequent impact on portfolio composition, performance, proxy voting decisions and other factors, is subject to the interpretation of the manager in accordance with the fund's investment objective and strategies. ESG factors may be evaluated differently by different managers, and may not carry the same meaning to all investors and managers. The manager may employ active shareowner engagement to raise ESG issues with the management of select portfolio companies. The regulatory landscape with respect to ESG investing in the United States is evolving and any future rules or regulations may require a fund to change its investment process with respect to ESG integration.

Exchange-traded funds (ETFs) risk

ETFs are a type of investment company bought and sold on a securities exchange. A fund could purchase shares of an ETF to gain exposure to a portion of the U.S. or a foreign market. The risks of owning shares of an ETF include the risks of directly owning the underlying securities and other instruments the ETF holds. A lack of liquidity in an ETF (e.g., absence of an active trading market) could result in the ETF being more volatile than its underlying securities. The existence of extreme market volatility or potential lack of an active trading market for an ETF's shares could result in the ETF's shares trading at a significant premium or discount to its net asset value (NAV). An ETF has its own fees and expenses, which are indirectly borne by the fund. A fund may also incur brokerage and other related costs when it purchases and sells ETFs. Also, in the case of passively-managed ETFs, there is a risk that an ETF may fail to closely track the index or market segment that it is designed to track due to delays in the ETF's implementation of changes to the composition of the index or other factors.

Exchange-traded notes (ETNs) risk

ETNs are a type of unsecured, unsubordinated debt security that have characteristics and risks similar to those of fixed-income securities and trade on a major exchange similar to shares of ETFs. This type of debt security differs, however, from other types of bonds and notes because ETN returns are based upon the performance of a market index minus applicable fees, no period coupon payments are distributed, and no principal protections exist. The purpose of ETNs is to create a type of security that combines the aspects of both bonds and ETFs. The value of an ETN may be influenced by time to maturity; level of supply and demand for the ETN; volatility and lack of liquidity in underlying commodities or securities markets; changes in the applicable interest rates; changes in the issuer's credit rating; and economic, legal, political, or geographic events that affect the referenced commodity or security. The fund's decision to sell its ETN holdings also may be limited by the availability of a secondary market. If the fund must sell some or all of its ETN holdings and the secondary market is weak, it may have to sell such holdings at a discount. If the fund holds its investment in an ETN until maturity, the issuer will give the fund a cash amount that would be equal to the principal amount (subject to the day's index factor). ETNs are also subject to counterparty credit risk and fixed-income risk.

Fixed-income securities risk

Fixed-income securities are generally subject to two principal types of risk, as well as other risks described below: (1) interest-rate risk and (2) credit quality risk.

Interest-rate risk. Fixed-income securities are affected by changes in interest rates. When interest rates decline, the market value of fixed-income securities generally can be expected to rise. Conversely, when interest rates rise, the market value of fixed-income securities generally can be expected to decline. The longer the duration or maturity of a fixed-income security, the more susceptible it is to interest-rate risk. Duration is a measure of the price sensitivity of a debt security, or a fund that invests in a portfolio of debt securities, to changes in interest rates, whereas the maturity of a security measures the time until final payment is due. Duration measures sensitivity more accurately than maturity because it takes into account the time value of cash flows generated over the life of a debt security. Recent and potential future changes in government monetary policy may affect interest rates.

Beginning in March 2022, the Federal Reserve Board (Fed) began increasing interest rates and has signaled the potential for further increases. It is difficult to accurately predict the pace at which the Fed will increase interest rates any further, or the timing, frequency or magnitude of any such

increases, and the evaluation of macro-economic and other conditions could cause a change in approach in the future. Any such increases generally will cause market interest rates to rise and could cause the value of a fund's investments, and the fund's net asset value (NAV), to decline, potentially suddenly and significantly. As a result, the fund may experience high redemptions and, as a result, increased portfolio turnover, which could increase the costs that the fund incurs and may negatively impact the fund's performance.

In response to certain economic disruptions, governmental authorities and regulators typically respond with significant fiscal and monetary policy changes, including considerably lowering interest rates, which, in some cases could result in negative interest rates. These actions, including their reversal or potential ineffectiveness, could further increase volatility in securities and other financial markets and reduce market liquidity. To the extent the fund has a bank deposit or holds a debt instrument with a negative interest rate to maturity, the fund would generate a negative return on that investment. Similarly, negative rates on investments by money market funds and similar cash management products could lead to losses on investments, including on investments of the fund's uninvested cash.

Credit quality risk. Fixed-income securities are subject to the risk that the issuer of the security will not repay all or a portion of the principal borrowed and will not make all interest payments. If the credit quality of a fixed-income security deteriorates after a fund has purchased the security, the market value of the security may decrease and lead to a decrease in the value of the fund's investments. An issuer's credit quality could deteriorate as a result of poor management decisions, competitive pressures, technological obsolescence, undue reliance on suppliers, labor issues, shortages, corporate restructurings, fraudulent disclosures, or other factors. Funds that may invest in lower-rated fixed-income securities, commonly referred to as junk securities, are riskier than funds that may invest in higher-rated fixed-income securities.

Investment-grade fixed-income securities in the lowest rating category risk. Investment-grade fixed-income securities in the lowest rating category (such as Baa by Moody's Investors Service, Inc. or BBB by S&P Global Ratings or Fitch Ratings, as applicable, and comparable unrated securities) involve a higher degree of risk than fixed-income securities in the higher rating categories. While such securities are considered investment-grade quality and are deemed to have adequate capacity for payment of principal and interest, such securities lack outstanding investment characteristics and have speculative characteristics as well. For example, changes in economic conditions or other circumstances are more likely to lead to a weakened capacity to make principal and interest payments than is the case with higher-grade securities.

Prepayment of principal risk. Many types of debt securities, including floating-rate loans, are subject to prepayment risk. Prepayment risk is the risk that, when interest rates fall, certain types of obligations will be paid off by the borrower more quickly than originally anticipated and the fund may have to invest the proceeds in securities with lower yields. Securities subject to prepayment risk can offer less potential for gains when the credit quality of the issuer improves.

Fund of funds risk

The fund's ability to achieve its investment objective will depend largely, in part, on: (i) the underlying funds' performance, expenses and ability to meet their investment objectives; and (ii) properly rebalancing assets among underlying funds and different asset classes. The fund is also subject to risks related to: (i) layering of fees of the underlying funds; and (ii) conflicts of interest associated with the subadvisor's ability to allocate fund assets without limit to other funds it advises and/or other funds advised by affiliated subadvisors. There is no assurance that either the fund or the underlying funds will achieve their investment objectives.

Affiliated subadvised fund conflicts of interest risk

The subadvisor may allocate the fund's assets without limit to underlying funds managed by the subadvisor and/or other affiliated subadvisors (affiliated subadvised funds). Accordingly, rebalancings of the assets of the fund present a conflict of interest because there is an incentive for the subadvisor to allocate assets to the subadvisor and other affiliated subadvised funds rather than underlying funds managed by unaffiliated subadvisors. In this regard, the subadvisor and other affiliated subadvisors of affiliated subadvised funds benefit from the subadvisor's allocations of fund assets to such funds through the additional subadvisory fees they earn on such allocated fund assets. The subadvisor has a duty to allocate assets only to underlying funds it has determined are in the best interests of shareholders, and make allocations to affiliated subadvised funds on this basis without regard to any such economic incentive. As part of its oversight of the funds and the subadvisors, the advisor will monitor to ensure that allocations are conducted in accordance with these principles.

Multi-manager risk; limited universe of subadvisors and underlying funds

The fund's ability to achieve its investment objective depends upon the subadvisor's skill in determining the fund's strategic allocation to investment strategies and in selecting the best mix of underlying funds. The allocation of investments among the different subadvisors managing underlying funds with different styles and asset classes, such as equity, debt, U.S., or foreign securities, may have a more significant effect on the performance of a fund of funds when one of these investments is performing more poorly than the other. There is no assurance that allocation decisions will result in the desired effects. Investment decisions made by the subadvisor may cause a fund of funds to incur losses or to miss profit opportunities on which it might otherwise have capitalized. Moreover, at times, the subadvisor may invest fund assets in underlying funds managed by a limited number of subadvisors. In such circumstances, the fund's performance could be substantially dependent on the performance of these subadvisors. Similarly, the subadvisor's

allocation of a fund of fund's assets to a limited number of underlying funds may adversely affect the performance of the fund of funds, and, in such circumstances, it will be more sensitive to the performance and risks associated with those funds and any investments in which such underlying funds focus.

Hedging, derivatives, and other strategic transactions risk

The ability of a fund to utilize hedging, derivatives, and other strategic transactions to benefit the fund will depend in part on its manager's ability to predict pertinent market movements and market risk, counterparty risk, credit risk, interest-rate risk, and other risk factors, none of which can be assured. The skills required to utilize hedging and other strategic transactions are different from those needed to select a fund's securities. Even if the manager only uses hedging and other strategic transactions in a fund primarily for hedging purposes or to gain exposure to a particular securities market, if the transaction does not have the desired outcome, it could result in a significant loss to a fund. The amount of loss could be more than the principal amount invested. These transactions may also increase the volatility of a fund and may involve a small investment of cash relative to the magnitude of the risks assumed, thereby magnifying the impact of any resulting gain or loss. For example, the potential loss from the use of futures can exceed a fund's initial investment in such contracts. In addition, these transactions could result in a loss to a fund if the counterparty to the transaction does not perform as promised.

A fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates, or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates, and related indexes. A fund may use derivatives for many purposes, including for hedging and as a substitute for direct investment in securities or other assets. Derivatives may be used in a way to efficiently adjust the exposure of a fund to various securities, markets, and currencies without a fund actually having to sell existing investments and make new investments. This generally will be done when the adjustment is expected to be relatively temporary or in anticipation of effecting the sale of fund assets and making new investments over time. Further, since many derivatives have a leverage component, adverse changes in the value or level of the underlying asset, reference rate, or index can result in a loss substantially greater than the amount invested in the derivative itself. Certain derivatives have the potential for unlimited loss, regardless of the size of the initial investment. When a fund uses derivatives for leverage, investments in that fund will tend to be more volatile, resulting in larger gains or losses in response to market changes. To limit risks associated with leverage, a fund is required to comply with Rule 18f-4 under the Investment Company Act of 1940, as amended (the Derivatives Rule) as outlined below. For a description of the various derivative instruments the fund may utilize, refer to the SAI.

The regulation of the U.S. and non-U.S. derivatives markets has undergone substantial change in recent years and such change may continue. In particular, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and regulations promulgated or proposed thereunder require many derivatives to be cleared and traded on an exchange, expand entity registration requirements, impose business conduct requirements on dealers that enter into swaps with a pension plan, endowment, retirement plan or government entity, and required banks to move some derivatives trading units to a non-guaranteed affiliate separate from the deposit-taking bank or divest them altogether. Although the Commodity Futures Trading Commission (CFTC) has released final rules relating to clearing, reporting, recordkeeping and registration requirements under the legislation, many of the provisions are subject to further final rule making, and thus its ultimate impact remains unclear. New regulations could, among other things, restrict a fund's ability to engage in derivatives transactions (for example, by making certain types of derivatives transactions no longer available to the fund) and/or increase the costs of such derivatives transactions (for example, by increasing margin or capital requirements), and a fund may be unable to fully execute its investment strategies as a result. Limits or restrictions applicable to the counterparties with which a fund engages in derivative transactions also could prevent the fund from using these instruments or affect the pricing or other factors relating to these instruments, or may change the availability of certain investments.

The Derivatives Rule mandates that a fund adopt and/or implement: (i) value-at-risk limitations (VaR); (ii) a written derivatives risk management program; (iii) new Board oversight responsibilities; and (iv) new reporting and recordkeeping requirements. In the event that a fund's derivative exposure is 10% or less of its net assets, excluding certain currency and interest rate hedging transactions, it can elect to be classified as a limited derivatives user (Limited Derivatives User) under the Derivatives Rule, in which case the fund is not subject to the full requirements of the Derivatives Rule. Limited Derivatives Users are exempted from VaR testing, implementing a derivatives risk management program, and certain Board oversight and reporting requirements mandated by the Derivatives Rule. However, a Limited Derivatives User is still required to implement written compliance policies and procedures reasonably designed to manage its derivatives risks.

The Derivatives Rule also provides special treatment for reverse repurchase agreements, similar financing transactions and unfunded commitment agreements. Specifically, a fund may elect whether to treat reverse repurchase agreements and similar financing transactions as "derivatives transactions" subject to the requirements of the Derivatives Rule or as senior securities equivalent to bank borrowings for purposes of Section 18 of the Investment Company Act of 1940. In addition, when-issued or forward settling securities transactions that physically settle within 35-days are deemed not to involve a senior security.

At any time after the date of this prospectus, legislation may be enacted that could negatively affect the assets of a fund. Legislation or regulation may change the way in which a fund itself is regulated. The advisor cannot predict the effects of any new governmental regulation that may be implemented, and there can be no assurance that any new governmental regulation will not adversely affect a fund's ability to achieve its investment objectives.

The use of derivative instruments may involve risks different from, or potentially greater than, the risks associated with investing directly in securities and other, more traditional assets. In particular, the use of derivative instruments exposes a fund to the risk that the counterparty to an OTC derivatives contract will be unable or unwilling to make timely settlement payments or otherwise honor its obligations. OTC derivatives transactions typically can only be closed out with the other party to the transaction, although either party may engage in an offsetting transaction that puts that party in the same economic position as if it had closed out the transaction with the counterparty or may obtain the other party's consent to assign the transaction to a third party. If the counterparty defaults, the fund will have contractual remedies, but there is no assurance that the counterparty will meet its contractual obligations or that, in the event of default, the fund will succeed in enforcing them. For example, because the contract for each OTC derivatives transaction is individually negotiated with a specific counterparty, a fund is subject to the risk that a counterparty may interpret contractual terms (e.g., the definition of default) differently than the fund when the fund seeks to enforce its contractual rights. If that occurs, the cost and unpredictability of the legal proceedings required for the fund to enforce its contractual rights may lead it to decide not to pursue its claims against the counterparty. The fund, therefore, assumes the risk that it may be unable to obtain payments owed to it under OTC derivatives contracts or that those payments may be delayed or made only after the fund has incurred the costs of litigation. While a manager intends to monitor the creditworthiness of counterparties, there can be no assurance that a counterparty will meet its obligations, especially during unusually adverse market conditions. To the extent a fund contracts with a limited number of counterparties, the fund's risk will be concentrated and events that affect the creditworthiness of any of those counterparties may have a pronounced effect on the fund. Derivatives are also subject to a number of other risks, including market risk, liquidity risk and operational risk. Since the value of derivatives is calculated and derived from the value of other assets, instruments, or references, there is a risk that they will be improperly valued. Derivatives also involve the risk that changes in their value may not correlate perfectly with the assets, rates, or indexes they are designed to hedge or closely track. Suitable derivatives transactions may not be available in all circumstances. The fund is also subject to the risk that the counterparty closes out the derivatives transactions upon the occurrence of certain triggering events. In addition, a manager may determine not to use derivatives to hedge or otherwise reduce risk exposure. Government legislation or regulation could affect the use of derivatives transactions and could limit a fund's ability to pursue its investment strategies.

A detailed discussion of various hedging and other strategic transactions appears in the SAI. To the extent that a fund utilizes the following list of certain derivatives and other strategic transactions, it will be subject to associated risks. The main risks of each appear below.

Credit default swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in transactions involving credit default swaps.

Foreign currency forward contracts. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), foreign currency risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving foreign currency forward contracts.

Futures contracts. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving futures contracts.

Interest-rate swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving interest-rate swaps.

Options. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving options. Counterparty risk does not apply to exchange-traded options.

Swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

High portfolio turnover risk

A high fund portfolio turnover rate (over 100%) generally involves correspondingly greater brokerage commission and tax expenses, which must be borne directly by a fund and its shareholders, respectively. The portfolio turnover rate of a fund may vary from year to year, as well as within a year.

Investment company securities risk

Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees. Investments in closed-end funds may involve the payment of substantial premiums above the value of such investment companies' portfolio securities.

JHVIT Lifestyle Portfolios asset transfer risk

The Lifestyle Balanced Portfolio, Lifestyle Conservative Portfolio, Lifestyle Growth Portfolio, and Lifestyle Moderate Portfolio (the "JHVIT Lifestyle Portfolios") are offered in connection with specific guaranteed benefits under variable annuity contracts (the "Contracts") issued by John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York (collectively, the "John Hancock Issuers").

The Contracts provide that the John Hancock Issuers can automatically transfer contract value between each JHVIT Lifestyle Portfolio and the JHVIT Select Bond Trust through a non-discretionary, systematic mathematical process. The purpose of these transfers is to attempt to protect contract value from declines due to market volatility, and thereby limit the John Hancock Issuers' exposure to risk under the guaranteed benefits under the Contracts. The timing and amount of any transfer of contract value under the John Hancock Issuers' process will depend on several factors including market

movements. In general, the higher the equity component of a JHVIT Lifestyle Portfolio, the more likely that contract value will be reallocated from a JHVIT Lifestyle Portfolio to the JHVIT Select Bond Trust when equity markets fall. These asset flows may negatively affect the performance of the JHVIT Lifestyle Portfolio and an underlying fund in which a JHVIT Lifestyle Portfolio invests by increasing the underlying fund's transaction costs and causing it to purchase or sell securities when it would not normally do so. It could be particularly disadvantageous for the underlying fund if it experiences outflows and needs to sell securities at a time of volatility in the markets, when values could be falling. Because the JHVIT Lifestyle Portfolios bear their proportionate share of the transaction costs of the underlying funds, increased underlying fund expenses may indirectly negatively affect the performance of the JHVIT Lifestyle Portfolios.

Leveraging risk

A fund's use of derivatives may cause its portfolio to be leveraged (i.e., the fund's exposure to underlying securities, assets or currencies exceeds its net asset value). Leveraging long exposures increases a fund's losses when the value of its investments declines. Because many derivatives have a leverage component (i.e., a notional value in excess of the assets needed to establish and/or maintain the derivative position), adverse changes in the value or level of the underlying asset, rate, or index may result in a loss substantially greater than the amount invested in the derivative itself. In the case of swaps, the risk of loss generally is related to a notional principal amount, even if the parties have not made any initial investment. Some derivatives have the potential for unlimited loss, regardless of the size of the initial investment.

Liquidity risk

The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Funds with principal investment strategies that involve investments in securities of companies with smaller market capitalizations, foreign securities, derivatives, or securities with substantial market and/or credit risk tend to have the greatest exposure to liquidity risk. Exposure to liquidity risk may be heightened for funds that invest in securities of emerging markets and related derivatives that are not widely traded, and that may be subject to purchase and sale restrictions.

The capacity of traditional dealers to engage in fixed-income trading has not kept pace with the bond market's growth. As a result, dealer inventories of corporate bonds, which indicate the ability to "make markets," i.e., buy or sell a security at the quoted bid and ask price, respectively, are at or near historic lows relative to market size. Because market makers provide stability to fixed-income markets, the significant reduction in dealer inventories could lead to decreased liquidity and increased volatility, which may become exacerbated during periods of economic or political stress.

Managed volatility portfolio hedging risk

There may be imperfect or even negative correlation between the price of the futures contracts and the price of the underlying securities. For example, futures contracts may not provide an effective hedge because changes in futures contract prices may not track those of the underlying securities or indexes they are intended to hedge. In addition, there are significant differences between the securities and futures markets that could result in an imperfect correlation between the markets, causing a given hedge not to achieve its objectives. The degree of imperfection of correlation depends on circumstances such as variations in speculative market demand for futures, including technical influences in futures trading, and differences between the financial instruments being hedged and the instruments underlying the standard contracts available for trading. A decision as to whether, when and how to hedge involves the exercise of skill and judgment, and even a well-conceived hedge may be unsuccessful to some degree because of market behavior or unexpected interest rate trends. In addition, the fund's investment in exchange-traded futures as a result of the risk management strategy could limit the upside participation of the fund in strong, rising markets with high volatility and could underperform funds that do not use a risk management strategy.

Operational and cybersecurity risk

With the increased use of technologies, such as mobile devices and "cloud"-based service offerings and the dependence on the internet and computer systems to perform necessary business functions, the fund's service providers are susceptible to operational and information or cybersecurity risks that could result in losses to the fund and its shareholders. Intentional cybersecurity breaches include unauthorized access to systems, networks, or devices (such as through "hacking" activity or "phishing"); infection from computer viruses or other malicious software code; and attacks that shut down, disable, slow, or otherwise disrupt operations, business processes, or website access or functionality. Cyber-attacks can also be carried out in a manner that does not require gaining unauthorized access, such as causing denial-of-service attacks on the service providers' systems or websites rendering them unavailable to intended users or via "ransomware" that renders the systems inoperable until appropriate actions are taken. In addition, unintentional incidents can occur, such as the inadvertent release of confidential information (possibly resulting in the violation of applicable privacy laws).

A cybersecurity breach could result in the loss or theft of customer data or funds, loss or theft of proprietary information or corporate data, physical damage to a computer or network system, or costs associated with system repairs. Such incidents could cause a fund, the advisor, a manager, or other service providers to incur regulatory penalties, reputational damage, additional compliance costs, litigation costs or financial loss. In addition, such incidents could affect issuers in which a fund invests, and thereby cause the fund's investments to lose value.

Cyber-events have the potential to materially affect the fund and the advisor's relationships with accounts, shareholders, clients, customers, employees, products, and service providers. The fund has established risk management systems reasonably designed to seek to reduce the risks associated with cyber-events. There is no guarantee that the fund will be able to prevent or mitigate the impact of any or all cyber-events.

The fund is exposed to operational risk arising from a number of factors, including, but not limited to, human error, processing and communication errors, errors of the fund's service providers, counterparties, or other third parties, failed or inadequate processes and technology or system failures.

In addition, other disruptive events, including (but not limited to) natural disasters and public health crises may adversely affect the fund's ability to conduct business, in particular if the fund's employees or the employees of its service providers are unable or unwilling to perform their responsibilities as a result of any such event. Even if the fund's employees and the employees of its service providers are able to work remotely, those remote work arrangements could result in the fund's business operations being less efficient than under normal circumstances, could lead to delays in its processing of transactions, and could increase the risk of cyber-events.

Quantitative modeling risk

Use of quantitative models carries the risk that the fund may underperform funds that do not utilize such models. The use of quantitative models may affect the fund's exposure to certain sectors or types of investments and may impact the fund's relative investment performance depending on whether such sectors or investments are in or out of favor in the market. Successful application of a quantitative model is dependent on the manager's skill in building and implementing the model. For example, human judgment plays a role in building, utilizing, testing, modifying, and implementing the financial algorithms and formulas used in these models. Quantitative models are subject to technical issues including programming and data inaccuracies, are based on assumptions, and rely on data that is subject to limitations (e.g., inaccuracies, staleness), any of which could adversely affect their effectiveness or predictive value. Quantitative models may not accurately predict future market movements or characteristics due to the fact that market performance can be affected by non-quantitative factors that are not easily integrated into quantitative analysis, among other factors.

Risk management strategies may not be successful, may limit upside potential or may permit or result in losses

The purposes of the risk management strategies are to attempt to limit the fund's total risk exposure during periods of high market volatility and reduce the fund's losses during market declines; however, there is no assurance that these strategies will be successful. These risk management strategies could limit the upside participation of the fund in rising equity markets during periods of high volatility. In instances of equity market declines followed by rising equity markets and significant levels of market volatility, these risk management strategies may detract from fund performance and at times prevent the fund from fully recovering losses by limiting the levels of exposure to equity markets. Due to the use of historical data in the models used in the risk management strategy, there can be delays, especially during volatile markets, in fully implementing the strategy when markets are declining causing the fund to experience greater losses than if the strategy had been fully implemented. There can also be delays, especially during volatile markets, in removing hedges designed to limit losses during declining markets when markets are rising strongly causing the fund to not fully participate in the rising market. The application of risk management techniques can be complex, and misjudgments in implementation may result in under- or over-allocations to equity, fixed-income and/or cash and cash equivalent exposure causing the fund to underperform or experience losses. Also, futures contracts may be subject to exchange-imposed daily price fluctuation limits, and trading may be halted if a contract's price moves above or below the limit on a given day. As a result, the fund may not be able to promptly liquidate unfavorable futures positions and could be required to hold such positions until the delivery date, regardless of changes in its value.

Since the characteristics of many securities change as markets change or time passes, the success of risk management techniques will be subject to the portfolio managers' ability to execute the strategy. Moreover, risk management strategies may increase portfolio transaction costs, which could cause or increase losses or reduce gains. Any one or more of these factors may prevent the fund from achieving the intended risk management goals or could cause the fund to underperform or experience losses (some of which may be sudden) or volatility for any particular period.

Short positions risk

In taking a short position, a fund seeks to profit from an anticipated decline in the value of a security or index of securities. If the security or index instead appreciates in value, the fund will incur losses by having to pay to close out its position at a higher price than the price it received to open that position. Unlike losses from declines in long positions in stocks or other securities (which may not exceed the original amount invested), the losses a fund may incur to close out a short position if the underlying security or index increases in value are potentially unlimited.

Short sales risk

A fund may make short sales of securities. This means a fund may sell a security that it does not own in anticipation of a decline in the market value of the security. A fund generally borrows the security to deliver to the buyer in a short sale. The fund must then buy the security at its market price when the borrowed security must be returned to the lender. Short sales involve costs and risk. The fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security. Further, if other short positions of the same security are closed out at the same time, a "short squeeze" can occur where demand exceeds the supply for the security sold short. A short squeeze makes it more likely that the fund will need to replace the borrowed security at an unfavorable price. A fund may also make short sales "against the box." In a short sale against the box, at the time of sale, the fund owns or has the right to acquire the identical security, or one equivalent in kind or amount, at no additional cost.

Subject to regulatory requirements, until a fund closes its short position or replaces a borrowed security, a fund will comply with all applicable regulatory requirements, including the Derivatives Rule.

Swaps risk

Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Target allocation risk

When a fund has a greater allocation to equity securities, it will be less conservative and have more equity securities risk exposure. These risks are explained under “Equity securities risk.” The risks associated with fixed-income and short-term fixed-income securities are explained under “Fixed-income securities risk,” “Interest-rate risk,” “Credit and counterparty risk,” and “Lower-rated fixed-income securities risk and high yield securities risk.”

Use of index futures risk

While the use of index futures may involve a small investment of cash, the losses to a fund could exceed the amount invested, and in certain cases even the total value of the fund’s assets, due to the embedded leverage provided by the derivative. Index futures may also result in a loss to the fund if the counterparty to the transaction does not perform.

ADDITIONAL INFORMATION ABOUT THE FUNDS’ PRINCIPAL RISKS

Unless otherwise noted, in this section, references to a single fund apply equally to all of the funds.

Asset allocation risk

Although asset allocation among different asset categories generally limits risk and exposure to any one category, the risk remains that the subadvisor may favor an asset category that performs poorly relative to the other asset categories. To the extent that alternative asset categories underperform the general stock market, the fund would perform poorly relative to a fund invested primarily in the general stock market.

Banking industry risk

Commercial banks (including “money center” regional and community banks), savings and loan associations and holding companies of the foregoing are especially subject to adverse effects of volatile interest rates, concentrations of loans in particular industries (such as real estate or energy) and significant competition. The profitability of these businesses is to a significant degree dependent upon the availability and cost of capital funds. Economic conditions in the real estate market may have a particularly strong effect on certain banks and savings associations. Commercial banks and savings associations are subject to extensive federal and, in many instances, state regulation. Neither such extensive regulation nor the federal insurance of deposits ensures the solvency or profitability of companies in this industry, and there is no assurance against losses in securities issued by such companies. Late in the first quarter of 2023, a number of U.S. domestic banks and foreign banks experienced financial difficulties and, in some cases, failures. Given the interconnectedness of the banking system, bank regulators took actions, including the Federal Reserve, which invoked the systemic risk exception, temporarily transferred all deposits—both insured and uninsured—and substantially all the assets of two failed banks into respective bridge banks and guaranteed depositors’ full access to their funds. Despite such response, there can be no certainty that the actions taken by banking regulators to limit the effect of those difficulties and failures on other banks or other financial institutions or on the U.S. or foreign economies generally will be effective. It is possible that more banks or other financial institutions will experience financial difficulties or fail, or other adverse developments may occur, which may affect adversely other U.S. or foreign financial institutions and economies.

Cash and cash equivalents risk

Under certain market conditions, such as during a rising stock market, rising interest rate or rising credit spread markets, the use of cash and/or cash equivalents, including money market instruments, could have a negative effect on the fund’s ability to achieve its investment objective and may negatively impact the fund’s performance. To the extent that the fund invests in a money market fund, the fund will indirectly bear a proportionate share of the money market fund’s expenses, in addition to the operating expenses of the fund, which are borne directly by fund shareholders. In addition, while money market funds seek to maintain a stable net asset value, the value of a money market fund is not guaranteed and investors in money market funds can lose money, which could detract from the fund’s performance.

Changing distribution levels risk

The distribution amounts paid by the fund generally depend on the amount of income and/or dividends paid by the fund’s investments. As a result of market, interest rate and other circumstances, the amount of cash available for distribution by the fund and the fund’s distribution rate may vary or decline. The risk of such variability is accentuated in currently prevailing market and interest rate circumstances.

Concentration risk

When a fund's investments are focused in one or more industries or sectors of the economy, they are less broadly invested across industries or sectors than other funds. This means that concentrated funds tend to be more volatile than other funds, and the values of their investments tend to go up and down more rapidly. In addition, a fund that invests in particular industries or sectors is particularly susceptible to the impact of market, economic, political, regulatory, and other conditions and risks affecting those industries or sectors. From time to time, a small number of companies may represent a large portion of a single industry or sector or a group of related industries or sectors as a whole. A downturn in the real estate industry may significantly detract from performance.

Consumer discretionary sector risk

The consumer discretionary sector may be affected by fluctuations in supply and demand, and may also be adversely affected by changes in consumer spending as a result of world events, political and economic conditions, commodity price volatility, changes in exchange rates, imposition of import controls, increased competition, depletion of resources, and labor relations.

Convertible securities risk

Convertible securities are subject to certain risks of both equity and debt securities. Convertible securities may be converted or exchanged (by the holder or by the issuer) into shares of the underlying common stock (or cash or securities of equivalent value) at a stated exchange ratio. A convertible security may also be called for redemption or conversion by the issuer after a particular date and under certain circumstances (including a specified price) established upon issue. Convertible securities generally offer lower interest or dividend yields than nonconvertible fixed-income securities of similar credit quality because of the potential for capital appreciation. The market values of convertible securities tend to decline as interest rates increase and, conversely, to increase as interest rates decline. However, a convertible security's market value also tends to reflect the market price of common stock of the issuing company, particularly when that stock price is greater than the convertible security's conversion price. The conversion price is defined as the predetermined price or exchange ratio at which the convertible security can be converted or exchanged for the underlying common stock. As the market price of the underlying common stock declines below the conversion price, the price of the convertible security tends to be increasingly influenced by the yield of the convertible security. Thus, it may not decline in price to the same extent as the underlying common stock. In the event of a liquidation of the issuing company, convertible securities generally entail less risk than the company's common stock.

Credit and counterparty risk

This is the risk that an issuer of a U.S. government security, the issuer or guarantor of a fixed-income security, the counterparty to an over-the-counter (OTC) derivatives contract (see "Hedging, derivatives, and other strategic transactions risk"), or a borrower of a fund's securities will be unable or unwilling to make timely principal, interest, or settlement payments, or otherwise honor its obligations. Credit risk associated with investments in fixed-income securities relates to the ability of the issuer to make scheduled payments of principal and interest on an obligation. A fund that invests in fixed-income securities is subject to varying degrees of risk that the issuers of the securities will have their credit ratings downgraded or will default, potentially reducing the fund's share price and income level. Nearly all fixed-income securities are subject to some credit risk, which may vary depending upon whether the issuers of the securities are corporations, domestic or foreign governments, or their subdivisions or instrumentalities. U.S. government securities are subject to varying degrees of credit risk depending upon whether the securities are supported by the full faith and credit of the United States; supported by the ability to borrow from the U.S. Treasury; supported only by the credit of the issuing U.S. government agency, instrumentality, or corporation; or otherwise supported by the United States. For example, issuers of many types of U.S. government securities (e.g., the Federal Home Loan Mortgage Corporation (Freddie Mac), Federal National Mortgage Association (Fannie Mae), and Federal Home Loan Banks), although chartered or sponsored by Congress, are not funded by congressional appropriations, and their fixed-income securities, including asset-backed and mortgage-backed securities, are neither guaranteed nor insured by the U.S. government. An agency of the U.S. government has placed Fannie Mae and Freddie Mac into conservatorship, a statutory process with the objective of returning the entities to normal business operations. It is unclear what effect this conservatorship will have on the securities issued or guaranteed by Fannie Mae or Freddie Mac. As a result, these securities are subject to more credit risk than U.S. government securities that are supported by the full faith and credit of the United States (e.g., U.S. Treasury bonds). When a fixed-income security is not rated, a manager may have to assess the risk of the security itself. Asset-backed securities, whose principal and interest payments are supported by pools of other assets, such as credit card receivables and automobile loans, are subject to further risks, including the risk that the obligors of the underlying assets default on payment of those assets.

Funds that invest in below-investment-grade securities, also called junk bonds (e.g., fixed-income securities rated Ba or lower by Moody's Investors Service, Inc. or BB or lower by S&P Global Ratings or Fitch Ratings, as applicable, at the time of investment, or determined by a manager to be of comparable quality to securities so rated) are subject to increased credit risk. The sovereign debt of many foreign governments, including their subdivisions and instrumentalities, falls into this category. Below-investment-grade securities offer the potential for higher investment returns than higher-rated securities, but they carry greater credit risk: their issuers' continuing ability to meet principal and interest payments is considered speculative, they are more susceptible to real or perceived adverse economic and competitive industry conditions, and they may be less liquid than higher-rated securities.

In addition, a fund is exposed to credit risk to the extent that it makes use of OTC derivatives (such as forward foreign currency contracts and/or swap contracts) and engages to a significant extent in the lending of fund securities or the use of repurchase agreements. OTC derivatives transactions can

be closed out with the other party to the transaction. If the counterparty defaults, a fund will have contractual remedies, but there is no assurance that the counterparty will be able to meet its contractual obligations or that, in the event of default, a fund will succeed in enforcing them. A fund, therefore, assumes the risk that it may be unable to obtain payments owed to it under OTC derivatives contracts or that those payments may be delayed or made only after the fund has incurred the costs of litigation. While the manager intends to monitor the creditworthiness of contract counterparties, there can be no assurance that the counterparty will be in a position to meet its obligations, especially during unusually adverse market conditions.

Currency risk

If currencies do not perform as the manager expects, the fund could have significant losses which exceed the amount invested in the currency instruments since currency transactions involve a small investment of cash relative to the magnitude of the risks assumed, thereby magnifying the impact of any resulting gain or loss. Currency risk includes the risk that fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Currency risk includes both the risk that currencies in which a fund's investments are traded, or currencies in which a fund has taken an active investment position, will decline in value relative to the U.S. dollar and, in the case of hedging positions, that the U.S. dollar will decline in value relative to the currency being hedged. Currency rates in foreign countries may fluctuate significantly for a number of reasons, including the forces of supply and demand in the foreign exchange markets, actual or perceived changes in interest rates, and intervention (or the failure to intervene) by U.S. or foreign governments or central banks, or by currency controls or political developments in the U.S. or abroad. Certain funds may engage in proxy hedging of currencies by entering into derivative transactions with respect to a currency whose value is expected to correlate to the value of a currency the fund owns or wants to own. This presents the risk that the two currencies may not move in relation to one another as expected. In that case, the fund could lose money on its investment and also lose money on the position designed to act as a proxy hedge. A fund may also take active currency positions and may cross-hedge currency exposure represented by its securities into another foreign currency. This may result in a fund's currency exposure being substantially different than that suggested by its securities investments. All funds with foreign currency holdings and/or that invest or trade in securities denominated in foreign currencies or related derivative instruments may be adversely affected by changes in foreign currency exchange rates. Derivative foreign currency transactions (such as futures, forwards and swaps) may also involve leveraging risk, in addition to currency risk. Leverage may disproportionately increase a fund's portfolio losses and reduce opportunities for gain when interest rates, stock prices or currency rates are changing.

Defaulted debt risk

Investing in defaulted debt securities is speculative and involves substantial risks in addition to the risks of investing in high-yield securities that have not defaulted. The fund generally will not receive interest payments on defaulted debt securities, and there is a substantial risk that principal will not be repaid. A fund investing in defaulted debt securities may incur additional expenses to the extent that it is required to seek recovery upon a default in the payment of principal of or interest on the securities. In any reorganization or liquidation proceeding relating to defaulted debt, a fund may lose its entire investment in such securities or may be required to accept cash or securities with a value lower than the fund's original investment. Defaulted debt securities and any securities received in exchange for defaulted debt securities may be subject to restrictions on resale.

Economic and market events risk

Events in certain sectors historically have resulted, and may in the future result, in an unusually high degree of volatility in the financial markets, both domestic and foreign. These events have included, but are not limited to: bankruptcies, corporate restructurings, and other similar events; bank failures; governmental efforts to limit short selling and high frequency trading; measures to address U.S. federal and state budget deficits; social, political, and economic instability in Europe; economic stimulus by the Japanese central bank; dramatic changes in energy prices and currency exchange rates; and China's economic slowdown. Interconnected global economies and financial markets increase the possibility that conditions in one country or region might adversely impact issuers in a different country or region. Both domestic and foreign equity markets have experienced increased volatility and turmoil, with issuers that have exposure to the real estate, mortgage, and credit markets particularly affected. Financial institutions could suffer losses as interest rates rise or economic conditions deteriorate.

In addition, relatively high market volatility and reduced liquidity in credit and fixed-income markets may adversely affect many issuers worldwide. Actions taken by the U.S. Federal Reserve (Fed) or foreign central banks to stimulate or stabilize economic growth, such as interventions in currency markets, could cause high volatility in the equity and fixed-income markets. Reduced liquidity may result in less money being available to purchase raw materials, goods, and services from emerging markets, which may, in turn, bring down the prices of these economic staples. It may also result in emerging-market issuers having more difficulty obtaining financing, which may, in turn, cause a decline in their securities prices.

Beginning in March 2022, the Fed began increasing interest rates and has signaled the potential for further increases. As a result, risks associated with rising interest rates are currently heightened. It is difficult to accurately predict the pace at which the Fed will increase interest rates any further, or the timing, frequency or magnitude of any such increases, and the evaluation of macro-economic and other conditions could cause a change in approach in the future. Any such increases generally will cause market interest rates to rise and could cause the value of a fund's investments, and the fund's net asset value (NAV), to decline, potentially suddenly and significantly. As a result, the fund may experience high redemptions and, as a result, increased portfolio turnover, which could increase the costs that the fund incurs and may negatively impact the fund's performance.

In addition, as the Fed increases the target Fed funds rate, any such rate increases, among other factors, could cause markets to experience continuing high volatility. A significant increase in interest rates may cause a decline in the market for equity securities. These events and the possible resulting market volatility may have an adverse effect on the fund.

Political turmoil within the United States and abroad may also impact the fund. Although the U.S. government has honored its credit obligations, it remains possible that the United States could default on its obligations. While it is impossible to predict the consequences of such an unprecedented event, it is likely that a default by the United States would be highly disruptive to the U.S. and global securities markets and could significantly impair the value of the fund's investments. Similarly, political events within the United States at times have resulted, and may in the future result, in a shutdown of government services, which could negatively affect the U.S. economy, decrease the value of many fund investments, and increase uncertainty in or impair the operation of the U.S. or other securities markets. In recent years, the U.S. renegotiated many of its global trade relationships and imposed or threatened to impose significant import tariffs. These actions could lead to price volatility and overall declines in U.S. and global investment markets.

Uncertainties surrounding the sovereign debt of a number of European Union (EU) countries and the viability of the EU have disrupted and may in the future disrupt markets in the United States and around the world. If one or more countries leave the EU or the EU dissolves, the global securities markets likely will be significantly disrupted. On January 31, 2020, the United Kingdom (UK) left the EU, commonly referred to as "Brexit," the UK ceased to be a member of the EU, and the UK and EU entered into a Trade and Cooperation Agreement. While the full impact of Brexit is unknown, Brexit has already resulted in volatility in European and global markets. There remains significant market uncertainty regarding Brexit's ramifications, and the range and potential implications of possible political, regulatory, economic, and market outcomes are difficult to predict.

A widespread health crisis such as a global pandemic could cause substantial market volatility, exchange trading suspensions and closures, which may lead to less liquidity in certain instruments, industries, sectors or the markets generally, and may ultimately affect fund performance. For example, the coronavirus (COVID-19) pandemic has resulted and may continue to result in significant disruptions to global business activity and market volatility due to disruptions in market access, resource availability, facilities operations, imposition of tariffs, export controls and supply chain disruption, among others. While many countries have lifted some or all restrictions related to the coronavirus (COVID-19) and the United States ended the public health emergency and national emergency declarations relating to the coronavirus (COVID-19) pandemic on May 11, 2023, the continued impact of coronavirus (COVID-19) and related variants is uncertain. The impact of a health crisis and other epidemics and pandemics that may arise in the future, could affect the global economy in ways that cannot necessarily be foreseen at the present time. A health crisis may exacerbate other pre-existing political, social and economic risks. Any such impact could adversely affect the fund's performance, resulting in losses to your investment.

Political and military events, including in Ukraine, North Korea, Russia, Venezuela, Iran, Syria, and other areas of the Middle East, and nationalist unrest in Europe and South America, also may cause market disruptions.

As a result of continued political tensions and armed conflicts, including the Russian invasion of Ukraine commencing in February of 2022, the extent and ultimate result of which are unknown at this time, the United States and the EU, along with the regulatory bodies of a number of countries, have imposed economic sanctions on certain Russian corporate entities and individuals, and certain sectors of Russia's economy, which may result in, among other things, the continued devaluation of Russian currency, a downgrade in the country's credit rating, and/or a decline in the value and liquidity of Russian securities, property or interests. These sanctions could also result in the immediate freeze of Russian securities and/or funds invested in prohibited assets, impairing the ability of a fund to buy, sell, receive or deliver those securities and/or assets. These sanctions or the threat of additional sanctions could also result in Russia taking counter measures or retaliatory actions, which may further impair the value and liquidity of Russian securities. The United States and other nations or international organizations may also impose additional economic sanctions or take other actions that may adversely affect Russia-exposed issuers and companies in various sectors of the Russian economy. Any or all of these potential results could lead Russia's economy into a recession. Economic sanctions and other actions against Russian institutions, companies, and individuals resulting from the ongoing conflict may also have a substantial negative impact on other economies and securities markets both regionally and globally, as well as on companies with operations in the conflict region, the extent to which is unknown at this time. The United States and the EU have also imposed similar sanctions on Belarus for its support of Russia's invasion of Ukraine. Additional sanctions may be imposed on Belarus and other countries that support Russia. Any such sanctions could present substantially similar risks as those resulting from the sanctions imposed on Russia, including substantial negative impacts on the regional and global economies and securities markets.

In addition, there is a risk that the prices of goods and services in the United States and many foreign economies may decline over time, known as deflation. Deflation may have an adverse effect on stock prices and creditworthiness and may make defaults on debt more likely. If a country's economy slips into a deflationary pattern, it could last for a prolonged period and may be difficult to reverse. Further, there is a risk that the present value of assets or income from investments will be less in the future, known as inflation. Inflation rates may change frequently and drastically as a result of various factors, including unexpected shifts in the domestic or global economy, and a fund's investments may be affected, which may reduce a fund's performance. Further, inflation may lead to the rise in interest rates, which may negatively affect the value of debt instruments held by the fund, resulting in a negative impact on a fund's performance. Generally, securities issued in emerging markets are subject to a greater risk of inflationary or deflationary forces, and more developed markets are better able to use monetary policy to normalize markets.

Equity securities risk

Common and preferred stocks represent equity ownership in a company. Stock markets are volatile. The price of equity securities will fluctuate, and can decline and reduce the value of a fund investing in equities. The price of equity securities fluctuates based on changes in a company's financial condition and overall market and economic conditions. The value of equity securities purchased by a fund could decline if the financial condition of the companies in which the fund is invested declines, or if overall market and economic conditions deteriorate. An issuer's financial condition could decline as a result of poor management decisions, competitive pressures, technological obsolescence, undue reliance on suppliers, labor issues, shortages, corporate restructurings, fraudulent disclosures, irregular and/or unexpected trading activity among retail investors, or other factors. Changes in the financial condition of a single issuer can impact the market as a whole.

Even a fund that invests in high-quality, or blue chip, equity securities, or securities of established companies with large market capitalizations (which generally have strong financial characteristics), can be negatively impacted by poor overall market and economic conditions. Companies with large market capitalizations may also have less growth potential than smaller companies and may be less able to react quickly to changes in the marketplace.

A fund generally does not attempt to time the market. Because of its exposure to equities, the possibility that stock market prices in general will decline over short or extended periods subjects the fund to unpredictable declines in the value of its investments, as well as periods of poor performance.

Growth investment style risk. Certain equity securities (generally referred to as growth securities) are purchased primarily because a manager believes that these securities will experience relatively rapid earnings growth. Growth securities typically trade at higher multiples of current earnings than other securities. Growth securities are often more sensitive to market fluctuations than other securities because their market prices are highly sensitive to future earnings expectations. At times when it appears that these expectations may not be met, growth stock prices typically fall.

Value investment style risk. Certain equity securities (generally referred to as value securities) are purchased primarily because they are selling at prices below what the manager believes to be their fundamental value and not necessarily because the issuing companies are expected to experience significant earnings growth. The fund bears the risk that the companies that issued these securities may not overcome the adverse business developments or other factors causing their securities to be perceived by the manager to be underpriced or that the market may never come to recognize their fundamental value. A value security may not increase in price, as anticipated by the manager investing in such securities, if other investors fail to recognize the company's value and bid up the price or invest in markets favoring faster growing companies. The fund's strategy of investing in value securities also carries the risk that in certain markets, value securities will underperform growth securities. In addition, securities issued by U.S. entities with substantial foreign operations may involve risks relating to economic, political or regulatory conditions in foreign countries.

ESG integration risk (applicable to all funds except 500 Index Trust, International Equity Index Trust, Mid Cap Index Trust, Money Market Trust, Short Term Government Income Trust, Small Cap Index Trust, Total Bond Market Trust, and Total Stock Market Index Trust)

The manager considers ESG factors that it deems relevant or additive, along with other material factors and analysis, when managing a fund. The portion of a fund's investments for which a manager considers these ESG factors may vary, and could increase or decrease over time. A manager may consider these ESG factors on all or a meaningful portion of a fund's investments. In certain situations, the extent to which these ESG factors may be applied according to the manager's integrated investment process may not include U.S. Treasuries, government securities, or other asset classes. ESG factors may include, but are not limited to, matters regarding board diversity, climate change policies, and supply chain and human rights policies. Incorporating ESG criteria and making investment decisions based on certain ESG characteristics, as determined by the manager, carries the risk that a fund may perform differently, including underperforming, funds that do not utilize ESG criteria, or funds that utilize different ESG criteria. Integration of ESG factors into a fund's investment process may result in a manager making different investments for a fund than for a fund with a similar investment universe and/or investment style that does not incorporate such considerations in its investment strategy or processes, and a fund's investment performance may be affected. Because ESG factors are one of many considerations for a fund, the manager may nonetheless include companies with low ESG characteristics or exclude companies with high ESG characteristics in a fund's investments.

The ESG characteristics utilized in a fund's investment process may change over time, and different ESG characteristics may be relevant to different investments. Although the manager has established its own structure to oversee ESG integration in accordance with the fund's investment objective and strategies, successful integration of ESG factors will depend on the manager's skill in researching, identifying, and applying these factors, as well as on the availability of relevant data. The method of evaluating ESG factors and subsequent impact on portfolio composition, performance, proxy voting decisions and other factors, is subject to the interpretation of the manager in accordance with the fund's investment objective and strategies. ESG factors may be evaluated differently by different managers, and may not carry the same meaning to all investors and managers. The manager may employ active shareowner engagement to raise ESG issues with the management of select portfolio companies. The regulatory landscape with respect to ESG investing in the United States is evolving and any future rules or regulations may require a fund to change its investment process with respect to ESG integration.

Exchange-traded funds (ETFs) risk

ETFs are a type of investment company bought and sold on a securities exchange. A fund could purchase shares of an ETF to gain exposure to a portion of the U.S. or a foreign market. The risks of owning shares of an ETF include the risks of directly owning the underlying securities and other instruments

the ETF holds. A lack of liquidity in an ETF (e.g., absence of an active trading market) could result in the ETF being more volatile than its underlying securities. The existence of extreme market volatility or potential lack of an active trading market for an ETF's shares could result in the ETF's shares trading at a significant premium or discount to its net asset value (NAV). An ETF has its own fees and expenses, which are indirectly borne by the fund. A fund may also incur brokerage and other related costs when it purchases and sells ETFs. Also, in the case of passively-managed ETFs, there is a risk that an ETF may fail to closely track the index or market segment that it is designed to track due to delays in the ETF's implementation of changes to the composition of the index or other factors.

Financial services sector risk

A fund investing principally in securities of companies in the financial services sector is particularly vulnerable to events affecting that sector. Companies in the financial services sector may include, but are not limited to, commercial and industrial banks, savings and loan associations and their holding companies, consumer and industrial finance companies, diversified financial services companies, investment banking, securities brokerage and investment advisory companies, leasing companies, and insurance companies. The types of companies that compose the financial services sector may change over time. These companies are all subject to extensive regulation, rapid business changes, volatile performance dependent upon the availability and cost of capital, prevailing interest rates, and significant competition. General economic conditions significantly affect these companies. Credit and other losses resulting from the financial difficulty of borrowers or other third parties have a potentially adverse effect on companies in this sector. Investment banking, securities brokerage, and investment advisory companies are particularly subject to government regulation and the risks inherent in securities trading and underwriting activities. In addition, certain financial services companies face shrinking profit margins due to new competitors, the cost of new technology, and the pressure to compete globally.

Fixed-income securities risk

Fixed-income securities are generally subject to two principal types of risk, as well as other risks described below: (1) interest-rate risk and (2) credit quality risk.

Interest-rate risk. Fixed-income securities are affected by changes in interest rates. When interest rates decline, the market value of fixed-income securities generally can be expected to rise. Conversely, when interest rates rise, the market value of fixed-income securities generally can be expected to decline. The longer the duration or maturity of a fixed-income security, the more susceptible it is to interest-rate risk. Duration is a measure of the price sensitivity of a debt security, or a fund that invests in a portfolio of debt securities, to changes in interest rates, whereas the maturity of a security measures the time until final payment is due. Duration measures sensitivity more accurately than maturity because it takes into account the time value of cash flows generated over the life of a debt security. Recent and potential future changes in government monetary policy may affect interest rates.

Beginning in March 2022, the Federal Reserve Board (Fed) began increasing interest rates and has signaled the potential for further increases. It is difficult to accurately predict the pace at which the Fed will increase interest rates any further, or the timing, frequency or magnitude of any such increases, and the evaluation of macro-economic and other conditions could cause a change in approach in the future. Any such increases generally will cause market interest rates to rise and could cause the value of a fund's investments, and the fund's net asset value (NAV), to decline, potentially suddenly and significantly. As a result, the fund may experience high redemptions and, as a result, increased portfolio turnover, which could increase the costs that the fund incurs and may negatively impact the fund's performance.

Additionally, the value of inflation-indexed securities is subject to the effects of changes in market interest rates caused by factors other than inflation ("real interest rates"). If interest rates rise due to reasons other than inflation, the fund's investment in these securities may not be protected to the extent that the increase is not reflected in the security's inflation measure. Generally, when real interest rates rise, the value of inflation-indexed securities will fall and the fund's value may decline as a result of this exposure to these securities.

In response to certain economic disruptions, governmental authorities and regulators typically respond with significant fiscal and monetary policy changes, including considerably lowering interest rates, which, in some cases could result in negative interest rates. These actions, including their reversal or potential ineffectiveness, could further increase volatility in securities and other financial markets and reduce market liquidity. To the extent the fund has a bank deposit or holds a debt instrument with a negative interest rate to maturity, the fund would generate a negative return on that investment. Similarly, negative rates on investments by money market funds and similar cash management products could lead to losses on investments, including on investments of the fund's uninvested cash.

With regard to Money Market Trust, a sharp and unexpected rise in interest rates could impair the fund's ability to maintain a stable net asset value. A low interest rate environment may prevent the fund from providing a positive yield to shareholders or paying fund expenses out of fund assets and could impair the fund's ability to maintain a stable net asset value.

Credit quality risk. Fixed-income securities are subject to the risk that the issuer of the security will not repay all or a portion of the principal borrowed and will not make all interest payments. If the credit quality of a fixed-income security deteriorates after a fund has purchased the security, the market value of the security may decrease and lead to a decrease in the value of the fund's investments. An issuer's credit quality could deteriorate as a result of poor management decisions, competitive pressures, technological obsolescence, undue reliance on suppliers, labor issues, shortages, corporate restructurings, fraudulent disclosures, or other factors. Funds that may invest in lower-rated fixed-income securities, commonly referred to as junk securities, are riskier than funds that may invest in higher-rated fixed-income securities.

Investment-grade fixed-income securities in the lowest rating category risk. Investment-grade fixed-income securities in the lowest rating category (such as Baa by Moody's Investors Service, Inc. or BBB by S&P Global Ratings or Fitch Ratings, as applicable, and comparable unrated securities) involve a higher degree of risk than fixed-income securities in the higher rating categories. While such securities are considered investment-grade quality and are deemed to have adequate capacity for payment of principal and interest, such securities lack outstanding investment characteristics and have speculative characteristics as well. For example, changes in economic conditions or other circumstances are more likely to lead to a weakened capacity to make principal and interest payments than is the case with higher-grade securities.

Prepayment of principal risk. Many types of debt securities, including floating-rate loans, are subject to prepayment risk. Prepayment risk is the risk that, when interest rates fall, certain types of obligations will be paid off by the borrower more quickly than originally anticipated and the fund may have to invest the proceeds in securities with lower yields. Securities subject to prepayment risk can offer less potential for gains when the credit quality of the issuer improves.

Floating rate loans risk

Floating rate loans are generally rated below investment-grade, or if unrated, determined by the manager to be of comparable quality. They are generally considered speculative because they present a greater risk of loss, including default, than higher quality debt instruments. Such investments may, under certain circumstances, be particularly susceptible to liquidity and valuation risks. Although certain floating rate loans are collateralized, there is no guarantee that the value of the collateral will be sufficient or available to satisfy the borrower's obligation. In times of unusual or adverse market, economic or political conditions, floating rate loans may experience higher than normal default rates. In the event of a serious credit event the value of the fund's investments in floating rate loans are more likely to decline. The secondary market for floating rate loans is limited and, therefore, the fund's ability to sell or realize the full value of its investment in these loans to reinvest sale proceeds or to meet redemption obligations may be impaired. In addition, floating rate loans generally are subject to extended settlement periods that may be longer than seven days. As a result, the fund may be adversely affected by selling other investments at an unfavorable time and/or under unfavorable conditions to meet redemption requests or pursue other investment opportunities. In addition, certain floating rate loans may be "covenant-lite" loans that may contain fewer or less restrictive covenants on the borrower or may contain other borrower-friendly characteristics. The fund may experience relatively greater difficulty or delays in enforcing its rights on its holdings of certain covenant-lite loans and debt securities than its holdings of loans or securities with the usual covenants.

In certain circumstances, floating rate loans may not be deemed to be securities. As a result, the fund may not have the protection of the anti-fraud provisions of the federal securities laws. In such cases, the fund generally must rely on the contractual provisions in the loan agreement and common-law fraud protections under applicable state law.

Foreign securities risk

Funds that invest in securities traded principally in securities markets outside the United States are subject to additional and more varied risks, as the value of foreign securities may change more rapidly and extremely than the value of U.S. securities. Less information may be publicly available regarding foreign issuers, including foreign government issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The securities markets of many foreign countries are relatively small, with a limited number of companies representing a small number of industries. Additionally, issuers of foreign securities may not be subject to the same degree of regulation as U.S. issuers. Reporting, accounting, and auditing standards of foreign countries differ, in some cases significantly, from U.S. standards. There are generally higher commission rates on foreign portfolio transactions, transfer taxes, higher custodial costs, and the possibility that foreign taxes will be charged on dividends and interest payable on foreign securities, some or all of which may not be reclaimable. Also, adverse changes in investment or exchange control regulations (which may include suspension of the ability to transfer currency or assets from a country); political changes; or diplomatic developments could adversely affect a fund's investments. In the event of nationalization, expropriation, confiscatory taxation, or other confiscation, the fund could lose a substantial portion of, or its entire investment in, a foreign security. Some of the foreign securities risks are also applicable to funds that invest a material portion of their assets in securities of foreign issuers traded in the United States.

Depository receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depository receipt is dependent upon the market price of the underlying foreign equity security. Depository receipts are also subject to liquidity risk. Additionally, the Holding Foreign Companies Accountable Act (HFCAA) could cause securities of foreign companies, including American depository receipts, to be delisted from U.S. stock exchanges if the companies do not allow the U.S. government to oversee the auditing of their financial information. Although the requirements of the HFCAA apply to securities of all foreign issuers, the SEC has thus far limited its enforcement efforts to securities of Chinese companies. If securities are delisted, a fund's ability to transact in such securities will be impaired, and the liquidity and market price of the securities may decline. The fund may also need to seek other markets in which to transact in such securities, which could increase the fund's costs.

Currency risk. Currency risk is the risk that fluctuations in exchange rates may adversely affect the U.S. dollar value of a fund's investments. Currency risk includes both the risk that currencies in which a fund's investments are traded, or currencies in which a fund has taken an active investment position, will decline in value relative to the U.S. dollar and, in the case of hedging positions, that the U.S. dollar will decline in value relative to the currency being hedged. Currency rates in foreign countries may fluctuate significantly for a number of reasons, including the forces of supply and demand in the foreign exchange markets, actual or perceived changes in interest rates, intervention (or the failure to intervene) by U.S. or

foreign governments or central banks, or currency controls or political developments in the United States or abroad. Certain funds may engage in proxy hedging of currencies by entering into derivative transactions with respect to a currency whose value is expected to correlate to the value of a currency the fund owns or wants to own. This presents the risk that the two currencies may not move in relation to one another as expected. In that case, the fund could lose money on its investment and also lose money on the position designed to act as a proxy hedge. Certain funds may also take active currency positions and may cross-hedge currency exposure represented by their securities into another foreign currency. This may result in a fund's currency exposure being substantially different than that suggested by its securities investments. All funds with foreign currency holdings and/or that invest or trade in securities denominated in foreign currencies or related derivative instruments may be adversely affected by changes in foreign currency exchange rates. Derivative foreign currency transactions (such as futures, forwards, and swaps) may also involve leveraging risk, in addition to currency risk. Leverage may disproportionately increase a fund's portfolio losses and reduce opportunities for gain when interest rates, stock prices, or currency rates are changing.

Emerging-market risk. Investments in the securities of issuers based in countries with emerging-market economies are subject to greater levels of risk and uncertainty than investments in more-developed foreign markets, since emerging-market securities may present market, credit, currency, liquidity, legal, political, and other risks greater than, or in addition to, the risks of investing in developed foreign countries. These risks include high currency exchange-rate fluctuations; increased risk of default (including both government and private issuers); greater social, economic, and political uncertainty and instability (including the risk of war); more substantial governmental involvement in the economy; less governmental supervision and regulation of the securities markets and participants in those markets; controls on foreign investment and limitations on repatriation of invested capital and on a fund's ability to exchange local currencies for U.S. dollars; unavailability of currency hedging techniques in certain emerging-market countries; the fact that companies in emerging-market countries may be newly organized, smaller, and less seasoned; the difference in, or lack of, auditing and financial reporting requirements or standards, which may result in the unavailability of material information about issuers; different clearance and settlement procedures, which may be unable to keep pace with the volume of securities transactions or otherwise make it difficult to engage in such transactions; difficulties in obtaining and/or enforcing legal judgments against non-U.S. companies and non-U.S. persons, including company directors and officers, in foreign jurisdictions; and significantly smaller market capitalizations of emerging-market issuers. In addition, shareholders of emerging market issuers, such as the fund, often have limited rights and few practical remedies in emerging markets. Finally, the risks associated with investments in emerging markets often are significant, and vary from jurisdiction to jurisdiction and company to company.

Frontier-market risk. Frontier-market countries generally have smaller economies and less-developed capital markets or legal, regulatory, and political systems than traditional emerging-market countries. As a result, the risks of investing in emerging-market countries are magnified in frontier-market countries. Potential circumstances that may result in magnified risks in frontier-market countries include (i) extreme price volatility and illiquidity, (ii) government ownership or control of parts of the private sector or other protectionist measures, (iii) large currency fluctuations, (iv) limited investment opportunities, and (v) inadequate investor protections and regulatory enforcement. In certain frontier-market countries, fraud and corruption may be more prevalent than in developed-market countries.

Greater China risk. Although they are larger and/or more established than many emerging markets, the markets of the Greater China region function in many ways as emerging markets and carry the high levels of risks associated with emerging market economies. In addition, there are risks particular to the region, including less developed trading markets, acute political risks such as possible negative repercussions resulting from China's relationship with Taiwan or Hong Kong, and restrictions on monetary repatriation or other adverse government actions. In addition, investments in Taiwan could be adversely affected by its political relationship with China and because Taiwan does not exercise the same level of control over its economy as the government of the People's Republic of China (PRC) does with respect to Mainland China's economy, changes to its political and economic relationship with the PRC could adversely impact a fund's investments. Further, the attitude of the PRC toward growth and capitalism is uncertain, and the markets of Hong Kong and Mainland China could be hurt significantly by any government interference or any material change in government policy. For example, a government may restrict investment in companies or industries considered important to national interests, or intervene in the financial markets, such as by imposing trading restrictions, or banning or curtailing short selling. A small number of companies and industries may represent a relatively large portion of the Greater China market as a whole. All of these factors combined mean that the fund is more likely to experience greater price volatility and lower liquidity than a portfolio that invests substantially in equity securities of U.S. issuers.

Variable Interest Entities (VIEs) are widely used by China-based companies where China restricts or prohibits foreign ownership in certain sectors, including telecommunications, technology, media, and education. In a typical VIE structure, a shell company is set up in an offshore jurisdiction and enters into contractual arrangements with a China-based operating company. The VIE lists on a U.S. exchange and investors then purchase the stock issued by a VIE. VIE structures do not offer the same level of investor protections as direct ownership and investors may experience losses if VIE structures are altered, contractual disputes emerge, or the legal status of the VIE structure is prohibited under Chinese law.

Hong Kong Bond Connect Program (Bond Connect) risk. Trading in China bonds listed and traded on certain Chinese stock exchanges through Bond Connect, a mutual market access program designed to, among other things, enable foreign investment in the People's Republic of China (PRC) via brokers in Hong Kong, is subject to both a number of restrictions imposed by Chinese securities regulations and local exchange listing rules as well as certain risks. Bonds listed on Bond Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Bond Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any

changes in laws, regulations and policies applicable to Bond Connect may affect bond prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Hong Kong Stock Connect Program (Stock Connect) risk. Trading in China A-Shares listed and traded on certain Chinese stock exchanges through Stock Connect, a mutual market access program designed to, among other things, enable foreign investment in the People's Republic of China (PRC) via brokers in Hong Kong, is subject to both a number of restrictions imposed by Chinese securities regulations and local exchange listing rules as well as certain risks. Securities listed on Stock Connect may lose purchase eligibility, which could adversely affect the fund's performance. Trading through Stock Connect is subject to trading, clearance, and settlement procedures that may continue to develop as the program matures. Any changes in laws, regulations and policies applicable to Stock Connect may affect China A-Share prices. These risks are heightened by the underdeveloped state of the PRC's investment and banking systems in general.

Geographic focus risk

A fund's performance will be closely tied to the market, currency, political, economic, regulatory, geopolitical, and other conditions in the countries and regions in which the fund's assets are invested. These conditions include anticipated or actual government budget deficits or other financial difficulties, levels of inflation and unemployment, fiscal and monetary controls, and political and social instability in such countries and regions. To the extent the fund focuses its investments in a single country, a small number of countries, or a particular geographic region, its performance may be driven largely by country or region performance and could fluctuate more widely than if the fund were more geographically diversified.

Healthcare sector risk

Health sciences industries may be affected by product obsolescence, thin capitalization, limited product lines, markets, and financial resources, or personnel challenges and legislative or regulatory activities affecting the healthcare sector, such as approval policies for drugs, medical devices, or procedures, and changes in governmental and private payment systems and product liabilities.

Hedging, derivatives, and other strategic transactions risk

The ability of a fund to utilize hedging, derivatives, and other strategic transactions to benefit the fund will depend in part on its manager's ability to predict pertinent market movements and market risk, counterparty risk, credit risk, interest-rate risk, and other risk factors, none of which can be assured. The skills required to utilize hedging and other strategic transactions are different from those needed to select a fund's securities. Even if the manager only uses hedging and other strategic transactions in a fund primarily for hedging purposes or to gain exposure to a particular securities market, if the transaction does not have the desired outcome, it could result in a significant loss to a fund. The amount of loss could be more than the principal amount invested. These transactions may also increase the volatility of a fund and may involve a small investment of cash relative to the magnitude of the risks assumed, thereby magnifying the impact of any resulting gain or loss. For example, the potential loss from the use of futures can exceed a fund's initial investment in such contracts. In addition, these transactions could result in a loss to a fund if the counterparty to the transaction does not perform as promised.

A fund may invest in derivatives, which are financial contracts with a value that depends on, or is derived from, the value of underlying assets, reference rates, or indexes. Derivatives may relate to stocks, bonds, interest rates, currencies or currency exchange rates, and related indexes. A fund may use derivatives for many purposes, including for hedging and as a substitute for direct investment in securities or other assets. Derivatives may be used in a way to efficiently adjust the exposure of a fund to various securities, markets, and currencies without a fund actually having to sell existing investments and make new investments. This generally will be done when the adjustment is expected to be relatively temporary or in anticipation of effecting the sale of fund assets and making new investments over time. Further, since many derivatives have a leverage component, adverse changes in the value or level of the underlying asset, reference rate, or index can result in a loss substantially greater than the amount invested in the derivative itself. Certain derivatives have the potential for unlimited loss, regardless of the size of the initial investment. When a fund uses derivatives for leverage, investments in that fund will tend to be more volatile, resulting in larger gains or losses in response to market changes. To limit risks associated with leverage, a fund is required to comply with Rule 18f-4 under the Investment Company Act of 1940, as amended (the Derivatives Rule) as outlined below. For a description of the various derivative instruments the fund may utilize, refer to the SAI.

The regulation of the U.S. and non-U.S. derivatives markets has undergone substantial change in recent years and such change may continue. In particular, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and regulations promulgated or proposed thereunder require many derivatives to be cleared and traded on an exchange, expand entity registration requirements, impose business conduct requirements on dealers that enter into swaps with a pension plan, endowment, retirement plan or government entity, and required banks to move some derivatives trading units to a non-guaranteed affiliate separate from the deposit-taking bank or divest them altogether. Although the Commodity Futures Trading Commission (CFTC) has released final rules relating to clearing, reporting, recordkeeping and registration requirements under the legislation, many of the provisions are subject to further final rule making, and thus its ultimate impact remains unclear. New regulations could, among other things, restrict a fund's ability to engage in derivatives transactions (for example, by making certain types of derivatives transactions no longer available to the fund) and/or increase the costs of such derivatives transactions (for example, by increasing margin or capital requirements), and a fund may be unable to fully execute its investment strategies as a result. Limits or restrictions applicable to the counterparties with which a fund engages in derivative transactions also could prevent the fund from using these instruments or affect the pricing or other factors relating to these instruments, or may change the availability of certain investments.

The Derivatives Rule mandates that a fund adopt and/or implement: (i) value-at-risk limitations (VaR); (ii) a written derivatives risk management program; (iii) new Board oversight responsibilities; and (iv) new reporting and recordkeeping requirements. In the event that a fund's derivative exposure is 10% or less of its net assets, excluding certain currency and interest rate hedging transactions, it can elect to be classified as a limited derivatives user (Limited Derivatives User) under the Derivatives Rule, in which case the fund is not subject to the full requirements of the Derivatives Rule. Limited Derivatives Users are exempted from VaR testing, implementing a derivatives risk management program, and certain Board oversight and reporting requirements mandated by the Derivatives Rule. However, a Limited Derivatives User is still required to implement written compliance policies and procedures reasonably designed to manage its derivatives risks.

The Derivatives Rule also provides special treatment for reverse repurchase agreements, similar financing transactions and unfunded commitment agreements. Specifically, a fund may elect whether to treat reverse repurchase agreements and similar financing transactions as "derivatives transactions" subject to the requirements of the Derivatives Rule or as senior securities equivalent to bank borrowings for purposes of Section 18 of the Investment Company Act of 1940. In addition, when-issued or forward settling securities transactions that physically settle within 35-days are deemed not to involve a senior security.

At any time after the date of this prospectus, legislation may be enacted that could negatively affect the assets of a fund. Legislation or regulation may change the way in which a fund itself is regulated. The advisor cannot predict the effects of any new governmental regulation that may be implemented, and there can be no assurance that any new governmental regulation will not adversely affect a fund's ability to achieve its investment objectives.

The use of derivative instruments may involve risks different from, or potentially greater than, the risks associated with investing directly in securities and other, more traditional assets. In particular, the use of derivative instruments exposes a fund to the risk that the counterparty to an OTC derivatives contract will be unable or unwilling to make timely settlement payments or otherwise honor its obligations. OTC derivatives transactions typically can only be closed out with the other party to the transaction, although either party may engage in an offsetting transaction that puts that party in the same economic position as if it had closed out the transaction with the counterparty or may obtain the other party's consent to assign the transaction to a third party. If the counterparty defaults, the fund will have contractual remedies, but there is no assurance that the counterparty will meet its contractual obligations or that, in the event of default, the fund will succeed in enforcing them. For example, because the contract for each OTC derivatives transaction is individually negotiated with a specific counterparty, a fund is subject to the risk that a counterparty may interpret contractual terms (e.g., the definition of default) differently than the fund when the fund seeks to enforce its contractual rights. If that occurs, the cost and unpredictability of the legal proceedings required for the fund to enforce its contractual rights may lead it to decide not to pursue its claims against the counterparty. The fund, therefore, assumes the risk that it may be unable to obtain payments owed to it under OTC derivatives contracts or that those payments may be delayed or made only after the fund has incurred the costs of litigation. While a manager intends to monitor the creditworthiness of counterparties, there can be no assurance that a counterparty will meet its obligations, especially during unusually adverse market conditions. To the extent a fund contracts with a limited number of counterparties, the fund's risk will be concentrated and events that affect the creditworthiness of any of those counterparties may have a pronounced effect on the fund. Derivatives are also subject to a number of other risks, including market risk, liquidity risk and operational risk. Since the value of derivatives is calculated and derived from the value of other assets, instruments, or references, there is a risk that they will be improperly valued. Derivatives also involve the risk that changes in their value may not correlate perfectly with the assets, rates, or indexes they are designed to hedge or closely track. Suitable derivatives transactions may not be available in all circumstances. The fund is also subject to the risk that the counterparty closes out the derivatives transactions upon the occurrence of certain triggering events. In addition, a manager may determine not to use derivatives to hedge or otherwise reduce risk exposure. Government legislation or regulation could affect the use of derivatives transactions and could limit a fund's ability to pursue its investment strategies.

A detailed discussion of various hedging and other strategic transactions appears in the SAI. To the extent that a fund utilizes the following list of certain derivatives and other strategic transactions, it will be subject to associated risks. The main risks of each appear below.

Credit default swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in transactions involving credit default swaps.

Currency options. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving currency options.

Depository Receipts. Depository receipts are subject to most of the risks associated with investing in foreign and emerging market securities directly because the value of a depository receipt is dependent upon the market price of the underlying foreign equity security. Depository receipts are also subject to liquidity risk.

Equity-linked notes are subject to risks similar to those related to investing in the underlying securities. An equity-linked note is dependent on the individual credit of the note's issuer. Equity-linked notes often are privately placed and may not be rated. The secondary market for equity-linked notes may be limited.

Foreign currency forward contracts. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), foreign currency risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving foreign currency forward contracts.

Foreign currency swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), foreign currency risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving foreign currency swaps.

Futures contracts. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving futures contracts.

Inflation swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in transactions involving inflation swaps.

Interest-rate swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving interest-rate swaps.

Inverse floating-rate securities. Liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, issuer risk, and risk of disproportionate loss are the principal risks of engaging in transactions involving inverse floating-rate securities.

Options. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving options. Counterparty risk does not apply to exchange-traded options.

Options on futures. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), and risk of disproportionate loss are the principal risks of engaging in transactions involving options on futures. Counterparty risk does not apply to exchange-traded options.

Reverse repurchase agreements. An event of default or insolvency of the counterparty to a reverse repurchase agreement could result in delays or restrictions with respect to the fund's ability to dispose of the underlying securities. A reverse repurchase agreement may be considered a form of leverage and may, therefore, increase fluctuations in the fund's net asset value per share (NAV).

Swaps (including variance swaps). Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, settlement risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in transactions involving swaps.

Swaptions. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), interest-rate risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in swaptions.

Total return swaps. Counterparty risk, liquidity risk (i.e., the inability to enter into closing transactions), market risk, interest-rate risk, settlement risk, risk of default of the underlying reference obligation, and risk of disproportionate loss are the principal risks of engaging in total return swaps.

High portfolio turnover risk

A high fund portfolio turnover rate (over 100%) generally involves correspondingly greater brokerage commission and tax expenses, which must be borne directly by a fund and its shareholders, respectively. The portfolio turnover rate of a fund may vary from year to year, as well as within a year.

Hybrid instrument risk

Hybrid instruments (a type of potentially high-risk derivative) combine the elements of futures contracts or options with those of debt, preferred equity or a depository instrument. The risks of investing in hybrid instruments are a combination of the risks of investing in securities, options, futures and currencies. Therefore, an investment in a hybrid instrument may include significant risks not associated with a similar investment in a traditional debt instrument. The risks of a particular hybrid instrument will depend upon the terms of the instrument, but may include, without limitation, the possibility of significant changes in the benchmark for the hybrid instrument or the prices of underlying assets to which the instrument is linked. These risks generally depend upon factors unrelated to the operations or credit quality of the issuer of the hybrid instrument and that may not be readily foreseen by the purchaser. Such factors include economic and political events, the supply and demand for the underlying assets, and interest rate movements. In recent years, various benchmarks and prices for underlying assets have been highly volatile, and such volatility may be expected in the future. Hybrid instruments may bear interest or pay preferred dividends at below-market (or even relatively nominal) rates. Hybrid instruments may also carry liquidity risk since the instruments are often "customized" to meet the needs of a particular investor. Therefore, the number of investors that would be willing and able to buy such instruments in the secondary market may be smaller than for more traditional debt securities.

Illiquid and restricted securities risk

Certain securities are considered illiquid or restricted due to a limited trading market, legal or contractual restrictions on resale or transfer, or are otherwise illiquid because they cannot be sold or disposed of in seven calendar days or less without the sale or disposition significantly changing the market value of the investment. Securities that have limitations on their resale are referred to as "restricted securities." Certain restricted securities that are eligible for resale to qualified institutional purchasers may not be regarded as illiquid. Illiquid and restricted securities may be difficult to value and may involve greater risks than liquid securities. Market quotations for such securities may be volatile and/or subject to large spreads between bid and ask price. Illiquidity may have an adverse impact on market price and the fund's ability to sell particular securities when necessary to meet the fund's liquidity needs or in response to a specific economic event. The fund may incur additional expense when disposing of illiquid or restricted securities, including all or a portion of the cost to register the securities.

Income stock risk

Income provided by the fund may be affected by changes in the dividend policies of the companies in which the fund invests and the capital resources available for such payments at such companies.

Index management risk

Certain factors may cause a fund that is an index fund to track its target index less closely. For example, a subadvisor may select securities that are not fully representative of the index, and the fund's transaction expenses and the size and timing of its cash flows, may result in the fund's performance being different than that of its index. Moreover, the fund will generally reflect the performance of its target index even when the index does not perform well.

Industrials sector risk

Companies in the industrials sector may be affected by general economic conditions, commodity production and pricing, supply and demand fluctuations, environmental and other government regulations, geopolitical events, interest rates, insurance costs, technological developments, liabilities arising from governmental or civil actions, labor relations, import controls and government spending. The value of securities issued by companies in the industrials sector may also be adversely affected by supply and demand related to their specific products or services and industrials sector products in general, as well as liability for environmental damage and product liability claims and government regulations. For example, the products of manufacturing companies may face obsolescence due to rapid technological developments and frequent new product introduction. Certain companies within this sector, particularly aerospace and defense companies, may be heavily affected by government spending policies because companies involved in this industry rely, to a significant extent, on government demand for their products and services. In addition, securities of industrials companies in transportation may be cyclical and have occasional sharp price movements which may result from economic changes, fuel prices, labor relations and insurance costs, and transportation companies in certain countries may also be subject to significant government regulation and oversight, which may adversely affect their businesses.

Information technology companies risk

Information technology companies can be significantly affected by rapid obsolescence, short product cycles, competition from new market entrants, and heightened cybersecurity risk, among other factors.

Initial public offerings (IPOs) risk

Certain funds may invest a portion of their assets in shares of IPOs. IPOs may have a magnified impact on the performance of a fund with a small asset base. The impact of IPOs on a fund's performance will likely decrease as the fund's asset size increases, which could reduce the fund's returns. IPOs may not be consistently available to a fund for investing, particularly as the fund's asset base grows. IPO shares are frequently volatile in price due to the absence of a prior public market, the small number of shares available for trading, and limited information about the issuer. Therefore, a fund may hold IPO shares for a very short period of time. This may increase the turnover of a fund and may lead to increased expenses for a fund, such as commissions and transaction costs. In addition, IPO shares can experience an immediate drop in value if the demand for the securities does not continue to support the offering price.

Investment company securities risk

Fund shareholders indirectly bear their proportionate share of the expenses of any investment company in which the fund invests. The total return on such investments will be reduced by the operating expenses and fees of such other investment companies, including advisory fees. Investments in closed-end funds may involve the payment of substantial premiums above the value of such investment companies' portfolio securities.

Large company risk

Larger, more established companies may be unable to respond quickly to new competitive challenges such as changes in technology and consumer tastes. Many larger companies also may not be able to attain the high growth rate of successful smaller companies, especially during extended periods of economic expansion. For purposes of the fund's investment policies, the market capitalization of a company is based on its capitalization at the time the fund purchases the company's securities. Market capitalizations of companies change over time. The fund is not obligated to sell a company's security simply because, subsequent to its purchase, the company's market capitalization has changed to be outside the capitalization range, if any, in effect for the fund.

LIBOR discontinuation risk

Certain debt securities, derivatives and other financial instruments have traditionally utilized LIBOR as the reference or benchmark rate for interest rate calculations. However, following allegations of manipulation and concerns regarding liquidity, the U.K. Financial Conduct Authority (UK FCA) announced that LIBOR would be discontinued on June 30, 2023. The UK FCA elected to require the ICE Benchmark Administration Limited, the administrator of LIBOR, to continue publishing a subset of LIBOR settings on a "synthetic" basis. The synthetic publication of the one-, three- and six-month U.S. dollar LIBOR will continue until September 30, 2024.

Although the transition process away from LIBOR has become increasingly well-defined in advance of the discontinuation dates, the impact on certain debt securities, derivatives and other financial instruments remains uncertain. Market participants have adopted alternative rates such as Secured Overnight Financing Rate (SOFR) or otherwise amended financial instruments referencing LIBOR to include fallback provisions and other measures that contemplated the discontinuation of LIBOR or other similar market disruption events, but neither the effect of the transition process nor the viability of such measures is known. To facilitate the transition of legacy derivatives contracts referencing LIBOR, the International Swaps and Derivatives Association, Inc. launched a protocol to incorporate fallback provisions. However, there are obstacles to converting certain longer term securities and transactions to a new benchmark or benchmarks and the effectiveness of one alternative reference rate versus multiple alternative reference rates in new or existing financial instruments and products has not been determined. Certain proposed replacement rates to LIBOR, such as SOFR, which is a broad measure of secured overnight U.S. Treasury repo rates, are materially different from LIBOR, and changes in the applicable spread for financial instruments transitioning away from LIBOR will need to be made to accommodate the differences.

The utilization of an alternative reference rate, or the transition process to an alternative reference rate, may adversely affect the fund's performance.

Alteration of the terms of a debt instrument or a modification of the terms of other types of contracts to replace LIBOR or another interbank offered rate (IBOR) with a new reference rate could result in a taxable exchange and the realization of income and gain/loss for U.S. federal income tax purposes. The IRS has issued final regulations regarding the tax consequences of the transition from IBOR to a new reference rate in debt instruments and non-debt contracts. Under the final regulations, alteration or modification of the terms of a debt instrument to replace an operative rate that uses a discontinued IBOR with a qualified rate (as defined in the final regulations) including true up payments equalizing the fair market value of contracts before and after such IBOR transition, to add a qualified rate as a fallback rate to a contract whose operative rate uses a discontinued IBOR or to replace a fallback rate that uses a discontinued IBOR with a qualified rate would not be taxable. The IRS may provide additional guidance, with potential retroactive effect.

Liquidity risk

The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Funds with principal investment strategies that involve investments in securities of companies with smaller market capitalizations, foreign securities, derivatives, or securities with substantial market and/or credit risk tend to have the greatest exposure to liquidity risk. Exposure to liquidity risk may be heightened for funds that invest in securities of emerging markets and related derivatives that are not widely traded, and that may be subject to purchase and sale restrictions.

The capacity of traditional dealers to engage in fixed-income trading has not kept pace with the bond market's growth. As a result, dealer inventories of corporate bonds, which indicate the ability to "make markets," i.e., buy or sell a security at the quoted bid and ask price, respectively, are at or near historic lows relative to market size. Because market makers provide stability to fixed-income markets, the significant reduction in dealer inventories could lead to decreased liquidity and increased volatility, which may become exacerbated during periods of economic or political stress.

Money Market Trust Only

A fund is exposed to liquidity risk when reduced trading volume, a relative lack of market makers, or legal restrictions impair the fund's ability to sell its portfolio securities at an advantageous market price. While the fund endeavors to maintain a high level of liquidity in its portfolio, its ability to sell portfolio securities can deteriorate rapidly due to a lack of willing buyers, a reduced number of traditional market participants, the reduced capacity of traditional market participants to make a market in fixed-income securities, or general market conditions.

In addition, liquidity risk may be magnified in a rising interest rate environment in which investor redemptions from money market funds may be higher than normal. The selling of fixed-income securities to satisfy fund shareholder redemptions may result in an increased supply of such securities during periods of reduced investor demand, thereby impairing the fund's ability to sell such securities. The inability to sell portfolio securities or the need to sell such securities under unfavorable market conditions may adversely affect the fund's ability to maintain a stable \$1.00 share price.

Loan participations risk

A fund's ability to receive payments of principal and interest and other amounts in connection with loans (whether through participations, assignments, or otherwise) will depend primarily on the financial condition of the borrower. The failure by a fund to receive scheduled interest or principal payments on a loan or a loan participation, because of a default, bankruptcy, or any other reason, would adversely affect the income of the fund and would likely reduce the value of its assets. Transactions in loan investments may take a significant amount of time (i.e., seven days or longer) to settle. This could pose a liquidity risk to the fund and, if the fund's exposure to such investments is substantial, could impair the fund's ability to meet shareholder redemptions in a timely manner. Investments in loan participations and assignments present the possibility that a fund could be held liable as a co-lender under emerging legal theories of lender liability. Even with secured loans, there is no assurance that the collateral securing the loan will be sufficient to protect a fund against losses in value or a decline in income in the event of a borrower's nonpayment of principal or interest, and in the event of a bankruptcy of a borrower, the fund could experience delays or limitations in its ability to realize the benefits of any collateral securing the loan. Unless, under the terms of the loan or other indebtedness, a fund has direct recourse against the corporate borrower, the fund may have to rely on the agent bank or other financial intermediary to apply appropriate credit remedies against a corporate borrower. Furthermore, the value of any such collateral may decline and may be difficult to liquidate. The amount of public information available with respect to loans may be less extensive than that

available for registered or exchange-listed securities. Because a significant percent of loans and loan participations are not generally rated by independent credit rating agencies, a decision by a fund to invest in a particular loan or loan participation could depend exclusively on the manager's credit analysis of the borrower, and in the case of a loan participation, the intermediary. A fund may have limited rights to enforce the terms of an underlying loan.

It is unclear whether U.S. federal securities laws afford protections against fraud and misrepresentation, as well as market manipulation, to investments in loans and other forms of direct indebtedness under certain circumstances. In the absence of definitive regulatory guidance, a fund relies on the manager's research in an attempt to avoid situations where fraud, misrepresentation, or market manipulation could adversely affect the fund.

A fund also may be in possession of material non-public information about a borrower as a result of owning a floating-rate instrument issued by such borrower. Because of prohibitions on trading in securities of issuers while in possession of such information, a fund might be unable to enter into a transaction in a publicly traded security issued by that borrower when it would otherwise be advantageous to do so.

Lower-rated and high-yield fixed-income securities risk

Lower-rated fixed-income securities are defined as securities rated below investment grade (such as Ba and below by Moody's Investors Service, Inc. and BB and below by S&P Global Ratings and Fitch Ratings, as applicable) (also called junk bonds). The general risks of investing in these securities are as follows:

Risk to principal and income. Investing in lower-rated fixed-income securities is considered speculative. While these securities generally provide greater income potential than investments in higher-rated securities, there is a greater risk that principal and interest payments will not be made. Issuers of these securities may even go into default or become bankrupt.

Price volatility. The price of lower-rated fixed-income securities may be more volatile than securities in the higher-rated categories. This volatility may increase during periods of economic uncertainty or change. The price of these securities is affected more than higher-rated fixed-income securities by the market's perception of their credit quality, especially during times of adverse publicity. In the past, economic downturns or increases in interest rates have, at times, caused more defaults by issuers of these securities and may do so in the future. Economic downturns and increases in interest rates have an even greater effect on highly leveraged issuers of these securities.

Liquidity. The market for lower-rated fixed-income securities may have more limited trading than the market for investment-grade fixed-income securities. Therefore, it may be more difficult to sell these securities, and these securities may have to be sold at prices below their market value in order to meet redemption requests or to respond to changes in market conditions.

Dependence on manager's own credit analysis. While a manager may rely on ratings by established credit rating agencies, it will also supplement such ratings with its own independent review of the credit quality of the issuer. Therefore, the assessment of the credit risk of lower-rated fixed-income securities is more dependent on the manager's evaluation than the assessment of the credit risk of higher-rated securities.

Additional risks regarding lower-rated corporate fixed-income securities. Lower-rated corporate fixed-income securities (and comparable unrated securities) tend to be more sensitive to individual corporate developments and changes in economic conditions than higher-rated corporate fixed-income securities. Issuers of lower-rated corporate fixed-income securities may also be highly leveraged, increasing the risk that principal and income will not be repaid.

Additional risks regarding lower-rated foreign government fixed-income securities. Lower-rated foreign government fixed-income securities are subject to the risks of investing in foreign countries described under "Foreign securities risk." In addition, the ability and willingness of a foreign government to make payments on debt when due may be affected by the prevailing economic and political conditions within the country. Emerging-market countries may experience high inflation, interest rates, and unemployment, as well as exchange-rate fluctuations which adversely affect trade and political uncertainty or instability. These factors increase the risk that a foreign government will not make payments when due.

Master limited partnership (MLP) risk

Investing in MLPs involves certain risks related to investing in the underlying assets of MLPs and risks associated with pooled investment vehicles. MLPs holding credit-related investments are subject to interest-rate risk and the risk of default on payment obligations by debt securities. In addition, investments in the debt and securities of MLPs involve certain other risks, including risks related to limited control and limited rights to vote on matters affecting MLPs, risks related to potential conflicts of interest between an MLP and the MLP's general partner, cash flow risks, dilution risks and risks related to the general partner's right to require unit-holders to sell their common units at an undesirable time or price. The fund's investments in MLPs may be subject to legal and other restrictions on resale or may be less liquid than publicly traded securities. Certain MLP securities may trade in lower volumes due to their smaller capitalizations, and may be subject to more abrupt or erratic price movements and may lack sufficient market liquidity to enable the fund to effect sales at an advantageous time or without a substantial drop in price. If the fund is one of the largest investors in an MLP, it may be more difficult for the fund to buy and sell significant amounts of such investments without an unfavorable impact on prevailing market prices. Larger purchases or sales of MLP investments by the fund in a short period of time may cause abnormal movements in the market price of these investments. As a result, these investments may be difficult to dispose of at an advantageous price when the fund desires to do so. During periods of interest rate volatility, these investments may not provide attractive returns, which may adversely impact the overall performance of the fund.

MLPs in which the fund may invest operate oil, natural gas, petroleum, or other facilities within the energy sector. As a result, the fund will be susceptible to adverse economic, environmental, or regulatory occurrences impacting the energy sector. MLPs and other companies operating in the energy sector are subject to specific risks, including, among others, fluctuations in commodity prices; reduced consumer demand for commodities such as oil, natural gas, or petroleum products; reduced availability of natural gas or other commodities for transporting, processing, storing, or delivering; slowdowns in new construction; extreme weather or other natural disasters; and threats of attack by terrorists on energy assets. Additionally, changes in the regulatory environment for energy companies may adversely impact their profitability. Over time, depletion of natural gas reserves and other energy reserves may also affect the profitability of energy companies.

Global oil prices declined significantly at the beginning of 2020 and have experienced significant price volatility, including a period where an oil-price futures contract fell into negative territory for the first time in history, as demand for oil slowed and oil storage facilities reached their storage capacities. Varying levels of demand and production and continued oil price volatility may continue to adversely impact MLPs and energy infrastructure companies.

Media and communications sector risk

Media and communications companies may be significantly affected by product and service obsolescence due to technological advancement or development, competitive pressures (including innovation by competitors and pricing competition), substantial capital requirements, research and development costs, fluctuating demand due to shifting demographics and changing consumer tastes, and changes in regulation. Certain companies in the communications sector may be particular targets of hacking and/or other cybersecurity breaches, which could adversely affect their businesses.

Mortgage-backed and asset-backed securities risk

Mortgage-backed securities. Mortgage-backed securities represent participating interests in pools of residential mortgage loans, which are guaranteed by the U.S. government, its agencies, or its instrumentalities. However, the guarantee of these types of securities relates to the principal and interest payments, and not to the market value of such securities. In addition, the guarantee only relates to the mortgage-backed securities held by a fund and not the purchase of shares of the fund.

Mortgage-backed securities are issued by lenders, such as mortgage bankers, commercial banks, and savings and loan associations. Such securities differ from conventional debt securities, which provide for the periodic payment of interest in fixed amounts (usually semiannually) with principal payments at maturity or on specified dates. Mortgage-backed securities provide periodic payments which are, in effect, a pass-through of the interest and principal payments (including any prepayments) made by the individual borrowers on the pooled mortgage loans. A mortgage-backed security will mature when all the mortgages in the pool mature or are prepaid. Therefore, mortgage-backed securities do not have a fixed maturity and their expected maturities may vary when interest rates rise or fall.

When interest rates fall, homeowners are more likely to prepay their mortgage loans. An increased rate of prepayments on a fund's mortgage-backed securities will result in an unforeseen loss of interest income to the fund as the fund may be required to reinvest assets at a lower interest rate. Because prepayments increase when interest rates fall, the prices of mortgage-backed securities do not increase as much as other fixed-income securities when interest rates fall.

When interest rates rise, homeowners are less likely to prepay their mortgage loans. A decreased rate of prepayments lengthens the expected maturity of a mortgage-backed security. Therefore, the prices of mortgage-backed securities may decrease more than prices of other fixed-income securities when interest rates rise.

The yield of mortgage-backed securities is based on the average life of the underlying pool of mortgage loans. The actual life of any particular pool may be shortened by unscheduled or early payments of principal and interest. Principal prepayments may result from the sale of the underlying property or the refinancing or foreclosure of underlying mortgages. The occurrence of prepayments is affected by a wide range of economic, demographic, and social factors and, accordingly, it is not possible to accurately predict the average life of a particular pool. The actual prepayment experience of a pool of mortgage loans may cause the yield realized by a fund to differ from the yield calculated on the basis of the average life of the pool. In addition, if a fund purchases mortgage-backed securities at a premium, the premium may be lost in the event of early prepayment, which may result in a loss to the fund.

Prepayments tend to increase during periods of falling interest rates, while during periods of rising interest rates, prepayments are likely to decline. Monthly interest payments received by a fund have a compounding effect, which will increase the yield to shareholders as compared to debt obligations that pay interest semiannually. Because of the reinvestment of prepayments of principal at current rates, mortgage-backed securities may be less effective than U.S. Treasury bonds of similar maturity at maintaining yields during periods of declining interest rates. Also, although the value of debt securities may increase as interest rates decline, the value of these pass-through types of securities may not increase as much, due to their prepayment feature.

Collateralized mortgage obligations (CMOs). A fund may invest in mortgage-backed securities called CMOs. CMOs are issued in separate classes with different stated maturities. As the mortgage pool experiences prepayments, the pool pays off investors in classes with shorter

maturities first. By investing in CMOs, a fund may manage the prepayment risk of mortgage-backed securities. However, prepayments may cause the actual maturity of a CMO to be substantially shorter than its stated maturity.

Asset-backed securities. Asset-backed securities include interests in pools of debt securities, commercial or consumer loans, or other receivables. The value of these securities depends on many factors, including changes in interest rates, the availability of information concerning the pool and its structure, the credit quality of the underlying assets, the market's perception of the servicer of the pool, and any credit enhancement provided. In addition, asset-backed securities have prepayment risks similar to mortgage-backed securities.

Inverse interest-only securities. Inverse interest-only securities that are mortgage-backed securities are subject to the same risks as other mortgage-backed securities. In addition, the coupon on an inverse interest-only security can be extremely sensitive to changes in prevailing interest rates.

TBA mortgage contracts. To-be-announced (TBA) mortgage contracts involve a risk of loss if the value of the underlying security to be purchased declines prior to delivery date. The yield obtained for such securities may be higher or lower than yields available in the market on delivery date.

Non-diversified risk

Overall risk can be reduced by investing in securities from a diversified pool of issuers, while overall risk is increased by investing in securities of a small number of issuers. If a fund is not diversified within the meaning of the Investment Company Act of 1940, as amended, that means it is allowed to invest a large portion of assets in any one issuer or a small number of issuers, which may result in greater susceptibility to associated risks. As a result, credit, market, and other risks associated with a non-diversified fund's investment strategies or techniques may be more pronounced than for funds that are diversified.

Operational and cybersecurity risk

With the increased use of technologies, such as mobile devices and "cloud"-based service offerings and the dependence on the internet and computer systems to perform necessary business functions, the fund's service providers are susceptible to operational and information or cybersecurity risks that could result in losses to the fund and its shareholders. Intentional cybersecurity breaches include unauthorized access to systems, networks, or devices (such as through "hacking" activity or "phishing"); infection from computer viruses or other malicious software code; and attacks that shut down, disable, slow, or otherwise disrupt operations, business processes, or website access or functionality. Cyber-attacks can also be carried out in a manner that does not require gaining unauthorized access, such as causing denial-of-service attacks on the service providers' systems or websites rendering them unavailable to intended users or via "ransomware" that renders the systems inoperable until appropriate actions are taken. In addition, unintentional incidents can occur, such as the inadvertent release of confidential information (possibly resulting in the violation of applicable privacy laws).

A cybersecurity breach could result in the loss or theft of customer data or funds, loss or theft of proprietary information or corporate data, physical damage to a computer or network system, or costs associated with system repairs. Such incidents could cause a fund, the advisor, a manager, or other service providers to incur regulatory penalties, reputational damage, additional compliance costs, litigation costs or financial loss. In addition, such incidents could affect issuers in which a fund invests, and thereby cause the fund's investments to lose value.

Cyber-events have the potential to materially affect the fund and the advisor's relationships with accounts, shareholders, clients, customers, employees, products, and service providers. The fund has established risk management systems reasonably designed to seek to reduce the risks associated with cyber-events. There is no guarantee that the fund will be able to prevent or mitigate the impact of any or all cyber-events.

The fund is exposed to operational risk arising from a number of factors, including, but not limited to, human error, processing and communication errors, errors of the fund's service providers, counterparties, or other third parties, failed or inadequate processes and technology or system failures.

In addition, other disruptive events, including (but not limited to) natural disasters and public health crises may adversely affect the fund's ability to conduct business, in particular if the fund's employees or the employees of its service providers are unable or unwilling to perform their responsibilities as a result of any such event. Even if the fund's employees and the employees of its service providers are able to work remotely, those remote work arrangements could result in the fund's business operations being less efficient than under normal circumstances, could lead to delays in its processing of transactions, and could increase the risk of cyber-events.

Participatory notes risk

Participatory notes (p-notes) represent interests in securities listed on certain foreign exchanges. The return on a p-note is linked to the performance of the issuers of the underlying securities. The performance of p-notes will not replicate exactly the performance of the issuers that they seek to replicate due to transaction costs and other expenses. P-notes are subject to counterparty risk since the notes constitute general unsecured contractual obligations of the financial institutions issuing the notes, and the fund is relying on the creditworthiness of such institutions and has no rights under the notes against the issuers of the underlying securities. In addition, p-notes are subject to liquidity risk.

Preferred and convertible securities risk

Unlike interest on debt securities, preferred stock dividends are payable only if declared by the issuer's board. Also, preferred stock may be subject to optional or mandatory redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. The value of convertible preferred stock can depend heavily upon the value of the security into which such convertible preferred stock is converted, depending on whether the market price of the underlying security exceeds the conversion price.

Privately held and newly public companies risk

Investments in the stocks of privately held companies and newly public companies involve greater risks than investments in stocks of companies that have traded publicly on an exchange for extended time periods. Investments in such companies are less liquid and may be difficult to value. There may be significantly less information available about these companies' business models, quality of management, earnings growth potential, and other criteria used to evaluate their investment prospects. The extent (if at all) to which securities of privately held companies or newly public companies may be sold without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments. Funds with principal investment strategies that involve investments in securities of privately held companies tend to have a greater exposure to liquidity risk than funds that do not invest in securities of privately held companies.

Quantitative modeling risk

Use of quantitative models carries the risk that the fund may underperform funds that do not utilize such models. The use of quantitative models may affect the fund's exposure to certain sectors or types of investments and may impact the fund's relative investment performance depending on whether such sectors or investments are in or out of favor in the market. Successful application of a quantitative model is dependent on the manager's skill in building and implementing the model. For example, human judgment plays a role in building, utilizing, testing, modifying, and implementing the financial algorithms and formulas used in these models. Quantitative models are subject to technical issues including programming and data inaccuracies, are based on assumptions, and rely on data that is subject to limitations (e.g., inaccuracies, staleness), any of which could adversely affect their effectiveness or predictive value. Quantitative models may not accurately predict future market movements or characteristics due to the fact that market performance can be affected by non-quantitative factors that are not easily integrated into quantitative analysis, among other factors.

Real estate investment trust (REIT) risk

REITs are subject to risks associated with the ownership of real estate. Some REITs experience market risk and liquidity risk due to investment in a limited number of properties, in a narrow geographic area, or in a single property type, which increases the risk that such REIT could be unfavorably affected by the poor performance of a single investment or investment type. These companies are also sensitive to factors such as changes in real estate values and property taxes, interest rates, cash flow of underlying real estate assets, supply and demand, and the management skill and creditworthiness of the issuer. Borrowers could default on or sell investments that a REIT holds, which could reduce the cash flow needed to make distributions to investors. In addition, REITs may also be affected by tax and regulatory requirements impacting the REITs' ability to qualify for preferential tax treatments or exemptions. REITs require specialized management and pay management expenses. REITs also are subject to physical risks to real property, including weather, natural disasters, terrorist attacks, war, or other events that destroy real property.

REITs include equity REITs and mortgage REITs. Equity REITs may be affected by changes in the value of the underlying property owned by the trusts, while mortgage REITs may be affected by the quality of any credit extended. Further, equity and mortgage REITs are dependent upon management skills and generally may not be diversified. Equity and mortgage REITs are also subject to heavy cash flow dependency, defaults by borrowers or lessees, and self-liquidations. In addition, equity and mortgage REITs could possibly fail to qualify for tax-free pass-through of income under the Internal Revenue Code of 1986, as amended (the Code), or to maintain their exemptions from registration under the Investment Company Act of 1940, as amended. The above factors may also adversely affect a borrower's or a lessee's ability to meet its obligations to the REIT. In the event of a default by a borrower or lessee, the REIT may experience delays in enforcing its rights as a mortgagee or lessor and may incur substantial costs associated with protecting its investments. In addition, even many of the larger REITs in the industry tend to be small to medium-sized companies in relation to the equity markets as a whole. Moreover, shares of REITs may trade less frequently and, therefore, are subject to more erratic price movements than securities of larger issuers.

Real estate securities risk

Investing in securities of companies in the real estate industry subjects a fund to the risks associated with the direct ownership of real estate. These risks include:

- Declines in the value of real estate
- Risks related to general and local economic conditions
- Possible lack of availability of mortgage funds
- Overbuilding
- Extended vacancies of properties
- Increased competition
- Increases in property taxes and operating expenses

- Changes in zoning laws
- Losses due to costs resulting from the cleanup of environmental problems
- Liability to third parties for damages resulting from environmental problems
- Casualty or condemnation losses
- Limitations on rents
- Changes in neighborhood values and the appeal of properties to tenants
- Changes in interest rates and
- Liquidity risk

Therefore, for a fund investing a substantial amount of its assets in securities of companies in the real estate industry, the value of the fund's shares may change at different rates compared with the value of shares of a fund with investments in a mix of different industries.

Securities of companies in the real estate industry have been and may continue to be negatively affected by widespread health crises such as a global pandemic. Potential impacts on the real estate market may include lower occupancy rates, decreased lease payments, defaults and foreclosures, among other consequences. These impacts could adversely affect corporate borrowers and mortgage lenders, the value of mortgage-backed securities, the bonds of municipalities that depend on tax revenues and tourist dollars generated by such properties, and insurers of the property and/or of corporate, municipal or mortgage-backed securities. It is not known how long such impacts, or any future impacts of other significant events, will last.

Securities of companies in the real estate industry include equity REITs and mortgage REITs. Equity REITs may be affected by changes in the value of the underlying property owned by the REIT, while mortgage REITs may be affected by the quality of any credit extended. Further, equity and mortgage REITs are dependent upon management skills and generally may not be diversified. Equity and mortgage REITs are also subject to heavy cash flow dependency, defaults by borrowers or lessees, and self-liquidations. In addition, equity and mortgage REITs could possibly fail to qualify for tax-free pass through of income under the Internal Revenue Code of 1986 (the Code) or to maintain their exemptions from registration under the Investment Company Act of 1940, as amended. The above factors may also adversely affect a borrower's or a lessee's ability to meet its obligations to a REIT. In the event of a default by a borrower or lessee, a REIT may experience delays in enforcing its rights as a mortgagee or lessor and may incur substantial costs associated with protecting its investments.

In addition, even the larger REITs in the industry tend to be small to medium-sized companies in relation to the equity markets as a whole. Moreover, shares of REITs may trade less frequently and, therefore, are subject to more erratic price movements than securities of larger issuers.

Redemption risk

Money Market Trust may experience periods of heavy redemptions that could cause the fund to liquidate its assets at inopportune times or at a loss or depressed value, particularly during periods of declining or illiquid markets, and that could affect the fund's ability to maintain a \$1.00 share price. Redemption risk is greater to the extent that the fund has investors with large shareholdings, short investment horizons or unpredictable cash flow needs. The redemption by one or more large shareholders of their holdings in the fund could cause the remaining shareholders in the fund to lose money. In addition, the fund may suspend redemptions and liquidate the fund when permitted by applicable regulations.

Repurchase agreements risk

The risk of a repurchase agreement transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible difficulties and delays in obtaining collateral and delays and expense in liquidating the instrument. If an issuer of a repurchase agreement fails to repurchase the underlying obligation, the loss, if any, would be the difference between the repurchase price and the underlying obligation's market value. The fund might also incur certain costs in liquidating the underlying obligation. Moreover, if bankruptcy or other insolvency proceedings are commenced with respect to the seller, realization upon the underlying obligation might be delayed or limited.

S&P 500 Index risk

An investment in the fund involves risks similar to the risks of investing directly in the equity securities included in the S&P 500 Index.

Sector risk

When a fund's investments are focused in one or more sectors of the economy, they are less broadly invested across industries or sectors than other funds. This means that focused funds tend to be more volatile than other funds, and the values of their investments tend to go up and down more rapidly. In addition, a fund that invests in particular sectors is particularly susceptible to the impact of market, economic, political, regulatory, and other conditions and risks affecting those sectors. From time to time, a small number of companies may represent a large portion of a single sector or a group of related sectors as a whole.

Banking industry risk. Commercial banks (including "money center" regional and community banks), savings and loan associations and holding companies of the foregoing are especially subject to adverse effects of volatile interest rates, concentrations of loans in particular industries (such

as real estate or energy) and significant competition. The profitability of these businesses is to a significant degree dependent upon the availability and cost of capital funds. Economic conditions in the real estate market may have a particularly strong effect on certain banks and savings associations. Commercial banks and savings associations are subject to extensive federal and, in many instances, state regulation. Neither such extensive regulation nor the federal insurance of deposits ensures the solvency or profitability of companies in this industry, and there is no assurance against losses in securities issued by such companies. Late in the first quarter of 2023, a number of U.S. domestic banks and foreign banks experienced financial difficulties and, in some cases, failures. Given the interconnectedness of the banking system, bank regulators took actions, including the Federal Reserve, which invoked the systemic risk exception, temporarily transferred all deposits—both insured and uninsured—and substantially all the assets of two failed banks into respective bridge banks and guaranteed depositors' full access to their funds. Despite such response, there can be no certainty that the actions taken by banking regulators to limit the effect of those difficulties and failures on other banks or other financial institutions or on the U.S. or foreign economies generally will be effective. It is possible that more banks or other financial institutions will experience financial difficulties or fail, or other adverse developments may occur, which may affect adversely other U.S. or foreign financial institutions and economies.

Communication risk. Companies in the communication sector are subject to the additional risks of rapid obsolescence, lack of standardization or compatibility with existing technologies, an unfavorable regulatory environment and a dependency on patent and copyright protection. The prices of the securities of companies in the communication sector may fluctuate widely due to both federal and state regulations governing rates of return and services that may be offered, fierce competition for market share, and competitive challenges in the U.S. from foreign competitors engaged in strategic joint ventures with U.S. companies and in foreign markets from both U.S. and foreign competitors. In addition, recent industry consolidation trends may lead to increased regulation of communication companies in their primary markets.

Financial services risk. To the extent that a fund invests in securities of companies in the financial services sector, the fund may be significantly affected by economic, market, and business developments, borrowing costs, interest-rate fluctuations, competition, and government regulation, among other factors, impacting that sector. Companies in the financial services sector may include, but are not limited to, commercial and industrial banks, savings and loan associations and their holding companies, consumer and industrial finance companies, diversified financial services companies, investment banking, securities brokerage and investment advisory companies, leasing companies and insurance companies. The types of companies that comprise the financial services sector may change over time. These companies compete with banks and thrifts to provide traditional financial service products, in addition to their traditional services, such as brokerage and investment advice. In addition, certain financial service companies face shrinking profit margins due to new competitors, the cost of new technology and the pressure to compete globally.

Health sciences risk. Companies in this sector are subject to the additional risks of increased competition within the health care industry, changes in legislation or government regulations, reductions in government funding, the uncertainty of governmental approval of a particular product, product liability or other litigation, patent expirations and the obsolescence of popular products. The prices of the securities of health sciences companies may fluctuate widely due to government regulation and approval of their products and services, which may have a significant effect on their price and availability. In addition, the types of products or services produced or provided by these companies may quickly become obsolete. Moreover, liability for products that are later alleged to be harmful or unsafe may be substantial and may have a significant impact on a company's market value or share price.

Insurance companies risk. Insurance companies are engaged in underwriting, selling, distributing or placing of property and casualty, life or health insurance. Insurance company profits are affected by many factors, including interest rate movements, the imposition of premium rate caps, competition and pressure to compete globally. Property and casualty insurance profits may also be affected by weather catastrophes and other disasters. Already extensively regulated, insurance companies' profits may also be adversely affected by increased government regulations or tax law changes. Insurance companies are particularly subject to government regulation and rate setting, potential anti-trust and tax law changes, and industry-wide pricing and competition cycles. Property and casualty insurance companies may also be affected by weather and other catastrophes. Life and health insurance companies may be affected by mortality and morbidity rates, including the effects of epidemics. Individual insurance companies may be exposed to reserve inadequacies, problems in investment portfolios (for example, due to real estate or "junk" bond holdings) and failures of reinsurance carriers.

Other financial services companies risk. Many of the investment considerations discussed in connection with banks and insurance companies also apply to financial services companies. These companies are all subject to extensive regulation, rapid business changes, volatile performance dependent upon the availability and cost of capital and prevailing interest rates and significant competition. General economic conditions significantly affect these companies. Credit and other losses resulting from the financial difficulty of borrowers or other third parties have a potentially adverse effect on companies in this sector. Investment banking, securities brokerage and investment advisory companies are particularly subject to government regulation and the risks inherent in securities trading and underwriting activities.

Technology companies risk. A fund investing in technology companies, including companies engaged in Internet-related activities, is subject to the risk of short product cycles and rapid obsolescence of products and services and competition from new and existing companies. Investments in the technology sector may be susceptible to heightened risk of cybersecurity breaches, which may allow an unauthorized party to gain access to personally identifiable information and other customer data. The realization of any one of these risks may result in significant earnings loss and price

volatility. Some technology companies also have limited operating histories and are subject to the risks of a small or unseasoned company described under “Small and mid-sized company risk.”

Utilities risk. Issuers in the utilities sector are subject to many risks, including the following: increases in fuel and other operating costs; restrictions on operations; increased costs and delays as a result of environmental and safety regulations; coping with the impact of energy conservation and other factors reducing the demand for services; technological innovations that may render existing plants, equipment or products obsolete; the potential impact of natural or man-made disasters; difficulty in obtaining adequate returns on invested capital; difficulty in obtaining approval for rate increases; the high cost of obtaining financing, particularly during periods of inflation; increased competition resulting from deregulation, overcapacity and pricing pressures; and the negative impact of regulation. Because utility companies are faced with the same obstacles, issues and regulatory burdens, their securities may react similarly and more in unison to these or other market conditions.

Short sales risk

A fund may make short sales of securities. This means a fund may sell a security that it does not own in anticipation of a decline in the market value of the security. A fund generally borrows the security to deliver to the buyer in a short sale. The fund must then buy the security at its market price when the borrowed security must be returned to the lender. Short sales involve costs and risk. The fund must pay the lender interest on a security it borrows, and the fund will lose money if the price of the borrowed security increases between the time of the short sale and the date when the fund replaces the borrowed security. Further, if other short positions of the same security are closed out at the same time, a “short squeeze” can occur where demand exceeds the supply for the security sold short. A short squeeze makes it more likely that the fund will need to replace the borrowed security at an unfavorable price. A fund may also make short sales “against the box.” In a short sale against the box, at the time of sale, the fund owns or has the right to acquire the identical security, or one equivalent in kind or amount, at no additional cost.

Subject to regulatory requirements, until a fund closes its short position or replaces a borrowed security, a fund will comply with all applicable regulatory requirements, including the Derivatives Rule.

Small and mid-sized company risk

Market risk and liquidity risk may be pronounced for securities of companies with medium-sized market capitalizations and are particularly pronounced for securities of companies with smaller market capitalizations. These companies may have limited product lines, markets, or financial resources, or they may depend on a few key employees. The securities of companies with medium and smaller market capitalizations may trade less frequently and in lesser volume than more widely held securities, and their value may fluctuate more sharply than those securities. They may also trade in the OTC market or on a regional exchange, or may otherwise have limited liquidity. Investments in less-seasoned companies with medium and smaller market capitalizations may present greater opportunities for growth and capital appreciation, but also involve greater risks than are customarily associated with more established companies with larger market capitalizations. These risks apply to all funds that invest in the securities of companies with smaller- or medium-sized market capitalizations. For purposes of the fund’s investment policies, the market capitalization of a company is based on its capitalization at the time the fund purchases the company’s securities. Market capitalizations of companies change over time. The fund is not obligated to sell a company’s security simply because, subsequent to its purchase, the company’s market capitalization has changed to be outside the capitalization range, if any, in effect for the fund.

Tax diversification risk

Money Market Trust operates as a “government money market fund” in accordance with Rule 2a-7 under the Investment Company Act of 1940, as amended (a “Government Fund”). Additionally, the fund intends to meet the diversification requirements that are applicable to insurance company separate accounts under Subchapter L of the Internal Revenue Code of 1986, as amended (the “Diversification Requirements”). To satisfy the Diversification Requirements applicable to variable annuity contracts, the value of the assets of the fund invested in securities issued by the United States government must remain below specified thresholds. For these purposes, each United States government agency or instrumentality is treated as a separate issuer (subject to special rules applicable to government agency-issued mortgage-backed securities). Under a Notice issued by the Internal Revenue Service in 2016, pending amendment of the applicable regulations, government money market funds may rely upon an alternative diversification standard.

A failure to satisfy the Diversification Requirements could have significant adverse tax consequences for variable annuity contract owners whose contract values are determined by investment in the fund.

Telecommunications sector risk

Companies in the telecommunications sector are subject to the additional risks of rapid obsolescence, lack of standardization or compatibility with existing technologies, an unfavorable regulatory environment, and a dependency on patent and copyright protection. The prices of the securities of companies in the telecommunications sector may fluctuate widely due to both federal and state regulations governing rates of return and services that may be offered, fierce competition for market share, and competitive challenges in the United States from foreign competitors engaged in strategic joint ventures with U.S. companies and in foreign markets from both U.S. and foreign competitors. In addition, recent industry consolidation trends may lead to increased regulation of telecommunications companies in their primary markets.

U.S. government agency obligations risk

Government-sponsored entities such as Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal Home Loan Banks, although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt securities that they issue are neither guaranteed nor issued by the U.S. government. Such debt securities are subject to the risk of default on the payment of interest and/or principal, similar to the debt securities of private issuers. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Although the U.S. government has provided financial support to Fannie Mae and Freddie Mac in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

U.S. Treasury obligations risk

The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the fund's investments in obligations issued by the U.S. Treasury to decline.

Value investment style risk

Certain equity securities (generally referred to as value securities) are purchased primarily because they are selling at prices below what the manager believes to be their fundamental value and not necessarily because the issuing companies are expected to experience significant earnings growth. The fund bears the risk that the companies that issued these securities may not overcome the adverse business developments or other factors causing their securities to be perceived by the manager to be underpriced or that the market may never come to recognize their fundamental value. A value security may not increase in price, as anticipated by the manager investing in such securities, if other investors fail to recognize the company's value and bid up the price or invest in markets favoring faster growing companies. The fund's strategy of investing in value securities also carries the risk that in certain markets, value securities will underperform growth securities. In addition, securities issued by U.S. entities with substantial foreign operations may involve risks relating to economic, political or regulatory conditions in foreign countries.

Warrants risk

Warrants are rights to purchase securities at specific prices and are valid for a specific period of time. Warrant prices do not necessarily move parallel to the prices of the underlying securities, and warrant holders receive no dividends and have no voting rights or rights with respect to the assets of an issuer. The price of a warrant may be more volatile than the price of its underlying security, and a warrant may offer greater potential for capital appreciation as well as capital loss. Warrants cease to have value if not exercised prior to the expiration date. These factors can make warrants more speculative than other types of investments.

ADDITIONAL INFORMATION ABOUT THE FUNDS' AND THE FUNDS OF FUNDS' INVESTMENT POLICIES

Subject to certain restrictions and except as noted below, a fund may use the following investment strategies and purchase the following types of securities.

Foreign Repurchase Agreements

A fund may enter into foreign repurchase agreements. Foreign repurchase agreements may be less well secured than U.S. repurchase agreements, and may be denominated in foreign currencies. They also may involve greater risk of loss if the counterparty defaults. Some counterparties in these transactions may be less creditworthy than those in U.S. markets.

Illiquid Securities

A fund may not invest more than 15% of its net assets (or 5% in the case of Money Market Trust) in securities that cannot be sold or disposed of in seven calendar days or less without the sale or disposition significantly changing the market value of the investment ("illiquid securities"). Investment in illiquid securities involves the risk that, because of the lack of consistent market demand for such securities, a fund may be forced to sell them at a discount from the last offer price.

Indexed/Structured Securities

A fund may invest in indexed/structured securities. These securities are typically short-to intermediate-term debt securities whose value at maturity or interest rate is linked to currencies, interest rates, equity securities, indices, commodity prices or other financial indicators. Such securities may be positively or negatively indexed (i.e., their value may increase or decrease if the reference index or instrument appreciates). Indexed/structured securities may have return characteristics similar to direct investments in the underlying instruments. A fund bears the market risk of an investment in the underlying instruments, as well as the credit risk of the issuer.

Lending of Fund Securities

A fund may lend its securities so long as such loans do not represent more than 33 1/3% of the fund's total assets, except through the purchase of debt obligations or the use of repurchase agreements. As collateral for the loaned securities, the borrower gives the lending portfolio collateral equal to at least 100% of the value of the loaned securities. The collateral may consist of cash, cash equivalents or securities issued or guaranteed by the

U.S. government or its agencies or instrumentalities. The borrower must also agree to increase the collateral if the value of the loaned securities increases. As with other extensions of credit, there are risks of delay in recovery or even loss of rights in the collateral should the borrower of the securities fail financially.

Loan Participations

The funds may invest in fixed-and floating-rate loans, which investments generally will be in the form of loan participations and assignments of such loans. Participations and assignments involve special types of risks, including credit risk, interest rate risk, liquidity risk, and the risks of being a lender. Investments in loan participations and assignments present the possibility that a fund could be held liable as a co-lender under emerging legal theories of lender liability. If a fund purchases a participation, it may only be able to enforce its rights through the lender and may assume the credit risk of the lender in addition to the borrower.

Mortgage Dollar Rolls

The funds may enter into mortgage dollar rolls. Under a mortgage dollar roll, a fund sells mortgage-backed securities for delivery in the future (generally within 30 days) and simultaneously contracts to repurchase substantially similar (same type, coupon and maturity) securities on a specified future date.

Dollar roll transactions involve the risk that the market value of the securities sold by the funds may decline below the repurchase price of those securities. A mortgage dollar roll may be considered a form of leveraging, and may, therefore, increase fluctuations in a fund's NAV per share. As further outlined in the "Hedging, derivatives, and other strategic transactions risk" above, the SEC adopted the Derivatives Rule on October 28, 2020, and in doing so announced it would rescind SEC releases, guidance and no-action letters related to funds' coverage and asset segregation practices. Funds were required to comply with the Derivatives Rule requirements by August 19, 2022. Covered rolls will be entered into in accordance with the regulatory requirements described in the "Government Regulation of Derivatives" section of the SAI.

Repurchase Agreements

The funds may enter into repurchase agreements. Repurchase agreements involve the acquisition by a fund of debt securities subject to an agreement to resell them at an agreed-upon price. The arrangement is in economic effect a loan collateralized by securities. The fund's risk in a repurchase transaction is limited to the ability of the seller to pay the agreed-upon sum on the delivery date. In the event of bankruptcy or other default by the seller, the instrument purchased may decline in value, interest payable on the instrument may be lost and there may be possible delays and expense in liquidating the instrument. Securities subject to repurchase agreements will be valued every business day and additional collateral will be requested if necessary so that the value of the collateral is at least equal to the value of the repurchased obligation, including the interest accrued thereon. Repurchases agreements maturing in more than seven days are deemed to be illiquid (except for those that can be terminated after a notice period of seven days or less).

Reverse Repurchase Agreements

The funds may enter into "reverse" repurchase agreements. Under a reverse repurchase agreement, a fund may sell a debt security and agree to repurchase it at an agreed-upon time and at an agreed-upon price. Subject to the requirements noted in the "Government Regulation of Derivatives" section of the SAI, a fund will either treat reverse repurchase agreements and similar financings as derivatives subject to the Derivatives Rule limitations or not as derivatives and treat reverse repurchase agreements and similar financings transactions as senior securities equivalent to bank borrowings subject to asset coverage requirements of Section 18 of the 1940 Act. A fund will ensure that its repurchase agreement transactions are "fully collateralized" by maintaining in a custodial account cash, Treasury bills, other U.S. government securities, or certain other liquid assets having an aggregate value at least equal to the amount of such commitment to repurchase including accrued interest, until payment is made. A reverse repurchase agreement may be considered a form of leveraging and may, therefore, increase fluctuations in a fund's NAV per share.

U.S. Government Securities

A fund may invest in U.S. government securities issued or guaranteed by the U.S. government or by an agency or instrumentality of the U.S. government. Not all U.S. government securities are backed by the full faith and credit of the United States. Some are supported only by the credit of the issuing agency or instrumentality, which depends entirely on its own resources to repay the debt. U.S. government securities that are backed by the full faith and credit of the United States include U.S. Treasuries and mortgage-backed securities guaranteed by the Government National Mortgage Association. Securities that are only supported by the credit of the issuing agency or instrumentality include Fannie Mae, FHLBs and Freddie Mac. See "Credit and counterparty risk" for additional information on Fannie Mae and Freddie Mac securities.

Warrants

The funds may, subject to certain restrictions, purchase warrants, including warrants traded independently of the underlying securities. Warrants are rights to purchase securities at specific prices valid for a specific period of time. Their prices do not necessarily move parallel to the prices of the underlying securities, and warrant holders receive no dividends and have no voting rights or rights with respect to the assets of an issuer. Warrants cease to have value if not exercised prior to their expiration dates.

MANAGEMENT

Board of Trustees

JHVIT is managed under the direction of its Trustees. The Board of Trustees oversees the business activities of the funds and retains the services of the various firms that carry out the operations of the funds. The Board may change the investment objective and strategy of a fund without shareholder approval.

Investment Management

John Hancock Variable Trust Advisers LLC (Advisor) is the investment advisor to JHVIT and is registered with the SEC as an investment advisor under the Investment Advisers Act of 1940, as amended (Advisers Act). The Advisor is a Delaware limited liability company with its principal offices located at 200 Berkeley Street, Boston, Massachusetts 02116. The advisor is an indirect principally owned subsidiary of John Hancock Life Insurance Company (U.S.A.), which in turn is a subsidiary of Manulife Financial Corporation (MFC), a publicly traded company based in Toronto, Canada. MFC and its subsidiaries operate as "Manulife Financial" in Canada and Asia and principally as "John Hancock" in the United States.

JHVIT fund shares are sold only to insurance companies and their separate accounts as the underlying investment option for variable annuity and variable life insurance contracts and group annuity contract offered to 401(k) plans (variable contracts). Two of these insurance companies, John Hancock Life Insurance Company (U.S.A.) and John Hancock Life Insurance Company of New York, are affiliates of the Advisor (Affiliated Insurance Companies). The Affiliated Insurance Companies perform administrative services for the JHVIT funds in connection with the variable contracts for which they serve as the underlying investment option. To compensate the Affiliated Insurance Companies for providing these services, the Advisor, not the JHVIT funds, pays each Affiliated Insurance Company an administrative fee equal to 0.25% of the total average daily net assets of the JHVIT funds attributable to variable contracts issued by the Affiliated Insurance Company. The Advisor may also pay insurance companies not affiliated with the Advisor an administrative fee for performing similar administrative services for the funds.

Subject to general oversight by the Board of Trustees, the Advisor manages and supervises the investment operations and business affairs of the fund. The Advisor selects, contracts with and compensates one or more subadvisors to manage all or a portion of the fund's portfolio assets, subject to oversight by the Advisor. In this role, the Advisor has supervisory responsibility for managing the investment and reinvestment of the funds' portfolio assets through proactive oversight and monitoring of the subadvisor and the funds, as described in further detail below. The Advisor is responsible for developing overall investment strategies for the funds and overseeing and implementing the funds' continuous investment programs and provides a variety of advisory oversight and investment research services. The Advisor also provides management and transition services associated with certain fund events (e.g., strategy, portfolio manager or subadvisor changes) and coordinates and oversees services provided under other agreements.

The Advisor has ultimate responsibility to oversee a subadvisor and recommend to the Board of Trustees its hiring, termination, and replacement. In this capacity, the Advisor, among other things: (i) monitors on a daily basis the compliance of the subadvisor with the investment objectives and related policies of the fund; (ii) monitors significant changes that may impact the subadvisor's overall business and regularly performs due diligence reviews of the subadvisor; (iii) reviews the performance of the subadvisor; and (iv) reports periodically on such performance to the Board of Trustees. The Advisor employs a team of investment professionals who provide these ongoing research and monitoring services.

Subject to approval by the Board of Trustees, the Advisor may elect to manage fund assets directly. As compensation for its services, the Advisor receives a fee from JHVIT computed separately for each. Appendix A to this Prospectus is a schedule of the management fees each fund currently is obligated to pay the Advisor. The subadvisors are compensated by the Advisor and not by the funds.

Each fund relies on an order from the Securities and Exchange Commission (SEC) permitting the Advisor, subject to approval by the Board of Trustees, to appoint a subadvisor or change the terms of a subadvisory agreement without obtaining shareholder approval. Each, therefore, is able to change subadvisors or the fees paid to a subadvisor, from time to time, without the expense and delays associated with obtaining shareholder approval of the change. This order does not, however, permit the Advisor to appoint a subadvisor that is an affiliate of the Advisor or JHVIT (other than by reason of serving as a subadvisor to a fund), or to increase the subadvisory fee of an affiliated subadvisor, without the approval of the shareholders.

The basis for the Board of Trustees' approval of the advisory fees, and of the investment advisory agreement overall, including the subadvisory agreements, is discussed in the fund's most recent annual shareholder report for the period ended June 30.

For information on the advisory fee for the master fund for each of the JHVIT Feeder Funds, please refer to the master fund prospectus (the American Funds Insurance Series prospectus) which accompanies this Prospectus.

Additional information about fund expenses

Each fund's annual operating expenses will likely vary throughout the period and from year to year. Each fund's expenses for the current fiscal year may be higher than the expenses listed in the fund's "Annual fund operating expenses" table, for some of the following reasons: (i) a significant decrease in average net assets may result in a higher advisory fee rate if any advisory fee breakpoints are not achieved; (ii) a significant decrease in average net

assets may result in an increase in the expense ratio because certain fund expenses do not decrease as asset levels decrease; or (iii) fees may be incurred for extraordinary events such as fund tax expenses.

The advisor has contractually agreed to waive a portion of its management fee and/or reimburse expenses for certain funds of the John Hancock funds complex, including the funds (the participating portfolios). The waiver equals, on an annualized basis, 0.0100% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$75 billion but is less than or equal to \$125 billion; 0.0125% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$125 billion but is less than or equal to \$150 billion; 0.0150% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$150 billion but is less than or equal to \$175 billion; 0.0175% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$175 billion but is less than or equal to \$200 billion; 0.0200% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$200 billion but is less than or equal to \$225 billion; and 0.0225% of that portion of the aggregate net assets of all the participating portfolios that exceeds \$225 billion. The amount of the reimbursement is calculated daily and allocated among all the participating portfolios in proportion to the daily net assets of each participating portfolio. This agreement expires on July 31, 2025, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

The Advisor contractually agrees to reduce its management fee or, if necessary, make payment to Fundamental Large Cap Value Trust Series I shares in an amount equal to the amount by which expenses of Fundamental Large Cap Value Trust Series I shares exceed 0.88% of average daily net assets attributable to the class. For purposes of this agreement, “expenses of Fundamental Large Cap Value Trust Series I shares” means all expenses of the class (including fund expenses attributable to the class), excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, (e) underlying fund expenses (acquired fund fees), and (f) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the Advisor based upon a determination that this is appropriate under the circumstances at that time.

The Advisor contractually agrees to reduce its management fee or, if necessary, make payment to Lifestyle Balanced Portfolio Series I and Series II shares in an amount equal to the amount by which expenses of Lifestyle Balanced Portfolio Series I and Series II shares exceed 1.83% of average daily net assets attributable to the class. For purposes of this agreement, “expenses of Lifestyle Balanced Portfolio Series I and Series II shares” means all expenses of the class (including fund expenses attributable to the class), excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, and (e) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the Advisor based upon a determination that this is appropriate under the circumstances at that time.

The Advisor contractually agrees to reduce its management fee or, if necessary, make payment to Lifestyle Growth Portfolio Series I shares in an amount equal to the amount by which expenses of Lifestyle Growth Portfolio Series I shares exceed 0.92% of average daily net assets attributable to the class. For purposes of this agreement, “expenses of Lifestyle Growth Portfolio Series I shares” means all expenses of the class (including fund expenses attributable to the class), excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, and (e) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the Advisor based upon a determination that this is appropriate under the circumstances at that time.

The Advisor contractually agrees to reduce its management fee or, if necessary, make payment to the Lifestyle Portfolios in an amount equal to the amount by which “Other expenses” of the fund exceed 0.04% of the average daily net assets of the fund. “Other expenses” means all of the expenses of the fund, excluding certain expenses such as advisory fees, taxes, brokerage commissions, interest expense, litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, distribution and service (Rule 12b-1) fees, underlying fund expenses (acquired fund fees), and short dividend expense. The current expense limitation agreement expires on April 30, 2025 unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

The Advisor contractually agrees to reduce its management fee or, if necessary, make payment to Small Cap Index Trust Series I and Series NAV shares in an amount equal to the amount by which expenses of Small Cap Index Trust Series I and Series NAV shares exceed 0.70% of average daily net assets attributable to the class. For purposes of this agreement, “expenses of Small Cap Index Trust Series I and Series NAV shares” means all expenses of the class (including fund expenses attributable to the class), excluding (a) taxes, (b) brokerage commissions, (c) interest expense, (d) litigation and indemnification expenses and other extraordinary expenses not incurred in the ordinary course of the fund’s business, (e) underlying fund expenses (acquired fund fees), and (f) short dividend expense. This agreement expires on April 30, 2025, unless renewed by mutual agreement of the fund and the Advisor based upon a determination that this is appropriate under the circumstances at that time.

Subadvisors and Portfolio Managers

The subadvisors handle the portfolio management activities of the funds, subject to oversight by the Advisor. Each subadvisor formulates a continuous investment program for each fund it subadvices, consistent with the fund’s investment objective and strategies as described above. Each subadvisor regularly reports to the Advisor and the Board of Trustees with respect to the implementation of such programs.

Set forth below, in alphabetical order by subadvisor, is additional information about the subadvisors and the fund portfolio managers. The SAI includes additional details about the portfolio managers, including information about their compensation, accounts they manage other than the funds and their ownership of fund securities.

Funds of Funds

The subadvisor will benefit from increased subadvisory fees when assets are allocated to affiliated subadvised funds that it manages. In addition, MFC, as the parent company of each subadvisor and all affiliated investment advisors, will benefit through increased revenue generated from the fees on assets managed by the affiliated subadvisors. Accordingly, there is a conflict of interest in that there is an incentive for each subadvisor to allocate fund assets to funds subadvised by the subadvisor and other affiliated subadvised funds. However, the subadvisor has a duty to allocate assets to an affiliated subadvised fund (and to affiliated underlying funds more broadly) only when the subadvisor believes it is in the best interests of fund shareholders, without regard to any economic incentive. As part of its oversight of the funds and the subadvisors, the advisor will monitor to ensure that allocations are conducted in accordance with these principles. This conflict of interest is also considered by the Independent Trustees when approving or replacing affiliated subadvisors.

Allspring Global Investments, LLC (“Allspring Investments”)

Allspring Investments, located at 1415 Vantage Park Drive, Charlotte, North Carolina, is a registered investment advisor that provides investment advisory services for registered mutual funds, company retirement plans, foundations, endowments, trust companies and high net-worth individuals. Allspring Investments is a wholly-owned subsidiary of Allspring Global Investment Holdings, LLC, a holding company indirectly owned by certain private funds of GTCR LLC and Reverence Capital Partners, L.P. As of December 31, 2023, Allspring Investments had total assets under management of approximately \$428.0 billion.

Allspring Investments has identified the following persons as jointly and primarily responsible for the day-to-day management of the fund’s portfolio as set forth below. These managers are employed by Allspring Investments.

Fund Core Bond Trust

Portfolio Managers Maulik Bhansali, CFA Jarad Vasquez

- *Maulik Bhansali, CFA*. Mr. Bhansali joined Allspring Investments in 2001, where he currently serves as a Senior Portfolio Manager.
- *Jarad Vasquez*. Mr. Vasquez joined Allspring Investments in 2007, where he currently serves as a Senior Portfolio Manager.

Boston Partners Global Investors, Inc. (“Boston Partners”)

Boston Partners is an indirect, wholly owned subsidiary of ORIX Corporation of Japan. Boston Partners Global Investors, Inc. is located at One Beacon Street, 30th Floor, Boston, MA 02108. As of December 31, 2023, Boston Partners had total assets under management of approximately \$94.1 billion.

Boston Partners has identified the following persons as jointly and primarily responsible for the day-to-day management of the fund’s portfolio as set forth below. These managers are employed by Boston Partners.

Fund Disciplined Value International Trust

Portfolio Managers Christopher K. Hart, CFA Joshua M. Jones, CFA Soyoun Song

- *Christopher K. Hart, CFA*. Portfolio Manager. Managed the fund since 2020. Joined Boston Partners in 2002.
- *Joshua M. Jones, CFA*. Portfolio Manager. Managed the fund since 2020. Joined Boston Partners in 2006.
- *Soyoun Song*. Portfolio Manager. Managed the fund since 2024. Joined Boston Partners in 2019. Began business career in 2005.

Capital Research and Management Company (“CRMC”)

CRMC is located at 333 South Hope Street, Los Angeles, California 90071. CRMC is a wholly-owned subsidiary of The Capital Group Companies, Inc. CRMC has been providing investment management services since 1931. As of December 31, 2023, CRMC had total assets under management of more than \$2 trillion.

CRMC manages equity assets through three equity investment divisions and fixed-income assets through its fixed-income investment division, Capital Fixed Income Investors. The three equity investment divisions - Capital World Investors, Capital Research Global Investors and Capital International Investors - make investment decisions independently of one another.

CRMC has identified the following persons as jointly and primarily responsible for the day-to-day management of the master funds’ portfolios as set forth below. These managers are employed by CRMC.

Portfolio Manager for the Series/Title (If Applicable)	Primary Title with Investment Advisor (or Affiliate) and Investment Experience During Past Five Years	Portfolio Manager's Role in Management of the Fund(s)
Julian N. Abdey	Partner — Capital International Investors Investment professional for 29 years; 22 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
Paul Benjamin	Partner — Capital World Investors Investment professional for 19 years; all with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
Alan N. Berro Co-President	Partner — Capital World Investors Investment professional for 38 years in total; 33 years with CRMC or affiliate	Serves as an equity portfolio manager for Asset Allocation Fund
Mark L. Casey	Partner — Capital International Investors Investment professional for 24 years; all with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
Patrice Collette Senior Vice President	Partner — Capital World Investors Investment professional for 30 years in total; 24 years with CRMC or affiliate	Serves as an equity portfolio manager for Global Growth Fund
David A. Daigle	Partner — Capital Fixed Income Investors Investment professional for 30 years in total; all with CRMC or affiliate	Serves as a fixed-income portfolio manager for Asset Allocation Fund
Charles E. Ellwein	Partner — Capital Research Global Investors Investment professional for 28 years in total; 18 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
J. Blair Frank	Partner — Capital Research Global Investors Investment professional for 31 years in total; 30 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
Irfan M. Furniturewala Senior Vice President	Partner — Capital International Investors Investment professional for 24 years in total; 23 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
Nicholas J. Grace	Partner — Capital Research Global Investors Investment professional for 34 years in total; 30 years with CRMC or affiliate	Serves as an equity portfolio manager for International Fund
Matt Hochstetler	Partner — Capital World Investors Investment professional for 25 years in total; 10 years with CRMC or affiliate	Serves as an equity portfolio manager for Global Growth Fund
Roz Hongsaranagon	Partner — Capital World Investors Investment professional for 22 years in total; all with CRMC or affiliate	Serves as an equity portfolio manager for Global Growth Fund
Emme Kozloff	Partner — Capital World Investors Investment professional for 25 years in total; 18 years with CRMC or affiliate	Serves as an equity portfolio manager for Asset Allocation Fund
Jin Lee	Partner — Capital World Investors Investment professional for 28 years in total; 27 years with CRMC or affiliate	Serves as an equity portfolio manager for Asset Allocation Fund
Sung Lee Senior Vice President	Partner — Capital Research Global Investors Investment professional for 30 years; all with CRMC or affiliate	Serves as an equity portfolio manager for International Fund
Keiko McKibben Senior Vice President	Partner — Capital Research Global Investors Investment professional for 30 years in total; 26 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
Donald D. O'Neal Co-President and Trustee	Partner — Capital International Investors Investment professional for 39 years; all with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
Anne-Marie Peterson	Partner — Capital World Investors Investment professional for 30 years in total; 19 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
Piyada Phanaphat	Partner — Capital World Investors Investment professional for 21 years in total; 17 years with CRMC or affiliate	Serves as an equity portfolio manager for Global Growth Fund

Portfolio Manager for the Series/Title (If Applicable)	Primary Title with Investment Advisor (or Affiliate) and Investment Experience During Past Five Years	Portfolio Manager's Role in Management of the Fund(s)
John R. Queen	Partner — Capital Fixed Income Investors Investment professional for 34 years in total; 22 years with CRMC or affiliate	Serves as a fixed-income portfolio manager for Asset Allocation Fund
Andraz Razen	Partner — Capital World Investors Investment professional for 26 years in total; 20 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund
William L. Robbins	Partner — Capital International Investors Investment professional for 32 years in total; 29 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
Renaud H. Samyn	Partner — Capital Research Global Investors Investment professional for 23 years; all with CRMC or affiliate	Serves as an equity portfolio manager for International Fund
Carlos A. Schonfeld Senior Vice President	Partner — Capital International Investors Investment professional for 26 years in total; 25 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth-Income Fund
Christopher Thomsen	Partner — Capital Research Global Investors Investment professional for 27 years in total; all with CRMC or affiliate	Serves as an equity portfolio manager for International Fund
Justin Toner	Partner — Capital World Investors Investment professional for 30 years in total; 23 years with CRMC or affiliate	Serves as an equity portfolio manager for Asset Allocation Fund
Alan J. Wilson Senior Vice President	Partner — Capital World Investors Investment professional for 39 years in total; 33 years with CRMC or affiliate	Serves as an equity portfolio manager for Growth Fund

Additional information regarding the portfolio managers' compensation, management of other accounts, and ownership of securities in the funds can be found in the SAI.

Dimensional Fund Advisors LP (“Dimensional”)

Dimensional was organized in 1981 as “Dimensional Fund Advisors, Inc.,” a Delaware corporation, and in 2006, it converted its legal name and organizational form to “Dimensional Fund Advisors LP,” a Delaware limited partnership. Dimensional is engaged in the business of providing investment management services. Dimensional is located at 6300 Bee Cave Road, Building One, Austin, Texas 78746. As of December 31, 2023, Dimensional had total assets under management of approximately \$677 billion.

Dimensional uses a team approach. The investment team includes the Investment Committee of Dimensional, portfolio managers and trading personnel. The Investment Committee is composed primarily of certain officers and directors of Dimensional who are appointed annually. Investment strategies for funds managed by Dimensional are set by the Investment Committee, which meets on a regular basis and also as needed to consider investment issues. The Investment Committee also sets and reviews all investment related policies and procedures and approves any changes in regards to approved countries, security types and brokers.

In accordance with the team approach, the portfolio managers and portfolio traders implement the policies and procedures established by the Investment Committee. The portfolio managers and portfolio traders also make daily investment decisions regarding fund management based on the parameters established by the Investment Committee. Dimensional has identified the following persons as jointly and primarily responsible for coordinating the day-to-day management of the funds' portfolios as set forth below. These managers are employed by Dimensional.

Funds Emerging Markets Value Trust

Portfolio Managers

Jed S. Fogdall
Mary T. Phillips, CFA
Ethan Wren, CFA

International Small Company Trust

Jed S. Fogdall
Arun Keswani, CFA
Joel P. Schneider

Small Cap Opportunities Trust

Jed S. Fogdall
Marc C. Leblond
Joel P. Schneider

- *Jed S. Fogdall.* Global Head of Portfolio Management, Senior Portfolio Manager and Vice President at Dimensional and chairman of the Investment Committee. Mr. Fogdall joined Dimensional as a Portfolio Manager in 2004 and has been Global Head of Portfolio Management since 2019.

- *Marc C. Leblond*. Senior Portfolio Manager and Vice President at Dimensional. Mr. Leblond joined Dimensional in 2015 and has been a portfolio manager since 2017.
- *Arun Keswani, CFA*. Senior Portfolio Manager and Vice President at Dimensional. Mr. Keswani joined Dimensional in 2011 and has been a portfolio manager since 2013.
- *Mary T. Phillips, CFA*. Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President at Dimensional and a member of the Investment Committee. Ms. Phillips joined Dimensional in 2012 and has been a portfolio manager since 2014.
- *Joel P. Schneider*. Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President at Dimensional and a member of the Investment Committee. Mr. Schneider joined Dimensional in 2011 and has been a portfolio manager since 2013.
- *Ethan Wren, CFA*. Senior Portfolio Manager and Vice President at Dimensional. Mr. Wren joined Dimensional in 2010 and has been a portfolio manager since 2018.

GW&K Investment Management, LLC (“GW&K”)

Founded in 1974, GW&K serves as an investment advisor or subadvisor to private clients, pension and profit-sharing plans, mutual funds, estates, charitable foundations, endowments, corporations, and other entities. GW&K is located at 222 Berkeley Street, Boston, Massachusetts 02116. Affiliated Managers Group, Inc., a publicly traded asset management company (NYSE: AMG), holds a majority equity interest in GW&K. As of December 31, 2023, GW&K had total assets under management of approximately \$50.7 billion.

GW&K has identified the following persons as jointly and primarily responsible for the day-to-day management of the fund’s portfolio as set forth below. These managers are employed by GW&K.

Fund Small Cap Opportunities Trust

Portfolio Manager
Joseph C. Craigen, CFA
Daniel L. Miller, CFA

- *Joseph C. Craigen, CFA*. Partner and Equity Portfolio Manager, who has been with GW&K since 2008.
- *Daniel L. Miller, CFA*. Partner and Director of Equities, who has been with GW&K since 2008.

Jennison Associates LLC (“Jennison”)

Jennison is a Delaware limited liability company, located at 466 Lexington Avenue, New York, New York 10017, and has been (including its predecessor, Jennison Associates Capital Corp.) in the investment advisory business since 1969. Jennison is a direct, wholly-owned subsidiary of PGIM, Inc., which is a direct, wholly-owned subsidiary of PGIM Holding Company LLC, which is a direct, wholly-owned subsidiary of Prudential Financial, Inc. As of December 31, 2023, Jennison had total assets under management of approximately \$194.1 billion.

Jennison has identified the following persons as jointly and primarily responsible for the day-to-day management of the fund’s portfolio as set forth below. These managers are employed by Jennison.

Fund Capital Appreciation Trust

Portfolio Managers
Blair A. Boyer
Michael A. Del Balso
Natasha Kuhlkin, CFA
Kathleen A. McCarragher

- *Blair A. Boyer*. Mr. Boyer is a Managing Director, Co-Head of Large Cap Growth Equity and a large cap growth equity portfolio manager. He joined Jennison in March 1993 as an international equity analyst and joined the large cap growth team as a portfolio manager in 2003.
- *Michael A. Del Balso*. Mr. Del Balso is a Managing Director, and a large cap growth equity portfolio manager. He joined Jennison in May 1972 as a research analyst and became a portfolio manager in 1999.
- *Natasha Kuhlkin, CFA*. Ms. Kuhlkin is a Managing Director and a large cap growth equity portfolio manager. She joined Jennison in May 2004.
- *Kathleen A. McCarragher*. Ms. McCarragher is a Managing Director, the Head of Growth Equity and a large cap growth equity portfolio manager. She joined Jennison in May 1998.

The portfolio managers for the fund are supported by other Jennison portfolio managers, research analysts and investment professionals. Team members conduct research, make securities recommendations and support the portfolio managers in all activities. Members of the team may change from time to time.

Manulife Investment Management (North America) Limited (“Manulife IM (NA)”)

Manulife IM (NA) is a corporation subject to the laws of Canada. Its principal business at the present time is to provide investment management services to the portfolios of JHVIT for which it is the subadvisor as well as other portfolios advised by the Advisor. Manulife IM (NA) is an indirect, wholly-owned subsidiary of MFC based in Toronto, Canada. MFC is the holding company of The Manufacturers Life Insurance Company and its subsidiaries, including

Manulife Investment Management (US) LLC and Manulife Investment Management (Hong Kong) Limited, collectively known as Manulife Financial. The address of Manulife IM (NA) is 200 Bloor Street East, Toronto, Ontario, Canada M4W 1E5. References to Manulife IM (NA) below refer to its predecessor or affiliate organizations and entities. As of December 31, 2023, Manulife IM (NA) had total assets under management of approximately \$19.94 billion.

Manulife IM (NA) has identified the following persons as jointly and primarily responsible for the day-to-day management of the funds' portfolios as set forth below. These managers are employed by Manulife IM (NA).

Funds	Portfolio Managers
500 Index Trust	Boncana Maiga, CFA, CIM Ashikhusein Shahpurwala, CFA, PRM
Mid Cap Index Trust	Boncana Maiga, CFA, CIM Ashikhusein Shahpurwala, CFA, PRM
Small Cap Index Trust	Boncana Maiga, CFA, CIM Ashikhusein Shahpurwala, CFA, PRM
Total Stock Market Index Trust	Boncana Maiga, CFA, CIM Ashikhusein Shahpurwala, CFA, PRM

- *Boncana Maiga, CFA, CIM*. Portfolio Manager; joined Manulife IM (NA) in 2010.
- *Ashikhusein Shahpurwala, CFA, PRM*. Senior Portfolio Manager; joined Manulife IM (NA) in 2003.

Manulife Investment Management (US) LLC (“Manulife IM (US)”)

Manulife IM (US), a Delaware limited liability company located at 197 Clarendon Street, Boston, Massachusetts 02116, was founded in 1979. It is a wholly-owned subsidiary of John Hancock Life Insurance Company (U.S.A.) and an affiliate of the Advisor. John Hancock Life Insurance Company (U.S.A.) is a subsidiary of MFC, based in Toronto, Canada. MFC is the holding company of the Manufacturers Life Insurance Company and its subsidiaries, collectively known as Manulife Financial. References to Manulife IM (US) below refer to its predecessor or affiliate organizations and entities. As of December 31, 2023, Manulife IM (US) had total assets under management of approximately \$200.03 billion.

Manulife IM (US) has identified the following persons as jointly and primarily responsible for the day-to-day management of the funds' portfolios as set forth below. These managers are employed by Manulife IM (US).

Funds	Portfolio Managers
Active Bond Trust	Howard C. Greene, CFA Jeffrey N. Given, CFA David A. Bees, CFA Pranay Sonalkar, CFA Connor Minnaar, CFA
Financial Industries Trust	Susan A. Curry Ryan P. Lentell, CFA
Fundamental All Cap Core Trust	Emory W. (Sandy) Sanders, Jr., CFA Jonathan T. White, CFA
Fundamental Large Cap Value Trust	Emory W. (Sandy) Sanders, Jr., CFA Nicholas P. Renart
Global Equity Trust	Paul Boyne Stephen Hermsdorf Edward Ritchie, ASIP Felicity Smith
Lifestyle Balanced Portfolio	Geoffrey Kelley, CFA David Kobuszewski, CFA Robert E. Sykes, CFA Nathan W. Thoof, CFA
Lifestyle Conservative Portfolio	Geoffrey Kelley, CFA David Kobuszewski, CFA Robert E. Sykes, CFA Nathan W. Thoof, CFA
Lifestyle Growth Portfolio	Geoffrey Kelley, CFA David Kobuszewski, CFA Robert E. Sykes, CFA Nathan W. Thoof, CFA

Funds	Portfolio Managers
Lifestyle Moderate Portfolio	Geoffrey Kelley, CFA David Kobuszewski, CFA Robert E. Sykes, CFA Nathan W. Thooft, CFA
Managed Volatility Balanced Portfolio	Geoffrey Kelley, CFA Robert E. Sykes, CFA Nathan W. Thooft, CFA Jeffrey Wu
Managed Volatility Conservative Portfolio	Geoffrey Kelley, CFA Robert E. Sykes, CFA Nathan W. Thooft, CFA Jeffrey Wu
Managed Volatility Growth Portfolio	Geoffrey Kelley, CFA Robert E. Sykes, CFA Nathan W. Thooft, CFA Jeffrey Wu
Managed Volatility Moderate Portfolio	Geoffrey Kelley, CFA Robert E. Sykes, CFA Nathan W. Thooft, CFA Jeffrey Wu
Select Bond Trust	Howard C. Greene, CFA Jeffrey N. Given, CFA Pranay Sonalkar, CFA Connor Minnaar, CFA
Short Term Government Income Trust	Howard C. Greene, CFA Jeffrey N. Given, CFA Connor Minnaar, CFA
Strategic Equity Allocation Trust	Nathan W. Thooft, CFA Michael J. Comer, CFA James Robertson, CIM David J. Rule, CFA, FRM ¹
Strategic Income Opportunities Trust	Thomas C. Goggins Kisoo Park Christopher M. Chapman, CFA Brad Lutz, CFA
Total Bond Market Trust	Pranay Sonalkar, CFA Connor Minnaar, CFA
Ultra Short Term Bond Trust	Howard C. Greene, CFA Jeffrey N. Given, CFA Pranay Sonalkar, CFA Connor Minnaar, CFA

- *David A. Bees, CFA.* Portfolio Manager; joined Manulife IM (US) in 2001.
- *Paul Boyne.* Senior Managing Director and Senior Portfolio Manager; joined Manulife IM (US) in 2013.
- *Christopher M. Chapman, CFA.* Senior Portfolio Manager, Co-Head of Global Multi-Sector Fixed Income; joined Manulife IM (US) in 2005.
- *Michael J. Comer, CFA.* Managing Director and Portfolio Manager; joined Manulife in 2010.
- *Susan A. Curry.* Senior Portfolio Manager; joined Manulife IM (US) in 2004.
- *Jeffrey N. Given, CFA.* Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income; joined Manulife IM (US) in 1993.
- *Thomas C. Goggins.* Senior Portfolio Manager; joined Manulife IM (US) in 2009.
- *Howard C. Greene, CFA.* Senior Portfolio Manager, Co-Head of U.S. Core and Core-Plus Fixed Income; joined Manulife IM (US) in 2002.
- *Stephen Hermsdorf.* Portfolio Manager and Analyst; joined Manulife IM (US) in 2015.
- *Geoffrey Kelley, CFA.* Senior Portfolio Manager, Global Head of Strategic Asset Allocation and Systematic Equity; joined Manulife IM (US) in 2018.
- *David Kobuszewski, CFA.* Portfolio Manager, Senior Investment Analyst; joined Manulife IM (US) in 2018.
- *Ryan P. Lentell, CFA.* Portfolio Manager; joined Manulife IM (US) in 2008.
- *Brad Lutz, CFA.* Senior Portfolio Manager; joined Manulife IM (US) in 2002.
- *Connor Minnaar, CFA.* Portfolio Manager; joined Manulife IM (US) in 2006.
- *Kisoo Park.* Senior Portfolio Manager; joined Manulife IM (US) in 2011.

- *Nicholas P. Renart*. Portfolio Manager and Senior Investment Analyst; joined Manulife IM (US) in 2011.
- *Edward Ritchie, ASIP*. Senior Managing Director and Head of Japan Equities, Portfolio Manager and Analyst; joined Manulife IM (US) in 2010.
- *James Robertson, CIM*. Head of Asset Allocation, Canada, Head of Tactical Asset Allocation and Senior Portfolio Manager; joined Manulife in 2016.
- *David J. Rule, CFA, FRM*.¹ Managing Director and Portfolio Manager; joined Manulife in 2017.
- *Emory W. (Sandy) Sanders, Jr., CFA*. Senior Portfolio Manager; joined Manulife IM (US) in 2010.
- *Felicity Smith*. Portfolio Manager and Analyst; joined Manulife IM (US) in 2020.
- *Pranay Sonalkar, CFA*. Portfolio Manager; joined Manulife IM (US) in 2014.
- *Robert E. Sykes, CFA*. Senior Portfolio Manager and Head of Asset Allocation; joined Manulife IM (US) in 2008.
- *Nathan W. Thooft, CFA*. Chief Investment Officer, Senior Portfolio Manager; joined Manulife IM (US) in 2008.
- *Jonathan T. White, CFA*. Senior Portfolio Manager; joined Manulife IM (US) in 2011.
- *Jeffrey Wu*. Portfolio Manager and Senior Investment Analyst; joined Manulife IM (US) in 2017; began business career in 2005.

¹ Effective June 6, 2024, David J. Rule, CFA, FRM will no longer serve as a portfolio manager of the fund.

SSGA Funds Management, Inc. (“SSGA FM”)

SSGA FM is located at One Iron Street, Boston, Massachusetts 02210. SSGA FM is an SEC registered investment advisor and is a wholly-owned subsidiary of State Street Global Advisors, Inc., which itself is a wholly-owned subsidiary of State Street Corporation (“State Street”), a publicly held financial holding company. SSGA FM and other advisory affiliates of State Street make up State Street Global Advisors (“SSGA”), the investment management arm of State Street. As of December 31, 2023, SSGA had total assets under management of approximately \$4.13 trillion.

The International Equity Index Trust is managed by SSGA’s Global Equity Beta Solutions (“GEBS”) Group. Portfolio managers Thomas Coleman and Karl Schneider are jointly and primarily responsible for the day-to-day management of the Portfolio. These managers are employed by SSGA FM.

Fund International Equity Index Trust

Portfolio Managers
Thomas Coleman, CFA
Karl Schneider, CAIA

- *Thomas Coleman, CFA*. Vice President and Senior Portfolio Manager; joined SSGA FM in 1998.
- *Karl Schneider, CAIA*. Managing Director, Senior Portfolio Manager and Head of Traditional Beta Strategies for the GEBS Group in the Americas; joined SSGA FM in 1997.

T. Rowe Price Associates, Inc. (“T. Rowe Price”)

T. Rowe Price Investment Management, Inc. serves as sub-subadvisor to *Capital Appreciation Value Trust* and *Small Company Value Trust*

T. Rowe Price, 100 East Pratt Street, Baltimore, Maryland 21202, was founded in 1937. As of December 31, 2023, T. Rowe Price had total assets under management of approximately \$1.45 trillion.

T. Rowe Price has identified the following persons as primarily responsible for the day-to-day management of the funds’ portfolios as set forth below. These managers are employed by T. Rowe Price.

Funds Blue Chip Growth Trust Capital Appreciation Value Trust Equity Income Trust Health Sciences Trust Mid Value Trust Science & Technology Trust Small Company Value Trust

Portfolio Managers
Paul Greene II
David R. Giroux, CFA
John D. Linehan, CFA
Ziad Bakri, MD, CFA
Vincent DeAugustino, CFA
Anthony Wang
J. David Wagner, CFA

- *Ziad Bakri, MD, CFA*. Vice President; joined T. Rowe Price in 2011.
- *Vincent DeAugustino, CFA*. Vice President; originally joined T. Rowe Price in 2006 and returned to T. Rowe Price in 2015.
- *David R. Giroux, CFA*. Vice President; joined T. Rowe Price in 1998.
- *Paul Greene II*. Vice President; joined T. Rowe Price in 2006.
- *John D. Linehan, CFA*. Vice President; joined T. Rowe Price in 1998.
- *J. David Wagner, CFA*. Vice President; joined T. Rowe Price in 2000.

- *Anthony Wang*. Vice President; joined T. Rowe Price in 2017.

Wellington Management Company LLP (“Wellington Management”)

Wellington Management is a Delaware limited liability partnership with principal offices at 280 Congress Street, Boston, Massachusetts 02210.

Wellington Management is a professional investment counseling firm which provides investment services to investment companies, employee benefit plans, endowments, foundations and other institutions. Wellington Management and its predecessor organizations have provided investment advisory services for over 80 years. Wellington Management is owned by the partners of Wellington Management Group LLP, a Massachusetts limited liability partnership. As of December 31, 2023, Wellington Management had total assets under management of approximately \$1.2 trillion.

Wellington Management has identified the following persons as jointly and primarily responsible for the day-to-day management of the funds’ portfolios as set forth below. These managers are employed by Wellington Management.

Funds

Investment Quality Bond Trust

Portfolio Managers

Robert D. Burn, CFA
Campe Goodman, CFA
Joseph F. Marvan, CFA

Mid Cap Growth Trust

Mario E. Abularach, CFA
Stephen Mortimer

Opportunistic Fixed Income Trust

Brian M. Garvey
Brij S. Khurana

Real Estate Securities Trust

Bradford D. Stoesser

Small Cap Stock Trust

Ranjit Ramachandran, CFA

Small Cap Value Trust

Edmond C. Griffin, CFA
Shaun F. Pedersen
Danielle S. Williams, CFA

- *Mario E. Abularach, CFA*. Senior Managing Director and Equity Research Analyst of Wellington Management; joined the firm as an investment professional in 2001.
- *Robert D. Burn, CFA*. Senior Managing Director and Fixed Income Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2007.
- *Brian M. Garvey*. Senior Managing Director and Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2007.
- *Campe Goodman, CFA*. Senior Managing Director and Fixed Income Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2000.
- *Edmond C. Griffin, CFA*. Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2008.
- *Brij S. Khurana*. Senior Managing Director and Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2016.
- *Joseph F. Marvan, CFA*. Senior Managing Director and Fixed Income Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2003.
- *Stephen Mortimer*. Senior Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2001.
- *Shaun F. Pedersen*. Senior Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2004.
- *Ranjit Ramachandran, CFA*. Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2014.
- *Bradford D. Stoesser*. Senior Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2005.
- *Danielle S. Williams, CFA*. Managing Director and Equity Portfolio Manager of Wellington Management; joined the firm as an investment professional in 2014.

Western Asset Management Company, LLC (“WAMCO”)

Western Asset Management Company Limited serves as sub-subadvisor

WAMCO, 385 E. Colorado Boulevard, Pasadena, California 91101, is one of the world’s leading investment management firms. Its primary business is managing fixed-income portfolios, an activity the Firm has pursued since 1971. From offices in Pasadena, New York, Sao Paulo, London, Zürich, Singapore, Hong Kong, Tokyo and Melbourne, WAMCO’s 746 employees perform investment services for a wide variety of global clients. The Firm’s clients include charitable, corporate, health care, insurance, mutual fund, public and union organizations, and client portfolios range across an equally

wide variety of mandates, from money markets to emerging markets. WAMCO's client base totals 532, representing 33 countries and 1,415 accounts. As of December 31, 2023, WAMCO had total assets under management of approximately 388.9 billion.

WAMCO has identified the following persons as jointly and primarily responsible for the day-to-day management of the fund's portfolio as set forth below. These managers are employed by WAMCO.

Fund
High Yield Trust

Portfolio Manager
Michael C. Buchanan
Walter E. Kilcullen
Ryan Kohan

- *Michael C. Buchanan*. Deputy Chief Investment Officer; joined WAMCO in 2005.
- *Walter E. Kilcullen*. Head of US High Yield; joined WAMCO in 2002.
- *Ryan Kohan*. Head of Bank Loans; joined WAMCO in 2019.

SHARE CLASSES AND RULE 12B-1 PLANS

Share classes

The funds may issue four classes of shares: Series I, Series II, Series III and NAV shares (not all funds issue all share classes). Each share class is the same except for differences in the allocation of fund expenses and voting rights as described below.

The expenses of each fund are generally borne by its Series I, Series II, Series III and NAV shares (as applicable) based on the net assets of the fund attributable to shares of each class. "Class expenses," however, are allocated to each class. "Class expenses" include Rule 12b-1 fees (if any) paid by a share class and other expenses determined by the Advisor to be properly allocable to a particular class. The Advisor will make such allocations in a manner and using such methodology as it determines to be reasonably appropriate, subject to ratification or approval by the Board. The kinds of expenses that the Advisor may allocate to a particular class include the following: (i) printing and postage expenses related to preparing and distributing to the shareholders of a specific class (or owners of contracts funded by shares of such class) materials such as shareholder reports, prospectuses and proxies; (ii) professional fees relating solely to such class; (iii) Trustees' fees, including independent counsel fees, relating specifically to one class; and (iv) expenses associated with meetings of shareholders of a particular class.

All shares of each fund have equal voting rights and are voted in the aggregate, and not by class, except that shares of each class have exclusive voting rights on any matter submitted to shareholders that relates solely to the arrangement of that class and have separate voting rights when any matter is submitted to shareholders in which the interests of one class differ from the interests of any other class or when voting by class is otherwise required by law.

Rule 12b-1 plans

Rule 12b-1 fees will be paid to JHVIT's Distributor, John Hancock Distributors, LLC, or any successor thereto (the "Distributor").

To the extent consistent with applicable laws, regulations and rules, the Distributor may use Rule 12b-1 fees:

- (i) for any expenses relating to the distribution of the shares of the class,
- (ii) for any expenses relating to shareholder or administrative services for holders of the shares of the class (or owners of contracts funded in insurance company separate accounts that invest in the shares of the class) and
- (iii) for the payment of "service fees" that come within Rule 2341 of the Conduct Rules of the Financial Industry Regulatory Authority.

Without limiting the foregoing, the Distributor may pay all or part of the Rule 12b-1 fees from a fund to one or more affiliated and unaffiliated insurance companies that have issued variable insurance contracts for which the fund serves as an investment vehicle as compensation for providing some or all of the types of services described in the preceding sentence; this provision, however, does not obligate the Distributor to make any payments of Rule 12b-1 fees and does not limit the use that the Distributor may make of the Rule 12b-1 fees it receives.

The annual Rule 12b-1 fee rate currently accrued by each fund is set forth in the expense table of each fund. Subject to the approval of the Board, each fund may under the 12b-1 Plans charge Rule 12b-1 fees up to the following maximum annual rates:

Series I shares

an annual rate of up to 0.15%* of the net assets of the Series I shares

*0.60% in the case of American Asset Allocation Trust, American Global Growth Trust, American Growth-Income Trust, American Growth Trust and American International Trust.

Series II shares

an annual rate of up to 0.35%* of the net assets of the Series II shares

*0.75% in the case of American Asset Allocation Trust, American Global Growth Trust, American Growth-Income Trust, American Growth Trust and American International Trust.

Series III shares

an annual rate of up to 0.25% of the net assets of the Series III shares

Rule 12b-1 fees are paid out of a fund's assets on an ongoing basis. Therefore, these fees will increase the cost of an investment in a fund and may, over time, be greater than other types of sales charges.

GENERAL INFORMATION

Purchase and redemption of shares

Shares of each fund are offered continuously, without sales charge, and are sold and redeemed each business day at a price equal to their net asset value (NAV) determined for that business day as set forth under "Valuation of shares" in this prospectus. A business day is any day that the New York Stock Exchange is open for business. Depending upon the NAV at that time, the amount paid upon redemption may be more or less than the cost of the shares redeemed. Payment for shares redeemed will generally be made within seven days after receipt of a proper notice of redemption. However, JHVIT may suspend the right of redemption or postpone the date of payment beyond seven days during any period when:

- trading on the New York Stock Exchange (NYSE) is restricted, as determined by the SEC, or the NYSE is closed for other than weekends and holidays;
- an emergency exists, as determined by the SEC, as a result of which disposal by JHVIT of securities owned by it is not reasonably practicable or it is not reasonably practicable for JHVIT fairly to determine the value of its net assets; or
- the SEC by order so permits for the protection of security holders of JHVIT.

Shares of the funds are not sold directly to the public but generally may be sold only to insurance companies and their separate accounts as the underlying investment options for variable annuity and variable life insurance contracts issued by such companies, to certain entities affiliated with the insurance companies, to those funds of JHVIT that operate as funds of funds and invest in other funds (Underlying Funds) and to certain qualified retirement plans (qualified plans).

Due to differences in tax treatments and other considerations, the interests of holders of variable annuity and variable life insurance contracts, and the interests of holders of variable contracts and qualified plan investors, that participate in JHVIT may conflict. The Board of Trustees of JHVIT (the "Board" or "Trustees") will monitor events in order to identify the existence of any material irreconcilable conflicts and determine what action, if any, should be taken in response to any such conflict.

Money Market Trust Only

If the Board of Trustees, including a majority of the Independent Trustees, determines that the deviation between the fund's amortized cost price per share and the market-based NAV per share may result in material dilution or other unfair results, the Board of Trustees, subject to certain conditions, may suspend redemptions and payments in order to facilitate the permanent termination of the fund in an orderly manner. If this were to occur, it would likely result in a delay in your receipt of your redemption proceeds.

Valuation of shares

The net asset value (NAV) for each class of shares of the funds is normally determined once daily as of the close of regular trading on the New York Stock Exchange (NYSE) (typically 4:00 P.M., Eastern time, on each business day that the NYSE is open). In case of emergency or other disruption resulting in the NYSE not opening for trading or the NYSE closing at a time other than the regularly scheduled close, the NAV may be determined as of the regularly scheduled close of the NYSE pursuant to the advisor's Valuation Policies and Procedures. The time at which shares and transactions are priced and until which orders are accepted may vary to the extent permitted by the Securities and Exchange Commission and applicable regulations. On holidays or other days when the NYSE is closed, the NAV is not calculated and the funds do not transact purchase or redemption requests. Trading of securities that are primarily listed on foreign exchanges may take place on weekends and U.S. business holidays on which the funds' NAV is not calculated. Consequently, each fund's portfolio securities may trade and the NAV of the funds' shares may be significantly affected on days when a shareholder will not be able to purchase or redeem shares of each fund.

Each class of shares of each fund (except Money Market Trust) has its own NAV, which is computed by dividing the total assets, minus liabilities, allocated to each share class by the number of fund shares outstanding for that class.

Money Market Trust Only

The net asset value (NAV) for each class of shares of the fund is normally determined each business day at the close of regular trading on the New York Stock Exchange (NYSE) (typically 4:00 P.M., Eastern time) on each business day that the NYSE is open. In case of emergency or other disruption resulting in the NYSE not opening for trading or the NYSE closing at a time other than the regularly scheduled close, the NAV may be determined as of

the regularly scheduled close of the NYSE pursuant to the advisor's Valuation Policies and Procedures. The time at which shares and transactions are priced and until which orders are accepted may vary to the extent permitted by the Securities and Exchange Commission and applicable regulations. On holidays or other days when the NYSE is closed, the NAV is not calculated and the fund does not transact purchase or redemption requests.

To help the fund maintain its \$1 constant share price, portfolio investments are valued at cost, and any discount or premium is amortized to maturity. To ensure that such amortized cost valuations are representative of the investments' fair market value, the fund also calculates a market-based NAV daily. If the fund's board determines that the deviation between the fund's amortized cost NAV and its market-based NAV would cause a material dilution or other unfair results to shareholders, the board will cause the fund to take appropriate remedial action, which may include redeeming shares in kind, selling portfolio securities, or reducing the number of outstanding fund shares. See "Net Asset Value" in the SAI for more information. The current NAV of the fund is available on our website at <https://www.johnhancock.com/life-insurance/money-market-trust-filings.html>.

Valuation of securities

The Board has designated the funds' advisor as the valuation designee to perform fair value functions for each fund in accordance with the advisor's valuation policies and procedures. As valuation designee, the advisor will determine the fair value, in good faith, of securities and other assets held by each fund for which market quotations are not readily available and, among other things, will assess and manage material risks associated with fair value determinations, select, apply and test fair value methodologies, and oversee and evaluate pricing services and other valuation agents used in valuing a fund's investments. The advisor is subject to Board oversight and reports to the Board information regarding the fair valuation process and related material matters. The advisor carries out its responsibilities as valuation designee through its Pricing Committee.

Portfolio securities are valued by various methods that are generally described below. Portfolio securities also may be fair valued by the advisor's Pricing Committee in certain instances pursuant to procedures established by the advisor and adopted by the Board of Trustees. Equity securities are generally valued at the last sale price or, for certain markets, the official closing price as of the close of the relevant exchange. Securities not traded on a particular day are valued using last available bid prices. A security that is listed or traded on more than one exchange is typically valued at the price on the exchange where the security was acquired or most likely will be sold. In certain instances, the Pricing Committee may determine to value equity securities using prices obtained from another exchange or market if trading on the exchange or market on which prices are typically obtained did not open for trading as scheduled, or if trading closed earlier than scheduled, and trading occurred as normal on another exchange or market. Equity securities traded principally in foreign markets are typically valued using the last sale price or official closing price in the relevant exchange or market, as adjusted by an independent pricing vendor to reflect fair value as of the close of the NYSE. On any day a foreign market is closed and the NYSE is open, any foreign securities will typically be valued using the last price or official closing price obtained from the relevant exchange on the prior business day adjusted based on information provided by an independent pricing vendor to reflect fair value as of the close of the NYSE. Debt obligations are typically valued based on evaluated prices provided by an independent pricing vendor. The value of securities denominated in foreign currencies is converted into U.S. dollars at the exchange rate supplied by an independent pricing vendor. Forward foreign currency contracts are valued at the prevailing forward rates which are based on foreign currency exchange spot rates and forward points supplied by an independent pricing vendor. Exchange-traded options are valued at the mid-price of the last quoted bid and ask prices. Futures contracts whose settlement prices are determined as of the close of the NYSE are typically valued based on the settlement price, while other futures contracts are typically valued at the last traded price on the exchange on which they trade as of the close of the NYSE. Foreign equity index futures that trade in the electronic trading market subsequent to the close of regular trading may be valued at the last traded price in the electronic trading market as of the close of the NYSE, or may be fair valued based on fair value adjustment factors provided by an independent pricing vendor in order to adjust for events that may occur between the close of foreign exchanges or markets and the close of the NYSE. Swaps and unlisted options are generally valued using evaluated prices obtained from an independent pricing vendor. Shares of other open-end investment companies that are not exchange-traded funds (underlying funds) are valued based on the NAVs of such underlying funds.

Pricing vendors may use matrix pricing or valuation models that utilize certain inputs and assumptions to derive values, including transaction data, broker-dealer quotations, credit quality information, general market conditions, news, and other factors and assumptions. The fund may receive different prices when it sells odd-lot positions than it would receive for sales of institutional round lot positions. Pricing vendors generally value securities assuming orderly transactions of institutional round lot sizes, but a fund may hold or transact in such securities in smaller, odd lot sizes.

The Pricing Committee engages in oversight activities with respect to pricing vendors, which includes, among other things, monitoring significant or unusual price fluctuations above predetermined tolerance levels from the prior day, back-testing of pricing vendor prices against actual trades, conducting periodic due diligence meetings and reviews, and periodically reviewing the inputs, assumptions and methodologies used by these vendors. Nevertheless, market quotations, official closing prices, or information furnished by a pricing vendor could be inaccurate, which could lead to a security being valued incorrectly.

If market quotations, official closing prices, or information furnished by a pricing vendor are not readily available or are otherwise deemed unreliable or not representative of the fair value of such security because of market- or issuer-specific events, a security will be valued at its fair value as determined in good faith by the Board's valuation designee, the advisor. In certain instances, therefore, the Pricing Committee may determine that a reported valuation does not reflect fair value, based on additional information available or other factors, and may accordingly determine in good faith the fair value of the assets, which may differ from the reported valuation.

Fair value pricing of securities is intended to help ensure that a fund's NAV reflects the fair market value of the fund's portfolio securities as of the close of regular trading on the NYSE (as opposed to a value that no longer reflects market value as of such close), thus limiting the opportunity for aggressive traders or market timers to purchase shares of the fund at deflated prices reflecting stale security valuations and promptly sell such shares at a gain, thereby diluting the interests of long-term shareholders. However, a security's valuation may differ depending on the method used for determining value, and no assurance can be given that fair value pricing of securities will successfully eliminate all potential opportunities for such trading gains.

The use of fair value pricing has the effect of valuing a security based upon the price the fund might reasonably expect to receive if it sold that security in an orderly transaction between market participants, but does not guarantee that the security can be sold at the fair value price. Further, because of the inherent uncertainty and subjective nature of fair valuation, a fair valuation price may differ significantly from the value that would have been used had a readily available market price for the investment existed and these differences could be material.

Regarding the fund's investment in an underlying fund that is not an ETF, which (as noted above) is valued at such underlying fund's NAV, the prospectus for such underlying fund explains the circumstances and effects of fair value pricing for that underlying fund.

Money Market Trust Only

Money Market Trust operates as a government money market fund, as defined in Rule 2a-7 under the Investment Company Act of 1940, as amended, and, accordingly, uses the amortized cost valuation method, which approximates market value, to value its portfolio securities. The amortized cost method involves valuing a security at its cost on the date of purchase and thereafter assuming a constant amortization to maturity of the difference between the principal amount due at maturity and the cost of the security to the fund.

The Board has established procedures designed to stabilize, to the extent reasonably possible, the fund's price per share as computed for the purpose of sales and redemptions at \$1.00. The procedures direct the Advisor to establish procedures that will allow for the monitoring of the propriety of the continued use of amortized cost valuation to maintain a constant NAV of \$1.00 for the fund. The procedures also direct the Advisor to determine NAV based upon available market quotations ("Shadow Pricing"), pursuant to which daily market values for securities held by the fund will be obtained and compared to such securities' amortized cost values to ensure that the amortized cost values are representative of fair market value pursuant to the funds' procedures. The fund shall value daily: (a) all portfolio instruments for which market quotations are readily available at market; and (b) all portfolio instruments for which market quotations are not readily available or are not obtainable from a pricing service, at their fair value as determined in good faith by the Board's valuation designee, the Advisor. If the fair value of a security needs to be determined, the Advisor's Pricing Committee will provide determinations, in accordance with procedures and methods established by the Advisor and adopted by the Board, of the fair value of securities held by the fund.

In determining market quotations that the fund may use for purposes of Shadow Pricing, pricing vendors may use matrix pricing or models that utilize certain inputs and assumptions to derive market quotations, including transaction data, credit quality information, general market conditions, news, and other factors and assumptions. Special Shadow Pricing considerations may apply with respect to the fund's "odd-lot" positions, as the fund may receive different prices when it sells such positions than it would receive for sales of institutional round lot positions. Pricing vendors generally determine market quotations for securities assuming orderly transactions of institutional round lot sizes, but the fund may transact in such securities in smaller, odd lot sizes.

The Advisor's Pricing Committee engages in oversight activities with respect to the fund's pricing vendors, which includes, among other things, monitoring significant or unusual price fluctuations above predetermined tolerance levels from the prior day, back-testing of pricing vendor prices against actual trades, conducting periodic due diligence meetings and reviews, and periodically reviewing the inputs, assumptions and methodologies used by these vendors. Nevertheless, market quotations, official closing prices, or information furnished by a pricing vendor could be inaccurate, which could lead to a security being valued incorrectly.

In the event that the deviation from the amortized cost exceeds 0.30% of \$1, or \$0.003, per share in NAV, the Advisor shall promptly call a special meeting of the Board to determine what, if any, action should be initiated. Where the Trustees believe the extent of any deviation from the fund's amortized cost NAV may result in material dilution or other unfair results to investors or existing shareholders, they shall take the action they deem appropriate to eliminate or reduce to the extent reasonably practical such dilution or unfair results. The actions that may be taken by the Board include, but are not limited to:

- redeeming shares in kind;
- selling portfolio instruments prior to maturity to realize capital gains or losses or to shorten the average portfolio maturity of the fund;
- withholding or reducing dividends;
- utilizing a NAV based on available market quotations; or
- investing all cash in instruments with a maturity on the next business day.

In certain extraordinary circumstances, the Board may suspend redemptions in the fund and approve the liquidation of the fund if the Board determines that the deviation between the fund's amortized cost price per share and its market-based NAV may result in material dilution or other unfair results to

investors or existing shareholders. The Board may also suspend redemptions in the fund and approve the liquidation of the fund if the fund's weekly liquid assets were to fall below 10% and the Board determines it would not be in the best interests of the fund to continue operating.

If the fund has a negative gross yield as a result of negative interest rates the fund may, with Board approval, reduce the number of shares outstanding by redeeming proportionately from shareholders, such number of full and fractional shares as is necessary to maintain the NAV at \$1.00 for the fund. Such reduction in the number of outstanding fund shares would not reduce the value of a shareholder's holdings in the fund, and as a result, no monetary compensation would be paid for the redemption.

Since a dividend is declared to shareholders each time net asset value is determined, the NAV per share of each class of the fund will normally remain constant at \$1.00. There is no assurance that the fund can maintain the \$1.00 NAV. Monthly, any increase in the value of a shareholder's investment in either class from dividends is reflected as an increase in the number of shares of such class in the shareholder's account or is distributed as cash if a shareholder has so elected.

It is expected that the fund's net income will be positive each time it is determined. However, if because of a sudden rise in interest rates or for any other reason the net income of the fund determined at any time is a negative amount, the fund will offset the negative amount against income accrued during the month for each shareholder account. If at the time of payment of a distribution such negative amount exceeds a shareholder's portion of accrued income, the fund may reduce the number of its outstanding shares by treating the shareholder as having contributed to the capital of the fund that number of full or fractional shares which represents the amount of excess. By investing in any class of shares of the fund, shareholders are deemed to have agreed to make such a contribution. This procedure permits the fund to maintain its NAV at \$1.00.

If, in the view of the Trustees, it is inadvisable to continue the practice of maintaining the fund's NAV at \$1.00, the Trustees reserve the right to alter the procedures for determining NAV. The fund will notify shareholders of any such alteration.

Dividends

JHVIT intends to declare as dividends substantially all of the net investment income, if any, of each fund. Dividends from the net investment income and the net capital gain, if any, for each fund will be declared not less frequently than annually and reinvested in additional full and fractional shares of that fund or paid in cash.

Money Market Trust Only

Money Market Trust seeks to maintain a constant per share NAV of \$1.00. Dividends from net investment income for this fund will generally be declared and reinvested, or paid in cash, as to a share class daily. However, if class expenses exceed class income on any given day, as may occur from time to time, the fund may determine not to pay a dividend on the class on that day and to resume paying dividends on that class only when, on a future date, the accumulated net investment income of the class is positive. The accumulated net investment income for a class on any day is equal to the accumulated income attributable to that class less the accumulated expenses attributable to that class since the last payment of a dividend on that class. When the fund resumes paying a dividend on a class, the amount of the initial dividend will be the accumulated net investment income for the class on the date of payment. As a result of this policy, the fund: (1) on any given day, may pay a dividend on all of its classes, on none of its classes or on some but not all of its classes; (2) may not pay a dividend on one or more classes for one or more indeterminate periods which may be as short as a day or quite lengthy; and (3) may, during a period in which it does not pay a dividend on a class, have days on which the net investment income for that class is positive but is not paid as a dividend because the accumulated net investment income for the class continues to be negative. In addition, a shareholder who purchases shares of a class with a negative accumulated net investment income could hold those shares during a period of positive net investment income and never receive a dividend unless and until that accumulated positive net investment income exceeded the negative accumulated net investment income at the time of purchase.

Disruptive short-term trading

None of the funds are designed for short-term trading (frequent purchases and redemption of shares) or market timing activities, which may increase portfolio transaction costs, disrupt management of a fund (affecting a subadvisor's ability to effectively manage a fund in accordance with its investment objective and policies), dilute the interest in a fund held for long-term investment or adversely affect a fund's performance (Disruptive Short-Term Trading).

The Board has adopted procedures to deter Disruptive Short-Term Trading and JHVIT seeks to deter and prevent such trading through several methods:

First, to the extent that there is a delay between a change in the value of a fund's holdings, and the time when that change is reflected in the NAV of the fund's shares, the fund is exposed to the risk that investors may seek to exploit this delay by purchasing or redeeming shares at NAVs that do not reflect appropriate fair value prices. JHVIT seeks to deter and prevent this activity, sometimes referred to as "market timing" or "stale price arbitrage," by the appropriate use of "fair value" pricing of the funds' portfolio securities. See "Purchases and Redemption of Shares" above for further information on fair value pricing.

Second, management of JHVIT will monitor purchases and redemptions of JHVIT shares either directly or through procedures adopted by the affiliated insurance companies that use JHVIT as their underlying investment vehicle. If management of JHVIT becomes aware of short-term trading that it believes, in its sole discretion, is having or may potentially have the effect of materially increasing portfolio transaction costs, significantly disrupting portfolio management or significantly diluting the interest in a fund held for long-term investment i.e. Disruptive Short-Term Trading, JHVIT may impose restrictions on such trading as described below.

Pursuant to Rule 22c-2 under the Investment Company Act of 1940, as amended, JHVIT and each insurance company that uses JHVIT as an underlying investment vehicle have entered into information sharing agreements under which the insurance companies are obligated to: (i) adopt, and enforce during the term of the agreement, a short-term trading policy that the insurance company reasonably believes is designed to deter disruptive short-term trading; (ii) furnish JHVIT, upon its request, with information regarding contract holder trading activities in shares of JHVIT; and (iii) enforce its short term trading policy with respect to contract holders identified by JHVIT as having engaged in Disruptive Short-Term Trading. Further, when requested information regarding contract holder trading activities is in the possession of a financial intermediary rather than the insurance company, the agreement obligates the insurance company to undertake to obtain such information from the financial intermediary or, if directed by JHVIT, to cease to accept trading instructions from the financial intermediary for the contract holder unless such instructions are sent to the financial intermediary by regular U.S. mail.

Investors in JHVIT should note that insurance companies have legal and technological limitations on their ability to impose restrictions on Disruptive Short-Term Trading that such limitations and ability may vary among insurance companies and by insurance product. Investors should also note that insurance company separate accounts and omnibus or other nominee accounts, in which purchases and sales of fund shares by multiple investors are aggregated for presentation to a fund on a net basis, inherently make it more difficult for JHVIT to identify short-term transactions in a fund and the investor who is effecting the transaction. Therefore, no assurance can be given that JHVIT will be able to impose uniform restrictions on all insurance companies and all insurance products or that it will be able to successfully impose restrictions on all Disruptive Short-Term Trading. If JHVIT is unsuccessful in restricting Disruptive Short-Term Trading, the affected funds may incur higher brokerage costs, may maintain higher cash levels (limiting their ability to achieve their investment objective and affecting the subadvisor's ability to effectively manage them) and may be exposed to dilution with respect to interests held for long-term investment.

Market timers may target funds with the following types of investments:

1. Funds with significant investments in foreign securities traded on markets that close before the fund determines its NAV;
2. Funds with significant investments in high yield securities that are infrequently traded; and
3. Funds with significant investments in small cap securities.

Market timers may also target funds with other types of investments for frequent trading of shares.

Money Market Trust Only

The fund does not knowingly accept shareholders who engage in market timing or other types of excessive short-term trading. Short-term trading into and out of the fund can disrupt portfolio investment strategies and may increase fund expenses for all shareholders, including long-term shareholders who do not generate these costs. However, money market funds are typically utilized by investors for short-term investments. Investors in money market funds value the ability to add and withdraw their funds quickly and without restrictions.

Moreover, because Government money market funds seek to maintain a \$1.00 per share price and typically do not fluctuate in market value, they generally are not the targets of abusive trading practices. For these reasons, the fund's Board of Trustees has not adopted policies and procedures with respect to frequent purchases and redemptions of the fund's shares, and the fund does not impose redemption fees or minimum holding periods for its investors. However, the fund's management will seek to prevent an investor from utilizing the fund to facilitate frequent purchases and redemptions of shares in other JHVIT funds that are not money market funds. The JHVIT funds have adopted policies and procedures with respect to excessive trading and potential market timing activity for the non-money market JHVIT funds (as described above), and a contract holder will be prevented from purchasing additional shares or making further exchanges if the fund's management determines that a contract holder has engaged in timing activities in contravention of a non-money market JHVIT fund's policies.

Policy regarding disclosure of fund portfolio holdings

A description of the funds' policies and procedures regarding disclosure of portfolio holdings can be found in the SAI.

FINANCIAL HIGHLIGHTS

The financial highlights table below for each fund is intended to help investors understand the financial performance of the fund for the past five years. Certain information reflects financial results for a single share of a fund. The total returns presented in the table represent the rate that an investor would have earned (or lost) on an investment in a particular fund (assuming reinvestment of all dividends and distributions). The total return information shown in the Financial Highlights tables does not reflect the fees and expenses of any separate account that may use John Hancock Variable Insurance Trust (JHVIT) as its underlying investment option or of any variable insurance contract that may be funded in such a separate account. If these fees and expenses were included, the total return figures for all periods shown would be reduced.

The financial statements of JHVIT as of December 31, 2023, have been audited by PricewaterhouseCoopers LLP, independent registered public accounting firm. The report of PricewaterhouseCoopers LLP, along with JHVIT's financial statements, as they appear in JHVIT's annual report for the fiscal period ended December 31, 2023, has been incorporated by reference into the SAI. Copies of JHVIT's annual report are available upon request.

500 Index Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	40.70	0.67	9.72	10.39	(0.58)	(0.64)	(1.22)	49.87	25.90	0.55	0.30	1.48	5,787	2
12-31-2022	52.44	0.59	(10.22)	(9.63)	(0.56)	(1.55)	(2.11)	40.70	(18.37)	0.55	0.30	1.31	4,441	2
12-31-2021	43.08	0.52	11.55	12.07	(0.67)	(2.04)	(2.71)	52.44	28.29	0.54	0.30	1.06	5,400	2
12-31-2020	37.84	0.65	6.05	6.70	(0.71)	(0.75)	(1.46)	43.08	18.11	0.55	0.30	1.73	4,313	4
12-31-2019	29.81	0.64	8.52	9.16	(0.60)	(0.53)	(1.13)	37.84	31.05	0.55	0.30	1.84	3,797	3 ³
Series II														
12-31-2023	40.72	0.58	9.72	10.30	(0.50)	(0.64)	(1.14)	49.88	25.64	0.75	0.50	1.28	82	2
12-31-2022	52.45	0.50	(10.21)	(9.71)	(0.47)	(1.55)	(2.02)	40.72	(18.51)	0.75	0.50	1.11	70	2
12-31-2021	43.09	0.42	11.56	11.98	(0.58)	(2.04)	(2.62)	52.45	28.04	0.74	0.50	0.86	96	2
12-31-2020	37.87	0.58	6.02	6.60	(0.63)	(0.75)	(1.38)	43.09	17.83	0.75	0.50	1.53	79	4
12-31-2019	29.83	0.57	8.53	9.10	(0.53)	(0.53)	(1.06)	37.87	30.83	0.75	0.50	1.64	78	3 ³
Series NAV														
12-31-2023	40.70	0.70	9.71	10.41	(0.60)	(0.64)	(1.24)	49.87	25.95	0.50	0.25	1.53	2,764	2
12-31-2022	52.43	0.61	(10.20)	(9.59)	(0.59)	(1.55)	(2.14)	40.70	(18.31)	0.50	0.25	1.36	2,201	2
12-31-2021	43.07	0.54	11.55	12.09	(0.69)	(2.04)	(2.73)	52.43	28.36	0.49	0.25	1.11	2,944	2
12-31-2020	37.84	0.67	6.03	6.70	(0.72)	(0.75)	(1.47)	43.07	18.14	0.50	0.25	1.78	2,433	4
12-31-2019	29.80	0.66	8.52	9.18	(0.61)	(0.53)	(1.14)	37.84	31.16	0.50	0.25	1.90	2,229	3 ³

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Excludes in-kind transactions.

Active Bond Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	8.06	0.30	0.19	0.49	(0.29)	—	(0.29)	8.26	6.43	0.71	0.71	3.68	27	85	
12-31-2022	9.79	0.27	(1.64)	(1.37)	(0.30)	(0.06)	(0.36)	8.06	(13.85)	0.71	0.70	3.05	26	91	
12-31-2021	10.34	0.24	(0.30)	(0.06)	(0.33)	(0.16)	(0.49)	9.79	(0.57)	0.70	0.69	2.35	34	95	
12-31-2020	9.79	0.26	0.60	0.86	(0.31)	—	(0.31)	10.34	8.79	0.70	0.70	2.56	36	98	
12-31-2019	9.21	0.29	0.56	0.85	(0.27)	—	(0.27)	9.79	9.25	0.70	0.70	2.96	37	88	
Series II															
12-31-2023	8.08	0.29	0.19	0.48	(0.28)	—	(0.28)	8.28	6.21	0.91	0.91	3.48	105	85	
12-31-2022	9.81	0.25	(1.64)	(1.39)	(0.28)	(0.06)	(0.34)	8.08	(14.02)	0.91	0.90	2.83	103	91	
12-31-2021	10.36	0.22	(0.30)	(0.08)	(0.31)	(0.16)	(0.47)	9.81	(0.77)	0.90	0.89	2.15	144	95	
12-31-2020	9.81	0.24	0.60	0.84	(0.29)	—	(0.29)	10.36	8.57	0.90	0.90	2.36	156	98	
12-31-2019	9.23	0.27	0.56	0.83	(0.25)	—	(0.25)	9.81	9.03	0.90	0.90	2.76	145	88	
Series NAV															
12-31-2023	8.07	0.31	0.19	0.50	(0.30)	—	(0.30)	8.27	6.48	0.66	0.66	3.73	425	85	
12-31-2022	9.80	0.27	(1.63)	(1.36)	(0.31)	(0.06)	(0.37)	8.07	(13.78)	0.66	0.65	3.10	420	91	
12-31-2021	10.34	0.24	(0.28)	(0.04)	(0.34)	(0.16)	(0.50)	9.80	(0.42)	0.65	0.64	2.40	549	95	
12-31-2020	9.80	0.27	0.58	0.85	(0.31)	—	(0.31)	10.34	8.73	0.65	0.65	2.61	560	98	
12-31-2019	9.22	0.29	0.57	0.86	(0.28)	—	(0.28)	9.80	9.30	0.65	0.65	3.01	542	88	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

American Asset Allocation Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	9.59	0.18 ³	1.00	1.18	(0.17)	(1.43)	(1.60)	9.17	13.90	0.63 ⁴	0.63 ⁴	1.83 ³	343	6						
12-31-2022	13.11	0.17 ³	(2.02)	(1.85)	(0.16)	(1.51)	(1.67)	9.59	(13.76)	0.63 ⁴	0.62 ⁴	1.54 ³	320	9						
12-31-2021	12.26	0.15 ³	1.65	1.80	(0.15)	(0.80)	(0.95)	13.11	14.71	0.63 ⁴	0.62 ⁴	1.16 ³	374	5						
12-31-2020	12.58	0.16 ³	1.22	1.38	(0.16)	(1.54)	(1.70)	12.26	12.02	0.63 ⁴	0.62 ⁴	1.30 ³	334	3						
12-31-2019	11.84	0.19 ³	2.16	2.35	(0.16)	(1.45)	(1.61)	12.58	20.78	0.63 ⁴	0.62 ⁴	1.52 ³	306	7						
Series II																				
12-31-2023	9.60	0.16 ³	1.00	1.16	(0.16)	(1.43)	(1.59)	9.17	13.68	0.78 ⁴	0.72 ⁴	1.67 ³	707	6						
12-31-2022	13.11	0.16 ³	(2.01)	(1.85)	(0.15)	(1.51)	(1.66)	9.60	(13.77)	0.78 ⁴	0.71 ⁴	1.37 ³	710	9						
12-31-2021	12.26	0.13 ³	1.65	1.78	(0.13)	(0.80)	(0.93)	13.11	14.61	0.78 ⁴	0.71 ⁴	0.98 ³	921	5						
12-31-2020	12.58	0.14 ³	1.23	1.37	(0.15)	(1.54)	(1.69)	12.26	11.92	0.78 ⁴	0.71 ⁴	1.15 ³	953	3						
12-31-2019	11.84	0.17 ³	2.17	2.34	(0.15)	(1.45)	(1.60)	12.58	20.67	0.78 ⁴	0.71 ⁴	1.36 ³	967	7						
Series III																				
12-31-2023	9.60	0.21 ³	1.00	1.21	(0.20)	(1.43)	(1.63)	9.18	14.23	0.28 ⁴	0.28 ⁴	2.14 ³	104	6						
12-31-2022	13.12	0.21 ³	(2.02)	(1.81)	(0.20)	(1.51)	(1.71)	9.60	(13.44)	0.28 ⁴	0.27 ⁴	1.82 ³	101	9						
12-31-2021	12.27	0.19 ³	1.65	1.84	(0.19)	(0.80)	(0.99)	13.12	15.07	0.28 ⁴	0.27 ⁴	1.45 ³	128	5						
12-31-2020	12.58	0.20 ³	1.23	1.43	(0.20)	(1.54)	(1.74)	12.27	12.45	0.28 ⁴	0.27 ⁴	1.61 ³	125	3						
12-31-2019	11.84	0.23 ³	2.17	2.40	(0.21)	(1.45)	(1.66)	12.58	21.16	0.28 ⁴	0.27 ⁴	1.81 ³	122	7						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

American Global Growth Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	13.73	0.08 ³	2.66	2.74	(0.07)	(2.13)	(2.20)	14.27	22.12	0.66 ⁴	0.65 ⁴	0.52 ³	52	12
12-31-2022	21.63	0.05 ³	(5.61)	(5.56)	(0.04)	(2.30)	(2.34)	13.73	(25.05)	0.66 ⁴	0.65 ⁴	0.33 ³	41	13
12-31-2021	19.75	(0.01) ³	3.16	3.15	—	(1.27)	(1.27)	21.63	16.00	0.64 ⁴	0.63 ⁴	(0.04) ³	48	8
12-31-2020	16.49	— ^{3,5}	4.76	4.76	(0.01)	(1.49)	(1.50)	19.75	29.96	0.65 ⁴	0.64 ⁴	(0.02) ³	39	6
12-31-2019	13.68	0.12 ³	4.43	4.55	(0.10)	(1.64)	(1.74)	16.49	34.71	0.65 ⁴	0.64 ⁴	0.79 ³	27	9
Series II														
12-31-2023	13.65	0.06 ³	2.65	2.71	(0.06)	(2.13)	(2.19)	14.17	22.02	0.81 ⁴	0.72 ⁴	0.38 ³	117	12
12-31-2022	21.51	0.03 ³	(5.57)	(5.54)	(0.02)	(2.30)	(2.32)	13.65	(25.08)	0.81 ⁴	0.72 ⁴	0.18 ³	112	13
12-31-2021	19.66	(0.03) ³	3.15	3.12	—	(1.27)	(1.27)	21.51	15.92	0.79 ⁴	0.70 ⁴	(0.14) ³	169	8
12-31-2020	16.44	(0.02) ³	4.74	4.72	(0.01)	(1.49)	(1.50)	19.66	29.80	0.80 ⁴	0.71 ⁴	(0.13) ³	172	6
12-31-2019	13.64	0.09 ³	4.44	4.53	(0.09)	(1.64)	(1.73)	16.44	34.66	0.80 ⁴	0.71 ⁴	0.60 ³	161	9
Series III														
12-31-2023	13.79	0.12 ³	2.69	2.81	(0.12)	(2.13)	(2.25)	14.35	22.55	0.31 ⁴	0.30 ⁴	0.82 ³	27	12
12-31-2022	21.71	0.11 ³	(5.64)	(5.53)	(0.09)	(2.30)	(2.39)	13.79	(24.77)	0.31 ⁴	0.30 ⁴	0.64 ³	25	13
12-31-2021	19.75	0.06 ³	3.17	3.23	—	(1.27)	(1.27)	21.71	16.41	0.29 ⁴	0.28 ⁴	0.29 ³	33	8
12-31-2020	16.43	0.05 ³	4.77	4.82	(0.01)	(1.49)	(1.50)	19.75	30.44	0.30 ⁴	0.29 ⁴	0.30 ³	32	6
12-31-2019	13.63	0.16 ³	4.43	4.59	(0.15)	(1.64)	(1.79)	16.43	35.17	0.30 ⁴	0.29 ⁴	1.03 ³	30	9

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

5 Less than \$0.005 per share.

American Growth Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	13.39	— ^{3,4}	4.67	4.67	(0.01)	(2.64)	(2.65)	15.41	37.99	0.64 ⁵	0.63 ⁵	(0.01) ⁴	271	8						
12-31-2022	26.51	— ^{3,4}	(7.86)	(7.86)	—	(5.26) ⁶	(5.26)	13.39	(30.20)	0.63 ⁵	0.62 ⁵	(0.02) ⁴	188	11						
12-31-2021	23.31	(0.04) ⁴	5.05	5.01	—	(1.81) ⁶	(1.81)	26.51	21.55	0.63 ⁵	0.62 ⁵	(0.14) ⁴	265	14						
12-31-2020	17.56	(0.01) ⁴	8.58	8.57	(0.02)	(2.80)	(2.82)	23.31	51.52	0.63 ⁵	0.62 ⁵	(0.06) ⁴	215	4						
12-31-2019	16.55	0.07 ⁴	4.50	4.57	(0.04)	(3.52)	(3.56)	17.56	30.30	0.63 ⁵	0.63 ⁵	0.38 ⁴	148	12						
Series II																				
12-31-2023	13.19	(0.02) ⁴	4.60	4.58	(0.01)	(2.64)	(2.65)	15.12	37.88	0.79 ⁵	0.69 ⁵	(0.10) ⁴	545	8						
12-31-2022	26.22	(0.02) ⁴	(7.76)	(7.78)	(0.01)	(5.24) ⁶	(5.25)	13.19	(30.25)	0.78 ⁵	0.68 ⁵	(0.11) ⁴	481	11						
12-31-2021	23.07	(0.06) ⁴	5.00	4.94	—	(1.79) ⁶	(1.79)	26.22	21.49	0.78 ⁵	0.68 ⁵	(0.23) ⁴	739	14						
12-31-2020	17.41	(0.03) ⁴	8.51	8.48	(0.02)	(2.80)	(2.82)	23.07	51.46	0.78 ⁵	0.68 ⁵	(0.13) ⁴	729	4						
12-31-2019	16.44	0.05 ⁴	4.47	4.52	(0.03)	(3.52)	(3.55)	17.41	30.20	0.78 ⁵	0.69 ⁵	0.28 ⁴	619	12						
Series III																				
12-31-2023	13.29	0.05 ⁴	4.64	4.69	(0.01)	(2.64)	(2.65)	15.33	38.45	0.29 ⁵	0.28 ⁵	0.31 ⁴	86	8						
12-31-2022	26.38	0.06 ⁴	(7.82)	(7.76)	—	(5.33) ⁶	(5.33)	13.29	(29.95)	0.28 ⁵	0.27 ⁵	0.31 ⁴	76	11						
12-31-2021	23.19	0.05 ⁴	5.04	5.09	—	(1.90) ⁶	(1.90)	26.38	22.00	0.28 ⁵	0.27 ⁵	0.19 ⁴	106	14						
12-31-2020	17.43	0.05 ⁴	8.53	8.58	(0.02)	(2.80)	(2.82)	23.19	51.98	0.28 ⁵	0.27 ⁵	0.28 ⁴	103	4						
12-31-2019	16.44	0.12 ⁴	4.49	4.61	(0.10)	(3.52)	(3.62)	17.43	30.80	0.28 ⁵	0.28 ⁵	0.70 ⁴	91	12						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.005 per share.

4 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

5 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

6 Capital gain distributions may vary between classes due to expense differences applied to ordinary income distributions from underlying funds.

American Growth-Income Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	14.21	0.15 ³	3.27	3.42	(0.16)	(1.74)	(1.90)	15.73	25.68	0.64 ⁴	0.63 ⁴	0.97 ³	315	8						
12-31-2022	18.55	0.14 ³	(3.28)	(3.14)	(0.13)	(1.07)	(1.20)	14.21	(16.78)	0.63 ⁴	0.62 ⁴	0.89 ³	268	12						
12-31-2021	15.87	0.13 ³	3.59	3.72	(0.13)	(0.91)	(1.04)	18.55	23.61	0.63 ⁴	0.62 ⁴	0.74 ³	344	3						
12-31-2020	16.38	0.15 ³	1.75	1.90	(0.16)	(2.25)	(2.41)	15.87	13.11	0.63 ⁴	0.62 ⁴	0.97 ³	298	8						
12-31-2019	15.03	0.21 ³	3.45	3.66	(0.17)	(2.14)	(2.31)	16.38	25.70	0.63 ⁴	0.62 ⁴	1.28 ³	288	13						
Series II																				
12-31-2023	14.13	0.13 ³	3.24	3.37	(0.14)	(1.74)	(1.88)	15.62	25.52	0.79 ⁴	0.71 ⁴	0.85 ³	410	8						
12-31-2022	18.45	0.12 ³	(3.25)	(3.13)	(0.12)	(1.07)	(1.19)	14.13	(16.84)	0.78 ⁴	0.70 ⁴	0.78 ³	380	12						
12-31-2021	15.79	0.11 ³	3.58	3.69	(0.12)	(0.91)	(1.03)	18.45	23.51	0.78 ⁴	0.70 ⁴	0.61 ³	531	3						
12-31-2020	16.31	0.14 ³	1.74	1.88	(0.15)	(2.25)	(2.40)	15.79	13.02	0.78 ⁴	0.70 ⁴	0.88 ³	528	8						
12-31-2019	14.97	0.18 ³	3.46	3.64	(0.16)	(2.14)	(2.30)	16.31	25.64	0.78 ⁴	0.70 ⁴	1.13 ³	518	13						
Series III																				
12-31-2023	14.17	0.20 ³	3.27	3.47	(0.21)	(1.74)	(1.95)	15.69	26.14	0.29 ⁴	0.28 ⁴	1.29 ³	175	8						
12-31-2022	18.52	0.20 ³	(3.29)	(3.09)	(0.19)	(1.07)	(1.26)	14.17	(16.56)	0.28 ⁴	0.27 ⁴	1.24 ³	163	12						
12-31-2021	15.83	0.19 ³	3.60	3.79	(0.19)	(0.91)	(1.10)	18.52	24.13	0.28 ⁴	0.27 ⁴	1.05 ³	216	3						
12-31-2020	16.34	0.21 ³	1.74	1.95	(0.21)	(2.25)	(2.46)	15.83	13.47	0.28 ⁴	0.27 ⁴	1.32 ³	208	8						
12-31-2019	14.99	0.26 ³	3.46	3.72	(0.23)	(2.14)	(2.37)	16.34	26.16	0.28 ⁴	0.27 ⁴	1.58 ³	202	13						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

American International Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	15.03	0.15 ³	1.87	2.02	(0.15)	(2.40)	(2.55)	14.50	15.39	0.65 ⁴	0.64 ⁴	0.93 ³	122	7						
12-31-2022	20.56	0.22 ³	(4.63)	(4.41)	(0.22)	(0.90)	(1.12)	15.03	(21.11)	0.64 ⁴	0.63 ⁴	1.32 ³	106	15						
12-31-2021	21.41	0.41 ³	(0.80)	(0.39)	(0.42)	(0.04)	(0.46)	20.56	(1.81)	0.63 ⁴	0.63 ⁴	1.89 ³	145	9						
12-31-2020	19.83	0.06 ³	2.46	2.52	(0.07)	(0.87)	(0.94)	21.41	13.56	0.64 ⁴	0.63 ⁴	0.32 ³	170	10						
12-31-2019	17.67	0.22 ³	3.56	3.78	(0.18)	(1.44)	(1.62)	19.83	22.40	0.64 ⁴	0.63 ⁴	1.12 ³	137	10						
Series II																				
12-31-2023	15.03	0.12 ³	1.87	1.99	(0.12)	(2.40)	(2.52)	14.50	15.23	0.80 ⁴	0.77 ⁴	0.75 ³	213	7						
12-31-2022	20.54	0.20 ³	(4.61)	(4.41)	(0.20)	(0.90)	(1.10)	15.03	(21.16)	0.79 ⁴	0.76 ⁴	1.20 ³	206	15						
12-31-2021	21.39	0.39 ³	(0.81)	(0.42)	(0.39)	(0.04)	(0.43)	20.54	(1.96)	0.78 ⁴	0.76 ⁴	1.80 ³	293	9						
12-31-2020	19.82	0.03 ³	2.46	2.49	(0.05)	(0.87)	(0.92)	21.39	13.40	0.79 ⁴	0.76 ⁴	0.16 ³	317	10						
12-31-2019	17.66	0.17 ³	3.59	3.76	(0.16)	(1.44)	(1.60)	19.82	22.27	0.79 ⁴	0.76 ⁴	0.88 ³	310	10						
Series III																				
12-31-2023	14.97	0.20 ³	1.86	2.06	(0.20)	(2.40)	(2.60)	14.43	15.76	0.30 ⁴	0.29 ⁴	1.24 ³	28	7						
12-31-2022	20.48	0.29 ³	(4.62)	(4.33)	(0.28)	(0.90)	(1.18)	14.97	(20.80)	0.29 ⁴	0.28 ⁴	1.72 ³	27	15						
12-31-2021	21.34	0.50 ³	(0.82)	(0.32)	(0.50)	(0.04)	(0.54)	20.48	(1.50)	0.28 ⁴	0.28 ⁴	2.31 ³	36	9						
12-31-2020	19.75	0.12 ³	2.47	2.59	(0.13)	(0.87)	(1.00)	21.34	13.98	0.29 ⁴	0.28 ⁴	0.64 ³	38	10						
12-31-2019	17.59	0.26 ³	3.59	3.85	(0.25)	(1.44)	(1.69)	19.75	22.89	0.29 ⁴	0.28 ⁴	1.38 ³	37	10						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Blue Chip Growth Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	18.06	(0.04)	8.99	8.95	—	—	—	27.01	49.56	0.83	0.79	(0.19)	304	11						
12-31-2022	40.95	(0.08)	(14.95)	(15.03)	—	(7.86)	(7.86)	18.06	(38.09)	0.83	0.79	(0.28)	227	17						
12-31-2021	40.21	(0.20)	7.02	6.82	—	(6.08)	(6.08)	40.95	16.87	0.82	0.79	(0.46)	402	36						
12-31-2020	34.45	(0.11)	11.57	11.46	—	(5.70)	(5.70)	40.21	34.30	0.83	0.80	(0.28)	383	24						
12-31-2019	30.96	(0.02)	8.82	8.80	—	(5.31)	(5.31)	34.45	29.80	0.84	0.81	(0.04)	325	29						
Series II																				
12-31-2023	16.71	(0.08)	8.31	8.23	—	—	—	24.94	49.25	1.03	0.99	(0.39)	101	11						
12-31-2022	38.84	(0.13)	(14.14)	(14.27)	—	(7.86)	(7.86)	16.71	(38.20)	1.03	0.99	(0.48)	79	17						
12-31-2021	38.48	(0.27)	6.71	6.44	—	(6.08)	(6.08)	38.84	16.63	1.02	0.99	(0.66)	146	36						
12-31-2020	33.22	(0.17)	11.13	10.96	—	(5.70)	(5.70)	38.48	34.06	1.03	1.00	(0.48)	150	24						
12-31-2019	30.07	(0.08)	8.54	8.46	—	(5.31)	(5.31)	33.22	29.53	1.04	1.01	(0.24)	134	29						
Series NAV																				
12-31-2023	18.13	(0.03)	9.02	8.99	—	—	—	27.12	49.59	0.78	0.74	(0.14)	1,382	11						
12-31-2022	41.04	(0.07)	(14.98)	(15.05)	—	(7.86)	(7.86)	18.13	(38.05)	0.78	0.74	(0.23)	1,119	17						
12-31-2021	40.27	(0.18)	7.03	6.85	—	(6.08)	(6.08)	41.04	16.92	0.77	0.74	(0.41)	1,883	36						
12-31-2020	34.47	(0.09)	11.59	11.50	—	(5.70)	(5.70)	40.27	34.40	0.78	0.75	(0.23)	1,823	24						
12-31-2019	30.97	— ³	8.81	8.81	— ³	(5.31)	(5.31)	34.47	29.83	0.79	0.76	0.01	1,708	29						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.005 per share.

Capital Appreciation Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	3.28	(0.01)	1.73	1.72	—	(0.06)	(0.06)	4.94	52.85	0.82	0.81	(0.17)	204	34
12-31-2022	7.48	(0.01)	(2.70)	(2.71)	—	(1.49)	(1.49)	3.28	(37.70)	0.81	0.81	(0.22)	151	31
12-31-2021	7.60	(0.04)	1.26	1.22	—	(1.34)	(1.34)	7.48	15.75	0.79	0.78	(0.50)	272	40
12-31-2020	5.39	(0.02)	2.96	2.94	—	(0.73)	(0.73)	7.60	56.04	0.80	0.79	(0.32)	272	56
12-31-2019	12.09	(0.01)	2.92	2.91	(0.01)	(9.60)	(9.61)	5.39	32.89	0.81	0.81	(0.06)	195	40
Series II														
12-31-2023	2.52	(0.01)	1.32	1.31	—	(0.06)	(0.06)	3.77	52.51	1.02	1.01	(0.37)	61	34
12-31-2022	6.28	(0.02)	(2.25)	(2.27)	—	(1.49)	(1.49)	2.52	(37.88)	1.01	1.01	(0.42)	46	31
12-31-2021	6.57	(0.05)	1.10	1.05	—	(1.34)	(1.34)	6.28	15.64	0.99	0.98	(0.70)	88	40
12-31-2020	4.74	(0.03)	2.59	2.56	—	(0.73)	(0.73)	6.57	55.70	1.00	0.99	(0.52)	89	56
12-31-2019	11.61	(0.02)	2.75	2.73	— ³	(9.60)	(9.60)	4.74	32.65	1.01	1.01	(0.26)	66	40
Series NAV														
12-31-2023	3.33	— ³	1.75	1.75	—	(0.06)	(0.06)	5.02	52.95	0.77	0.76	(0.12)	317	34
12-31-2022	7.55	(0.01)	(2.72)	(2.73)	—	(1.49)	(1.49)	3.33	(37.59)	0.76	0.76	(0.18)	217	31
12-31-2021	7.66	(0.04)	1.27	1.23	—	(1.34)	(1.34)	7.55	15.76	0.74	0.73	(0.45)	436	40
12-31-2020	5.42	(0.02)	2.99	2.97	—	(0.73)	(0.73)	7.66	56.29	0.75	0.74	(0.27)	382	56
12-31-2019	12.11	— ³	2.92	2.92	(0.01)	(9.60)	(9.61)	5.42	32.88	0.76	0.76	(0.01)	282	40

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.005 per share.

Capital Appreciation Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	10.62	0.24	1.56	1.80	(0.20)	(1.20)	(1.40)	11.02	18.18	0.95	0.90	2.10	7	76						
12-31-2022	14.06	0.14	(1.83)	(1.69)	(0.13)	(1.62)	(1.75)	10.62	(11.86)	0.94	0.90	1.14	8	88						
12-31-2021	13.39	0.09	2.31	2.40	(0.11)	(1.62)	(1.73)	14.06	18.13	0.93	0.88	0.63	8	55						
12-31-2020	12.55	0.11	1.98	2.09	(0.15)	(1.10)	(1.25)	13.39	17.40	0.94	0.90	0.85	6	88						
12-31-2019	10.92	0.16	2.44	2.60	(0.17)	(0.80)	(0.97)	12.55	24.31	0.93	0.89	1.33	8	45						
Series II																				
12-31-2023	10.54	0.21	1.56	1.77	(0.18)	(1.20)	(1.38)	10.93	18.01	1.15	1.10	1.90	245	76						
12-31-2022	13.97	0.11	(1.82)	(1.71)	(0.10)	(1.62)	(1.72)	10.54	(12.07)	1.14	1.10	0.93	233	88						
12-31-2021	13.32	0.06	2.29	2.35	(0.08)	(1.62)	(1.70)	13.97	17.85	1.13	1.08	0.43	290	55						
12-31-2020	12.49	0.09	1.96	2.05	(0.12)	(1.10)	(1.22)	13.32	17.19	1.14	1.10	0.68	287	88						
12-31-2019	10.87	0.14	2.42	2.56	(0.14)	(0.80)	(0.94)	12.49	24.10	1.13	1.09	1.17	278	45						
Series NAV																				
12-31-2023	10.57	0.24	1.57	1.81	(0.21)	(1.20)	(1.41)	10.97	18.31	0.90	0.85	2.16	215	76						
12-31-2022	14.01	0.15	(1.84)	(1.69)	(0.13)	(1.62)	(1.75)	10.57	(11.87)	0.89	0.85	1.20	179	88						
12-31-2021	13.35	0.10	2.30	2.40	(0.12)	(1.62)	(1.74)	14.01	18.16	0.88	0.83	0.68	198	55						
12-31-2020	12.52	0.12	1.96	2.08	(0.15)	(1.10)	(1.25)	13.35	17.42	0.89	0.85	0.93	156	88						
12-31-2019	10.89	0.17	2.43	2.60	(0.17)	(0.80)	(0.97)	12.52	24.44	0.88	0.84	1.41	127	45						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Core Bond Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	11.04	0.39	0.22	0.61	(0.34)	—	(0.34)	11.31	5.80	0.69	0.68	3.49	63	258	
12-31-2022	13.10	0.23	(2.03)	(1.80)	(0.26)	—	(0.26)	11.04	(13.67)	0.68	0.68	1.95	64	275	
12-31-2021	14.23	0.11	(0.39)	(0.28)	(0.26)	(0.59)	(0.85)	13.10	(1.96)	0.67	0.66	0.82	84	269	
12-31-2020	13.41	0.20	0.95	1.15	(0.33)	—	(0.33)	14.23	8.62	0.67	0.66	1.40	93	354	
12-31-2019	12.68	0.32	0.74	1.06	(0.33)	—	(0.33)	13.41	8.32	0.67	0.66	2.42	92	446	
Series II															
12-31-2023	11.03	0.37	0.22	0.59	(0.32)	—	(0.32)	11.30	5.61	0.89	0.88	3.30	69	258	
12-31-2022	13.08	0.21	(2.02)	(1.81)	(0.24)	—	(0.24)	11.03	(13.81)	0.88	0.88	1.76	64	275	
12-31-2021	14.22	0.09	(0.41)	(0.32)	(0.23)	(0.59)	(0.82)	13.08	(2.23)	0.87	0.86	0.62	79	269	
12-31-2020	13.39	0.17	0.97	1.14	(0.31)	—	(0.31)	14.22	8.50	0.87	0.86	1.20	85	354	
12-31-2019	12.67	0.29	0.73	1.02	(0.30)	—	(0.30)	13.39	8.04	0.87	0.86	2.23	81	446	
Series NAV															
12-31-2023	10.98	0.39	0.23	0.62	(0.35)	—	(0.35)	11.25	5.89	0.64	0.63	3.55	669	258	
12-31-2022	13.03	0.24	(2.02)	(1.78)	(0.27)	—	(0.27)	10.98	(13.62)	0.63	0.63	2.00	658	275	
12-31-2021	14.17	0.12	(0.41)	(0.29)	(0.26)	(0.59)	(0.85)	13.03	(1.99)	0.62	0.61	0.87	836	269	
12-31-2020	13.34	0.20	0.97	1.17	(0.34)	—	(0.34)	14.17	8.80	0.62	0.61	1.46	867	354	
12-31-2019	12.62	0.33	0.72	1.05	(0.33)	—	(0.33)	13.34	8.34	0.62	0.61	2.47	918	446	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Disciplined Value International Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	13.15	0.32	2.28	2.60	(0.28)	—	(0.28)	15.47	19.96	0.87	0.86	2.22	77	81	
12-31-2022	14.38	0.31	(1.05)	(0.74)	(0.49)	—	(0.49)	13.15	(4.77)	0.93	0.92	2.33	67	74	
12-31-2021	13.05	0.46	1.25	1.71	(0.38)	—	(0.38)	14.38	13.06	0.93	0.92	3.21	78	60	
12-31-2020	12.92	0.21	0.17	0.38	(0.25)	—	(0.25)	13.05	3.27	0.94	0.94	1.85	77	190 ³	
12-31-2019	11.84	0.30	1.13	1.43	(0.35)	—	(0.35)	12.92	12.33	0.94	0.94	2.39	83	36	
Series II															
12-31-2023	13.14	0.29	2.27	2.56	(0.25)	—	(0.25)	15.45	19.69	1.07	1.06	2.02	45	81	
12-31-2022	14.37	0.29	(1.06)	(0.77)	(0.46)	—	(0.46)	13.14	(4.98)	1.13	1.12	2.15	41	74	
12-31-2021	13.04	0.43	1.25	1.68	(0.35)	—	(0.35)	14.37	12.86	1.13	1.12	3.02	46	60	
12-31-2020	12.91	0.19	0.17	0.36	(0.23)	—	(0.23)	13.04	3.07	1.14	1.14	1.65	46	190 ³	
12-31-2019	11.83	0.27	1.14	1.41	(0.33)	—	(0.33)	12.91	12.13	1.14	1.14	2.19	50	36	
Series NAV															
12-31-2023	13.03	0.33	2.25	2.58	(0.28)	—	(0.28)	15.33	20.05	0.82	0.81	2.27	161	81	
12-31-2022	14.26	0.31	(1.04)	(0.73)	(0.50)	—	(0.50)	13.03	(4.75)	0.88	0.87	2.35	151	74	
12-31-2021	12.94	0.46	1.24	1.70	(0.38)	—	(0.38)	14.26	13.15	0.88	0.87	3.26	193	60	
12-31-2020	12.82	0.21	0.16	0.37	(0.25)	—	(0.25)	12.94	3.27	0.89	0.89	1.90	178	190 ³	
12-31-2019	11.75	0.30	1.13	1.43	(0.36)	—	(0.36)	12.82	12.41	0.89	0.89	2.41	177	36	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Increase in portfolio turnover rate resulted from repositioning of the portfolio during the period in accordance with investment policy changes approved by the Board of Trustees.

Emerging Markets Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	8.88	0.30	1.03	1.33	(0.15)	—	(0.15)	10.06	15.19	1.09	1.08	3.21	6	12						
12-31-2022	10.50	0.37	(1.63)	(1.26)	(0.36)	—	(0.36)	8.88	(11.67)	1.12	1.11	3.83	6	15						
12-31-2021	9.67	0.26	0.83	1.09	(0.26)	—	(0.26)	10.50	11.18	1.09	1.08	2.48	7	26						
12-31-2020	9.57	0.16	0.14	0.30	(0.20)	—	(0.20)	9.67	3.56	1.21	1.20	1.99	6	26						
12-31-2019	8.93	0.16	0.78	0.94	(0.30)	—	(0.30)	9.57	10.94	1.18	1.17	1.79	6	23						
Series II																				
12-31-2023	8.89	0.28	1.03	1.31	(0.14)	—	(0.14)	10.06	14.85	1.29	1.28	2.97	26	12						
12-31-2022	10.51	0.35	(1.63)	(1.28)	(0.34)	—	(0.34)	8.89	(11.87)	1.32	1.31	3.61	26	15						
12-31-2021	9.67	0.24	0.84	1.08	(0.24)	—	(0.24)	10.51	11.08	1.29	1.28	2.27	34	26						
12-31-2020	9.57	0.15	0.14	0.29	(0.19)	—	(0.19)	9.67	3.36	1.41	1.40	1.82	33	26						
12-31-2019	8.93	0.15	0.77	0.92	(0.28)	—	(0.28)	9.57	10.71	1.38	1.37	1.64	35	23						
Series NAV																				
12-31-2023	8.87	0.30	1.03	1.33	(0.16)	—	(0.16)	10.04	15.15	1.04	1.03	3.22	189	12						
12-31-2022	10.49	0.37	(1.63)	(1.26)	(0.36)	—	(0.36)	8.87	(11.63)	1.07	1.06	3.89	173	15						
12-31-2021	9.65	0.27	0.83	1.10	(0.26)	—	(0.26)	10.49	11.25	1.04	1.03	2.55	210	26						
12-31-2020	9.55	0.17	0.14	0.31	(0.21)	—	(0.21)	9.65	3.72	1.16	1.15	2.07	194	26						
12-31-2019	8.92	0.17	0.76	0.93	(0.30)	—	(0.30)	9.55	10.89	1.13	1.12	1.87	193	23						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Equity Income Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	13.93	0.27	0.83	1.10	(0.27)	(1.32)	(1.59)	13.44	9.39	0.78	0.75	1.97	214	18						
12-31-2022	16.63	0.30	(0.95)	(0.65)	(0.29)	(1.76)	(2.05)	13.93	(3.40)	0.78	0.75	1.92	218	16						
12-31-2021	13.79	0.26	3.23	3.49	(0.32)	(0.33)	(0.65)	16.63	25.42	0.77	0.74	1.62	250	21						
12-31-2020	15.35	0.30	(0.40)	(0.10)	(0.41)	(1.05)	(1.46)	13.79	1.02	0.79	0.76	2.32	225	28						
12-31-2019	13.65	0.35	3.07	3.42	(0.31)	(1.41)	(1.72)	15.35	26.34	0.80	0.77	2.30	255	18 ³						
Series II																				
12-31-2023	13.82	0.24	0.84	1.08	(0.25)	(1.32)	(1.57)	13.33	9.26	0.98	0.95	1.77	107	18						
12-31-2022	16.52	0.27	(0.95)	(0.68)	(0.26)	(1.76)	(2.02)	13.82	(3.64)	0.98	0.95	1.72	113	16						
12-31-2021	13.70	0.23	3.21	3.44	(0.29)	(0.33)	(0.62)	16.52	25.21	0.97	0.94	1.42	130	21						
12-31-2020	15.27	0.27	(0.40)	(0.13)	(0.39)	(1.05)	(1.44)	13.70	0.75	0.99	0.96	2.11	120	28						
12-31-2019	13.58	0.31	3.07	3.38	(0.28)	(1.41)	(1.69)	15.27	26.17	1.00	0.97	2.10	137	18 ³						
Series NAV																				
12-31-2023	13.82	0.28	0.83	1.11	(0.28)	(1.32)	(1.60)	13.33	9.52	0.73	0.70	2.02	1,067	18						
12-31-2022	16.52	0.31	(0.95)	(0.64)	(0.30)	(1.76)	(2.06)	13.82	(3.38)	0.73	0.70	1.96	1,043	16						
12-31-2021	13.70	0.27	3.21	3.48	(0.33)	(0.33)	(0.66)	16.52	25.49	0.72	0.69	1.67	1,311	21						
12-31-2020	15.27	0.31	(0.41)	(0.10)	(0.42)	(1.05)	(1.47)	13.70	1.01	0.74	0.71	2.38	1,139	28						
12-31-2019	13.58	0.35	3.07	3.42	(0.32)	(1.41)	(1.73)	15.27	26.47	0.75	0.72	2.34	1,304	18 ³						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Excludes merger activity.

Financial Industries Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	11.20	0.21	0.26	0.47	(0.19)	(0.47)	(0.66)	11.01	5.22	0.95	0.94	1.95	77	68						
12-31-2022	16.38	0.22	(2.47)	(2.25)	(0.35)	(2.58)	(2.93)	11.20	(13.67)	0.91	0.90	1.51	93	50						
12-31-2021	12.79	0.15	3.65	3.80	(0.13)	(0.08)	(0.21)	16.38	29.70	0.90	0.89	0.96	132	74						
12-31-2020	14.08	0.14	(0.06)	0.08	(0.17)	(1.20)	(1.37)	12.79	2.17	0.94	0.93	1.15	93	44						
12-31-2019	11.90	0.21	3.39	3.60	(0.60)	(0.82)	(1.42)	14.08	31.79	0.91	0.90	1.53	113	28						
Series II																				
12-31-2023	11.06	0.18	0.26	0.44	(0.17)	(0.47)	(0.64)	10.86	4.98	1.15	1.14	1.75	14	68						
12-31-2022	16.21	0.18	(2.43)	(2.25)	(0.32)	(2.58)	(2.90)	11.06	(13.83)	1.11	1.10	1.31	16	50						
12-31-2021	12.67	0.11	3.62	3.73	(0.11)	(0.08)	(0.19)	16.21	29.38	1.10	1.09	0.75	22	74						
12-31-2020	13.96	0.11	(0.05)	0.06	(0.15)	(1.20)	(1.35)	12.67	1.99	1.14	1.13	0.95	15	44						
12-31-2019	11.79	0.18	3.36	3.54	(0.55)	(0.82)	(1.37)	13.96	31.51	1.11	1.10	1.32	17	28						
Series NAV																				
12-31-2023	11.15	0.21	0.25	0.46	(0.19)	(0.47)	(0.66)	10.95	5.21	0.90	0.89	2.00	26	68						
12-31-2022	16.32	0.22	(2.45)	(2.23)	(0.36)	(2.58)	(2.94)	11.15	(13.61)	0.86	0.85	1.57	27	50						
12-31-2021	12.75	0.15	3.64	3.79	(0.14)	(0.08)	(0.22)	16.32	29.70	0.85	0.84	1.01	34	74						
12-31-2020	14.03	0.14	(0.04)	0.10	(0.18)	(1.20)	(1.38)	12.75	2.31	0.89	0.88	1.20	25	44						
12-31-2019	11.88	0.21	3.38	3.59	(0.62)	(0.82)	(1.44)	14.03	31.71	0.86	0.85	1.57	28	28						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Fundamental All Cap Core Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	24.72	0.11	7.89	8.00	(0.11)	(3.77)	(3.88)	28.84	35.40	0.77	0.76	0.39	105	16						
12-31-2022	36.40	0.07	(8.85)	(8.78)	(0.07)	(2.83)	(2.90)	24.72	(24.29)	0.76	0.76	0.24	85	29						
12-31-2021	30.15	0.04	9.14	9.18	(0.04)	(2.89)	(2.93)	36.40	30.63	0.76	0.75	0.11	138	14						
12-31-2020	24.56	0.06	6.42	6.48	(0.10)	(0.79)	(0.89)	30.15	26.87	0.76	0.76	0.26	120	19						
12-31-2019	19.64	0.11	6.79	6.90	(0.10)	(1.88)	(1.98)	24.56	36.45	0.77	0.76	0.48	119	15						
Series II																				
12-31-2023	24.61	0.05	7.84	7.89	(0.05)	(3.77)	(3.82)	28.68	35.10	0.97	0.96	0.19	48	16						
12-31-2022	36.24	0.01	(8.81)	(8.80)	— ³	(2.83)	(2.83)	24.61	(24.43)	0.96	0.96	0.04	41	29						
12-31-2021	30.06	(0.03)	9.10	9.07	—	(2.89)	(2.89)	36.24	30.34	0.96	0.95	(0.09)	62	14						
12-31-2020	24.49	0.01	6.40	6.41	(0.05)	(0.79)	(0.84)	30.06	26.65	0.96	0.96	0.05	51	19						
12-31-2019	19.59	0.06	6.78	6.84	(0.06)	(1.88)	(1.94)	24.49	36.18	0.97	0.96	0.28	49	15						
Series NAV																				
12-31-2023	24.91	0.12	7.95	8.07	(0.12)	(3.77)	(3.89)	29.09	35.44	0.72	0.71	0.44	2,148	16						
12-31-2022	36.66	0.09	(8.93)	(8.84)	(0.08)	(2.83)	(2.91)	24.91	(24.26)	0.71	0.71	0.29	1,717	29						
12-31-2021	30.34	0.06	9.21	9.27	(0.06)	(2.89)	(2.95)	36.66	30.68	0.71	0.70	0.16	2,457	14						
12-31-2020	24.71	0.08	6.45	6.53	(0.11)	(0.79)	(0.90)	30.34	26.97	0.71	0.71	0.30	2,017	19						
12-31-2019	19.74	0.12	6.84	6.96	(0.11)	(1.88)	(1.99)	24.71	36.58	0.72	0.71	0.52	1,700	15						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.005 per share.

Fundamental Large Cap Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	22.62	0.28	4.68	4.96	(0.26)	(1.93)	(2.19)	25.39	23.45	0.79	0.77	1.14	447	13						
12-31-2022	28.91	0.26	(2.73)	(2.47)	(0.29)	(3.53)	(3.82)	22.62	(7.95)	0.78	0.77	1.01	408	21						
12-31-2021	25.10	0.22	7.34	7.56	(0.24)	(3.51)	(3.75)	28.91	29.96	0.77	0.76	0.75	483	29						
12-31-2020	23.13	0.21	2.44	2.65	(0.24)	(0.44)	(0.68)	25.10	11.96	0.79	0.78	0.95	391	44						
12-31-2019	17.51	0.25	5.97	6.22	(0.25)	(0.35)	(0.60)	23.13	35.85	0.78	0.77	1.17	403	13						
Series II																				
12-31-2023	22.84	0.23	4.74	4.97	(0.22)	(1.93)	(2.15)	25.66	23.22	0.99	0.97	0.94	150	13						
12-31-2022	29.14	0.21	(2.74)	(2.53)	(0.24)	(3.53)	(3.77)	22.84	(8.13)	0.98	0.97	0.81	143	21						
12-31-2021	25.28	0.16	7.39	7.55	(0.18)	(3.51)	(3.69)	29.14	29.72	0.97	0.96	0.55	177	29						
12-31-2020	23.29	0.16	2.47	2.63	(0.20)	(0.44)	(0.64)	25.28	11.75	0.99	0.98	0.75	160	44						
12-31-2019	17.63	0.21	6.00	6.21	(0.20)	(0.35)	(0.55)	23.29	35.59	0.98	0.97	0.97	164	13						
Series NAV																				
12-31-2023	22.64	0.29	4.68	4.97	(0.27)	(1.93)	(2.20)	25.41	23.49	0.74	0.72	1.19	176	13						
12-31-2022	28.92	0.28	(2.72)	(2.44)	(0.31)	(3.53)	(3.84)	22.64	(7.86)	0.73	0.72	1.06	163	21						
12-31-2021	25.11	0.23	7.34	7.57	(0.25)	(3.51)	(3.76)	28.92	30.00	0.72	0.71	0.79	163	29						
12-31-2020	23.14	0.21	2.45	2.66	(0.25)	(0.44)	(0.69)	25.11	12.01	0.74	0.73	0.99	125	44						
12-31-2019	17.51	0.25	5.99	6.24	(0.26)	(0.35)	(0.61)	23.14	35.97	0.73	0.72	1.21	97	13						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Global Equity Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets							
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	From tax return of capital (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I															
12-31-2023	19.49	0.26	3.55	3.81	(0.17)	(0.76)	—	(0.93)	22.37	20.09	0.95	0.94	1.24	225	38
12-31-2022	25.34	0.31	(4.12)	(3.81)	(0.61)	(1.43)	—	(2.04)	19.49	(14.84)	0.94	0.93	1.40	212	61
12-31-2021	20.89	0.39	4.06	4.45	—	—	—	—	25.34	21.30	0.93	0.92	1.68	277	64
12-31-2020	20.04	0.18	1.09	1.27	(0.23)	(0.17)	(0.02)	(0.42)	20.89	6.60	1.06	1.05	0.96	265	120 ^{3,4}
12-31-2019	18.37	0.49	2.32	2.81	(0.42)	(0.72)	—	(1.14)	20.04	16.04	1.00	0.95	2.51	115	20
Series II															
12-31-2023	19.35	0.22	3.52	3.74	(0.14)	(0.76)	—	(0.90)	22.19	19.81	1.15	1.14	1.04	22	38
12-31-2022	25.17	0.26	(4.09)	(3.83)	(0.56)	(1.43)	—	(1.99)	19.35	(15.01)	1.14	1.13	1.20	21	61
12-31-2021	20.79	0.34	4.04	4.38	—	—	—	—	25.17	21.01	1.13	1.12	1.46	29	64
12-31-2020	19.95	0.18	1.04	1.22	(0.19)	(0.17)	(0.02)	(0.38)	20.79	6.42	1.26	1.25	0.96	27	120 ^{3,4}
12-31-2019	18.29	0.45	2.31	2.76	(0.38)	(0.72)	—	(1.10)	19.95	15.83	1.20	1.15	2.31	31	20
Series NAV															
12-31-2023	19.47	0.27	3.55	3.82	(0.18)	(0.76)	—	(0.94)	22.35	20.17	0.90	0.89	1.28	49	38
12-31-2022	25.32	0.32	(4.12)	(3.80)	(0.62)	(1.43)	—	(2.05)	19.47	(14.81)	0.89	0.88	1.45	42	61
12-31-2021	20.87	0.39	4.06	4.45	—	—	—	—	25.32	21.32	0.88	0.87	1.69	51	64
12-31-2020	20.01	0.22	1.07	1.29	(0.24)	(0.17)	(0.02)	(0.43)	20.87	6.71	1.01	1.00	1.20	44	120 ^{3,4}
12-31-2019	18.35	0.49	2.32	2.81	(0.43)	(0.72)	—	(1.15)	20.01	16.06	0.95	0.90	2.53	43	20

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Increase in portfolio turnover rate resulted from repositioning of the portfolio during the period in accordance with investment policy changes approved by the Board of Trustees.

4 Excludes merger activity.

Health Sciences Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	23.84	(0.06)	0.93	0.87	—	(1.26)	(1.26)	23.45	4.25	1.06	1.00	(0.26)	58	43						
12-31-2022	31.29	(0.07)	(4.14)	(4.21)	—	(3.24)	(3.24)	23.84	(13.09)	1.06	1.01	(0.29)	65	24						
12-31-2021	31.07	(0.15)	3.67	3.52	—	(3.30)	(3.30)	31.29	11.19	1.08	1.03	(0.47)	80	29						
12-31-2020	27.18	(0.09)	7.18	7.09	—	(3.20)	(3.20)	31.07	27.17	1.15	1.09	(0.32)	80	38						
12-31-2019	22.87	(0.08)	6.36	6.28	—	(1.97)	(1.97)	27.18	28.68	1.16	1.10	(0.32)	72	34						
Series II																				
12-31-2023	20.73	(0.09)	0.78	0.69	—	(1.26)	(1.26)	20.16	4.02	1.26	1.20	(0.46)	50	43						
12-31-2022	27.76	(0.11)	(3.68)	(3.79)	—	(3.24)	(3.24)	20.73	(13.24)	1.26	1.21	(0.49)	56	24						
12-31-2021	27.95	(0.19)	3.30	3.11	—	(3.30)	(3.30)	27.76	10.97	1.28	1.23	(0.67)	75	29						
12-31-2020	24.78	(0.13)	6.50	6.37	—	(3.20)	(3.20)	27.95	26.89	1.35	1.29	(0.52)	84	38						
12-31-2019	21.05	(0.12)	5.82	5.70	—	(1.97)	(1.97)	24.78	28.40	1.36	1.30	(0.53)	71	34						
Series NAV																				
12-31-2023	24.46	(0.05)	0.95	0.90	—	(1.26)	(1.26)	24.10	4.26	1.01	0.95	(0.20)	155	43						
12-31-2022	31.98	(0.06)	(4.22)	(4.28)	—	(3.24)	(3.24)	24.46	(13.02)	1.01	0.96	(0.23)	157	24						
12-31-2021	31.68	(0.14)	3.74	3.60	—	(3.30)	(3.30)	31.98	11.23	1.03	0.98	(0.42)	183	29						
12-31-2020	27.64	(0.08)	7.32	7.24	—	(3.20)	(3.20)	31.68	27.26	1.10	1.04	(0.27)	162	38						
12-31-2019	23.22	(0.08)	6.47	6.39	—	(1.97)	(1.97)	27.64	28.67	1.11	1.05	(0.29)	130	34						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

High Yield Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	4.30	0.33	0.22	0.55	(0.12)	—	(0.12)	4.73	13.05	0.87	0.86	7.24	50	38						
12-31-2022	5.30	0.29	(1.00)	(0.71)	(0.29)	—	(0.29)	4.30	(13.25)	0.85	0.84	6.03	50	32						
12-31-2021	5.27	0.27	0.04	0.31	(0.28)	—	(0.28)	5.30	5.82	0.83	0.82	4.99	64	76						
12-31-2020	5.31	0.28	0.01	0.29	(0.33)	—	(0.33)	5.27	5.81	0.85	0.85	5.47	65	96						
12-31-2019	4.84	0.30	0.46	0.76	(0.29)	—	(0.29)	5.31	15.66	0.80 ³	0.79 ³	5.62	68	57						
Series II																				
12-31-2023	4.43	0.33	0.22	0.55	(0.11)	—	(0.11)	4.87	12.70	1.07	1.06	7.04	32	38						
12-31-2022	5.45	0.28	(1.02)	(0.74)	(0.28)	—	(0.28)	4.43	(13.45)	1.05	1.04	5.80	33	32						
12-31-2021	5.41	0.27	0.03	0.30	(0.26)	—	(0.26)	5.45	5.67	1.03	1.02	4.79	48	76						
12-31-2020	5.44	0.28	0.01	0.29	(0.32)	—	(0.32)	5.41	5.67	1.05	1.05	5.27	47	96						
12-31-2019	4.96	0.29	0.47	0.76	(0.28)	—	(0.28)	5.44	15.50	1.00 ³	0.99 ³	5.42	52	57						
Series NAV																				
12-31-2023	4.22	0.32	0.21	0.53	(0.12)	—	(0.12)	4.63	12.87	0.82	0.81	7.30	98	38						
12-31-2022	5.20	0.28	(0.97)	(0.69)	(0.29)	—	(0.29)	4.22	(13.07)	0.80	0.79	6.12	85	32						
12-31-2021	5.18	0.27	0.03	0.30	(0.28)	—	(0.28)	5.20	5.78	0.78	0.77	5.05	96	76						
12-31-2020	5.23	0.28	— ⁴	0.28	(0.33)	—	(0.33)	5.18	5.77	0.80	0.80	5.52	84	96						
12-31-2019	4.77	0.29	0.46	0.75	(0.29)	—	(0.29)	5.23	15.99	0.75 ³	0.74 ³	5.66	86	57						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Includes reimbursement of legal fees of 0.05%.

4 Less than \$0.005 per share.

International Equity Index Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	16.31	0.45	2.01	2.46	(0.43)	—	(0.43)	18.34	15.36	0.66	0.39	2.59	326	4						
12-31-2022	20.25	0.48	(3.84)	(3.36)	(0.50)	(0.08)	(0.58)	16.31	(16.25)	0.67	0.39	2.77	294	6						
12-31-2021	19.55	0.48	1.02	1.50	(0.55)	(0.25)	(0.80)	20.25	7.59	0.65	0.39	2.29	371	5						
12-31-2020	18.30	0.35	1.51	1.86	(0.44)	(0.17)	(0.61)	19.55	10.64	0.66	0.39	2.07	361	5						
12-31-2019	15.44	0.50	2.77	3.27	(0.41)	—	(0.41)	18.30	21.37	0.67	0.39	2.92	359	5 ³						
Series II																				
12-31-2023	16.34	0.42	2.01	2.43	(0.40)	—	(0.40)	18.37	15.18	0.86	0.59	2.38	19	4						
12-31-2022	20.27	0.44	(3.82)	(3.38)	(0.47)	(0.08)	(0.55)	16.34	(16.39)	0.87	0.59	2.55	17	6						
12-31-2021	19.58	0.43	1.02	1.45	(0.51)	(0.25)	(0.76)	20.27	7.33	0.85	0.59	2.09	23	5						
12-31-2020	18.32	0.32	1.51	1.83	(0.40)	(0.17)	(0.57)	19.58	10.48	0.86	0.59	1.87	23	5						
12-31-2019	15.46	0.44	2.80	3.24	(0.38)	—	(0.38)	18.32	21.11	0.87	0.59	2.55	22	5 ³						
Series NAV																				
12-31-2023	16.31	0.46	2.00	2.46	(0.44)	—	(0.44)	18.33	15.42	0.61	0.34	2.64	541	4						
12-31-2022	20.24	0.49	(3.83)	(3.34)	(0.51)	(0.08)	(0.59)	16.31	(16.16)	0.62	0.34	2.84	468	6						
12-31-2021	19.55	0.48	1.02	1.50	(0.56)	(0.25)	(0.81)	20.24	7.59	0.60	0.34	2.33	535	5						
12-31-2020	18.29	0.36	1.51	1.87	(0.44)	(0.17)	(0.61)	19.55	10.76	0.61	0.34	2.11	484	5						
12-31-2019	15.43	0.50	2.78	3.28	(0.42)	—	(0.42)	18.29	21.44	0.62	0.34	2.91	458	5 ³						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Excludes merger activity.

International Small Company Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	11.72	0.25	1.24	1.49	(0.25)	(0.27)	(0.52)	12.69	13.44	1.06	1.05	2.02	19	11	
12-31-2022	16.08	0.25	(3.32)	(3.07)	(0.26)	(1.03)	(1.29)	11.72	(18.17)	1.08	1.08	1.92	19	20	
12-31-2021	14.73	0.21	1.82	2.03	(0.21)	(0.47)	(0.68)	16.08	13.72	1.08	1.07	1.31	26	23	
12-31-2020	14.38	0.15	0.93	1.08	(0.28)	(0.45)	(0.73)	14.73	8.37	1.23	1.22	1.20	27	14	
12-31-2019	12.55	0.24	2.47	2.71	(0.30)	(0.58)	(0.88)	14.38	22.60	1.20	1.19	1.76	28	12	
Series II															
12-31-2023	11.70	0.22	1.26	1.48	(0.23)	(0.27)	(0.50)	12.68	13.33	1.26	1.25	1.82	13	11	
12-31-2022	16.05	0.22	(3.31)	(3.09)	(0.23)	(1.03)	(1.26)	11.70	(18.35)	1.28	1.28	1.70	12	20	
12-31-2021	14.71	0.18	1.81	1.99	(0.18)	(0.47)	(0.65)	16.05	13.47	1.28	1.27	1.12	15	23	
12-31-2020	14.36	0.13	0.92	1.05	(0.25)	(0.45)	(0.70)	14.71	8.17	1.43	1.42	0.99	15	14	
12-31-2019	12.51	0.21	2.47	2.68	(0.25)	(0.58)	(0.83)	14.36	22.35	1.40	1.39	1.55	15	12	
Series NAV															
12-31-2023	11.72	0.25	1.25	1.50	(0.25)	(0.27)	(0.52)	12.70	13.59	1.01	1.00	2.06	75	11	
12-31-2022	16.09	0.26	(3.33)	(3.07)	(0.27)	(1.03)	(1.30)	11.72	(18.17)	1.03	1.03	1.96	68	20	
12-31-2021	14.74	0.22	1.82	2.04	(0.22)	(0.47)	(0.69)	16.09	13.77	1.03	1.02	1.37	88	23	
12-31-2020	14.39	0.16	0.92	1.08	(0.28)	(0.45)	(0.73)	14.74	8.41	1.18	1.17	1.25	75	14	
12-31-2019	12.56	0.25	2.48	2.73	(0.32)	(0.58)	(0.90)	14.39	22.70	1.15	1.14	1.81	73	12	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Investment Quality Bond Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	9.22	0.33	0.27	0.60	(0.15)	—	(0.15)	9.67	6.49	0.77	0.76	3.52	101	41						
12-31-2022	11.50	0.27	(2.01)	(1.74)	(0.33)	(0.21)	(0.54)	9.22	(14.88)	0.76	0.75	2.62	100	39						
12-31-2021	12.17	0.22	(0.37)	(0.15)	(0.25)	(0.27)	(0.52)	11.50	(1.26)	0.74	0.73	1.86	134	37						
12-31-2020	11.39	0.26	0.80	1.06	(0.27)	(0.01)	(0.28)	12.17	9.37	0.75	0.74	2.15	142	51						
12-31-2019	10.68	0.30	0.70	1.00	(0.29)	—	(0.29)	11.39	9.36	0.75	0.74	2.70	139	45						
Series II																				
12-31-2023	9.23	0.31	0.27	0.58	(0.13)	—	(0.13)	9.68	6.28	0.97	0.96	3.32	51	41						
12-31-2022	11.50	0.25	(2.00)	(1.75)	(0.31)	(0.21)	(0.52)	9.23	(15.06)	0.96	0.95	2.42	51	39						
12-31-2021	12.18	0.20	(0.39)	(0.19)	(0.22)	(0.27)	(0.49)	11.50	(1.45)	0.94	0.93	1.66	71	37						
12-31-2020	11.40	0.23	0.81	1.04	(0.25)	(0.01)	(0.26)	12.18	9.15	0.95	0.94	1.95	80	51						
12-31-2019	10.69	0.28	0.70	0.98	(0.27)	—	(0.27)	11.40	9.15	0.95	0.94	2.49	76	45						
Series NAV																				
12-31-2023	9.18	0.33	0.27	0.60	(0.15)	—	(0.15)	9.63	6.57	0.72	0.71	3.58	62	41						
12-31-2022	11.45	0.27	(2.00)	(1.73)	(0.33)	(0.21)	(0.54)	9.18	(14.88)	0.71	0.70	2.70	56	39						
12-31-2021	12.13	0.23	(0.39)	(0.16)	(0.25)	(0.27)	(0.52)	11.45	(1.21)	0.69	0.68	1.91	65	37						
12-31-2020	11.35	0.26	0.81	1.07	(0.28)	(0.01)	(0.29)	12.13	9.46	0.70	0.69	2.19	44	51						
12-31-2019	10.65	0.31	0.68	0.99	(0.29)	—	(0.29)	11.35	9.35	0.70	0.69	2.74	41	45						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Lifestyle Balanced Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	12.55	0.31 ³	1.28	1.59	(0.29)	(1.20)	(1.49)	12.65	13.74	0.13 ⁴	0.13 ⁴	2.39 ³	38	9						
12-31-2022	16.79	0.31 ³	(2.95)	(2.64)	(0.30)	(1.30)	(1.60)	12.55	(15.45)	0.12 ⁴	0.12 ⁴	2.11 ³	32	15						
12-31-2021	16.40	0.37 ³	1.17	1.54	(0.37)	(0.78)	(1.15)	16.79	9.44	0.12 ⁴	0.11 ⁴	2.18 ³	42	10						
12-31-2020	15.43	0.38 ³	1.53	1.91	(0.37)	(0.57)	(0.94)	16.40	12.69	0.12 ⁴	0.12 ⁴	2.45 ³	41	15						
12-31-2019	13.76	0.33 ³	2.09	2.42	(0.30)	(0.45)	(0.75)	15.43	17.73	0.12 ⁴	0.12 ⁴	2.19 ³	37	11						
Series II																				
12-31-2023	12.58	0.27 ³	1.29	1.56	(0.26)	(1.20)	(1.46)	12.68	13.50	0.33 ⁴	0.33 ⁴	2.06 ³	772	9						
12-31-2022	16.82	0.27 ³	(2.94)	(2.67)	(0.27)	(1.30)	(1.57)	12.58	(15.60)	0.32 ⁴	0.32 ⁴	1.87 ³	730	15						
12-31-2021	16.43	0.34 ³	1.17	1.51	(0.34)	(0.78)	(1.12)	16.82	9.21	0.32 ⁴	0.31 ⁴	1.98 ³	997	10						
12-31-2020	15.46	0.35 ³	1.53	1.88	(0.34)	(0.57)	(0.91)	16.43	12.47	0.32 ⁴	0.32 ⁴	2.26 ³	960	15						
12-31-2019	13.78	0.29 ³	2.11	2.40	(0.27)	(0.45)	(0.72)	15.46	17.56	0.32 ⁴	0.32 ⁴	1.94 ³	860	11						
Series NAV																				
12-31-2023	12.54	0.31 ³	1.28	1.59	(0.30)	(1.20)	(1.50)	12.63	13.72	0.08 ⁴	0.08 ⁴	2.38 ³	156	9						
12-31-2022	16.77	0.32 ³	(2.94)	(2.62)	(0.31)	(1.30)	(1.61)	12.54	(15.36)	0.07 ⁴	0.07 ⁴	2.21 ³	137	15						
12-31-2021	16.38	0.40 ³	1.15	1.55	(0.38)	(0.78)	(1.16)	16.77	9.51	0.07 ⁴	0.06 ⁴	2.33 ³	161	10						
12-31-2020	15.42	0.40 ³	1.51	1.91	(0.38)	(0.57)	(0.95)	16.38	12.68	0.07 ⁴	0.07 ⁴	2.57 ³	136	15						
12-31-2019	13.74	0.34 ³	2.09	2.43	(0.30)	(0.45)	(0.75)	15.42	17.89	0.07 ⁴	0.07 ⁴	2.29 ³	113	11						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Lifestyle Conservative Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	11.01	0.30 ³	0.66	0.96	(0.32)	(0.50)	(0.82)	11.15	9.12	0.17 ⁴	0.13 ⁴	2.62 ³	13	11						
12-31-2022	14.10	0.32 ³	(2.41)	(2.09)	(0.32)	(0.68)	(1.00)	11.01	(14.62)	0.16 ⁴	0.13 ⁴	2.59 ³	14	16						
12-31-2021	14.43	0.38 ³	0.04	0.42	(0.35)	(0.40)	(0.75)	14.10	2.96	0.14 ⁴	0.13 ⁴	2.62 ³	18	22						
12-31-2020	13.68	0.45 ³	1.01	1.46	(0.40)	(0.31)	(0.71)	14.43	10.75	0.15 ⁴	0.13 ⁴	3.19 ³	16	21						
12-31-2019	12.67	0.32 ³	1.25	1.57	(0.30)	(0.26)	(0.56)	13.68	12.46	0.15 ⁴	0.13 ⁴	2.36 ³	12	21						
Series II																				
12-31-2023	11.03	0.29 ³	0.64	0.93	(0.29)	(0.50)	(0.79)	11.17	8.90	0.37 ⁴	0.33 ⁴	2.54 ³	146	11						
12-31-2022	14.11	0.28 ³	(2.38)	(2.10)	(0.30)	(0.68)	(0.98)	11.03	(14.71)	0.36 ⁴	0.33 ⁴	2.27 ³	144	16						
12-31-2021	14.45	0.32 ³	0.07	0.39	(0.33)	(0.40)	(0.73)	14.11	2.68	0.34 ⁴	0.33 ⁴	2.19 ³	200	22						
12-31-2020	13.70	0.38 ³	1.05	1.43	(0.37)	(0.31)	(0.68)	14.45	10.53	0.35 ⁴	0.33 ⁴	2.71 ³	208	21						
12-31-2019	12.69	0.30 ³	1.25	1.55	(0.28)	(0.26)	(0.54)	13.70	12.22	0.35 ⁴	0.33 ⁴	2.20 ³	170	21						
Series NAV																				
12-31-2023	11.00	0.30 ³	0.66	0.96	(0.32)	(0.50)	(0.82)	11.14	9.18	0.12 ⁴	0.08 ⁴	2.63 ³	7	11						
12-31-2022	14.08	0.35 ³	(2.42)	(2.07)	(0.33)	(0.68)	(1.01)	11.00	(14.52)	0.11 ⁴	0.08 ⁴	2.84 ³	8	16						
12-31-2021	14.42	0.33 ³	0.09	0.42	(0.36)	(0.40)	(0.76)	14.08	2.94	0.09 ⁴	0.08 ⁴	2.24 ³	8	22						
12-31-2020	13.67	0.57 ³	0.89	1.46	(0.40)	(0.31)	(0.71)	14.42	10.80	0.10 ⁴	0.08 ⁴	4.03 ³	9	21						
12-31-2019	12.66	0.31 ³	1.27	1.58	(0.31)	(0.26)	(0.57)	13.67	12.52	0.10 ⁴	0.08 ⁴	2.29 ³	4	21						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Lifestyle Growth Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	13.15	0.26 ³	1.75	2.01	(0.25)	(1.80)	(2.05)	13.11	17.00	0.12 ⁴	0.12 ⁴	1.91 ³	200	6						
12-31-2022	18.57	0.29 ³	(3.35)	(3.06)	(0.27)	(2.09)	(2.36)	13.15	(16.08)	0.12 ⁴	0.11 ⁴	1.81 ³	194	12						
12-31-2021	17.79	0.37 ³	2.11	2.48	(0.36)	(1.34)	(1.70)	18.57	14.07	0.11 ⁴	0.11 ⁴	1.97 ³	252	12 ⁵						
12-31-2020	16.92	0.36 ³	1.84	2.20	(0.37)	(0.96)	(1.33)	17.79	13.58	0.12 ⁴	0.11 ⁴	2.19 ³	236	13						
12-31-2019	14.86	0.32 ³	2.81	3.13	(0.30)	(0.77)	(1.07)	16.92	21.45	0.12 ⁴	0.11 ⁴	1.96 ³	224	7						
Series II																				
12-31-2023	13.17	0.23 ³	1.75	1.98	(0.23)	(1.80)	(2.03)	13.12	16.67	0.32 ⁴	0.32 ⁴	1.70 ³	4,375	6						
12-31-2022	18.59	0.25 ³	(3.34)	(3.09)	(0.24)	(2.09)	(2.33)	13.17	(16.24)	0.32 ⁴	0.31 ⁴	1.59 ³	4,184	12						
12-31-2021	17.81	0.33 ³	2.11	2.44	(0.32)	(1.34)	(1.66)	18.59	13.84	0.31 ⁴	0.31 ⁴	1.72 ³	5,588	12 ⁵						
12-31-2020	16.94	0.33 ³	1.84	2.17	(0.34)	(0.96)	(1.30)	17.81	13.37	0.32 ⁴	0.31 ⁴	1.97 ³	5,588	13						
12-31-2019	14.88	0.29 ³	2.81	3.10	(0.27)	(0.77)	(1.04)	16.94	21.20	0.32 ⁴	0.31 ⁴	1.75 ³	5,567	7						
Series NAV																				
12-31-2023	13.15	0.28 ³	1.73	2.01	(0.26)	(1.80)	(2.06)	13.10	16.97	0.07 ⁴	0.07 ⁴	2.04 ³	577	6						
12-31-2022	18.56	0.30 ³	(3.34)	(3.04)	(0.28)	(2.09)	(2.37)	13.15	(15.99)	0.07 ⁴	0.06 ⁴	1.92 ³	495	12						
12-31-2021	17.78	0.40 ³	2.09	2.49	(0.37)	(1.34)	(1.71)	18.56	14.13	0.06 ⁴	0.06 ⁴	2.12 ³	587	12 ⁵						
12-31-2020	16.91	0.38 ³	1.83	2.21	(0.38)	(0.96)	(1.34)	17.78	13.63	0.07 ⁴	0.06 ⁴	2.30 ³	477	13						
12-31-2019	14.85	0.34 ³	2.80	3.14	(0.31)	(0.77)	(1.08)	16.91	21.52	0.07 ⁴	0.06 ⁴	2.10 ³	415	7						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

5 Excludes merger activity.

Lifestyle Moderate Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	11.97	0.29 ³	1.06	1.35	(0.29)	(1.00)	(1.29)	12.03	12.15	0.15 ⁴	0.13 ⁴	2.36 ³	13	9						
12-31-2022	15.82	0.31 ³	(2.75)	(2.44)	(0.31)	(1.10)	(1.41)	11.97	(15.19)	0.14 ⁴	0.13 ⁴	2.28 ³	12	15						
12-31-2021	15.74	0.38 ³	0.75	1.13	(0.36)	(0.69)	(1.05)	15.82	7.25	0.13 ⁴	0.13 ⁴	2.36 ³	16	13						
12-31-2020	14.85	0.40 ³	1.36	1.76	(0.38)	(0.49)	(0.87)	15.74	12.09	0.14 ⁴	0.13 ⁴	2.64 ³	14	17						
12-31-2019	13.38	0.33 ³	1.79	2.12	(0.29)	(0.36)	(0.65)	14.85	15.97	0.14 ⁴	0.13 ⁴	2.28 ³	12	15						
Series II																				
12-31-2023	12.00	0.27 ³	1.05	1.32	(0.26)	(1.00)	(1.26)	12.06	11.91	0.35 ⁴	0.33 ⁴	2.19 ³	231	9						
12-31-2022	15.85	0.28 ³	(2.75)	(2.47)	(0.28)	(1.10)	(1.38)	12.00	(15.34)	0.34 ⁴	0.33 ⁴	2.00 ³	224	15						
12-31-2021	15.77	0.33 ³	0.77	1.10	(0.33)	(0.69)	(1.02)	15.85	7.03	0.33 ⁴	0.33 ⁴	2.05 ³	301	13						
12-31-2020	14.88	0.37 ³	1.36	1.73	(0.35)	(0.49)	(0.84)	15.77	11.87	0.34 ⁴	0.33 ⁴	2.43 ³	307	17						
12-31-2019	13.41	0.29 ³	1.80	2.09	(0.26)	(0.36)	(0.62)	14.88	15.72	0.34 ⁴	0.33 ⁴	2.00 ³	269	15						
Series NAV																				
12-31-2023	11.97	0.32 ³	1.03	1.35	(0.29)	(1.00)	(1.29)	12.03	12.21	0.10 ⁴	0.08 ⁴	2.57 ³	45	9						
12-31-2022	15.81	0.33 ³	(2.76)	(2.43)	(0.31)	(1.10)	(1.41)	11.97	(15.08)	0.09 ⁴	0.08 ⁴	2.37 ³	39	15						
12-31-2021	15.74	0.40 ³	0.73	1.13	(0.37)	(0.69)	(1.06)	15.81	7.23	0.08 ⁴	0.08 ⁴	2.44 ³	45	13						
12-31-2020	14.84	0.40 ³	1.38	1.78	(0.39)	(0.49)	(0.88)	15.74	12.22	0.09 ⁴	0.08 ⁴	2.67 ³	35	17						
12-31-2019	13.38	0.35 ³	1.77	2.12	(0.30)	(0.36)	(0.66)	14.84	15.95	0.09 ⁴	0.08 ⁴	2.39 ³	30	15						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Managed Volatility Balanced Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ^{1,2}	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ³	Expenses before reductions (%) ⁴	Expenses including reductions (%) ⁴	Net investment income (loss) (%) ²	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	9.99	0.23	0.87	1.10	(0.23)	(0.86)	(1.09)	10.00	11.99	0.26	0.18	2.28	359	6
12-31-2022	12.48	0.22	(2.11)	(1.89)	(0.23)	(0.37)	(0.60)	9.99	(15.08)	0.25	0.17	2.01	360	11
12-31-2021	11.66	0.23	0.91	1.14	(0.25)	(0.07)	(0.32)	12.48	9.76	0.24	0.15	1.89	476	11
12-31-2020	12.41	0.25	(0.07)	0.18	(0.27)	(0.66)	(0.93)	11.66	1.81	0.26	0.15	2.11	498	12
12-31-2019	11.23	0.25	1.73	1.98	(0.23)	(0.57)	(0.80)	12.41	17.92	0.26	0.13	2.07	556	8
Series II														
12-31-2023	9.91	0.21	0.86	1.07	(0.21)	(0.86)	(1.07)	9.91	11.79	0.46	0.38	2.06	2,852	6
12-31-2022	12.38	0.20	(2.09)	(1.89)	(0.21)	(0.37)	(0.58)	9.91	(15.22)	0.45	0.37	1.79	2,969	11
12-31-2021	11.57	0.20	0.90	1.10	(0.22)	(0.07)	(0.29)	12.38	9.54	0.44	0.35	1.66	3,991	11
12-31-2020	12.33	0.22	(0.08)	0.14	(0.24)	(0.66)	(0.90)	11.57	1.55	0.46	0.35	1.89	4,288	12
12-31-2019	11.16	0.22	1.72	1.94	(0.20)	(0.57)	(0.77)	12.33	17.73	0.46	0.33	1.86	4,957	8
Series NAV														
12-31-2023	10.03	0.24	0.86	1.10	(0.23)	(0.86)	(1.09)	10.04	12.00	0.21	0.13	2.35	1,055	6
12-31-2022	12.52	0.23	(2.11)	(1.88)	(0.24)	(0.37)	(0.61)	10.03	(14.98)	0.20	0.12	2.08	1,019	11
12-31-2021	11.69	0.24	0.91	1.15	(0.25)	(0.07)	(0.32)	12.52	9.88	0.19	0.10	1.97	1,269	11
12-31-2020	12.45	0.26	(0.09)	0.17	(0.27)	(0.66)	(0.93)	11.69	1.77	0.21	0.10	2.20	1,217	12
12-31-2019	11.26	0.26	1.73	1.99	(0.23)	(0.57)	(0.80)	12.45	18.02	0.21	0.08	2.16	1,261	8

1 Based on average daily shares outstanding.

2 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

3 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Managed Volatility Conservative Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ^{1,2}	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ³	Expenses before reductions (%) ⁴	Expenses including reductions (%) ⁴	Net investment income (loss) (%) ²	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	9.64	0.28	0.23	0.51	(0.29)	(0.21)	(0.50)	9.65	5.47	0.27	0.19	2.90	95	5						
12-31-2022	11.66	0.26	(1.99)	(1.73)	(0.28)	(0.01)	(0.29)	9.64	(14.80)	0.25	0.18	2.53	109	8						
12-31-2021	11.62	0.28	0.12	0.40	(0.29)	(0.07)	(0.36)	11.66	3.48	0.25	0.16	2.33	145	7						
12-31-2020	11.75	0.30	0.09	0.39	(0.33)	(0.19)	(0.52)	11.62	3.39	0.26	0.14	2.57	154	10						
12-31-2019	10.61	0.29	1.13	1.42	(0.26)	(0.02)	(0.28)	11.75	13.38	0.25	0.14	2.50	166	8						
Series II																				
12-31-2023	9.56	0.26	0.22	0.48	(0.27)	(0.21)	(0.48)	9.56	5.20	0.47	0.39	2.63	449	5						
12-31-2022	11.56	0.24	(1.97)	(1.73)	(0.26)	(0.01)	(0.27)	9.56	(14.93)	0.45	0.38	2.31	499	8						
12-31-2021	11.52	0.25	0.13	0.38	(0.27)	(0.07)	(0.34)	11.56	3.31	0.45	0.36	2.10	683	7						
12-31-2020	11.66	0.27	0.09	0.36	(0.31)	(0.19)	(0.50)	11.52	3.13	0.46	0.34	2.36	794	10						
12-31-2019	10.53	0.25	1.14	1.39	(0.24)	(0.02)	(0.26)	11.66	13.18	0.45	0.34	2.23	888	8						
Series NAV																				
12-31-2023	9.67	0.29	0.23	0.52	(0.30)	(0.21)	(0.51)	9.68	5.50	0.22	0.14	2.93	52	5						
12-31-2022	11.69	0.28	(2.00)	(1.72)	(0.29)	(0.01)	(0.30)	9.67	(14.72)	0.20	0.13	2.67	53	8						
12-31-2021	11.65	0.29	0.12	0.41	(0.30)	(0.07)	(0.37)	11.69	3.52	0.20	0.11	2.44	62	7						
12-31-2020	11.78	0.31	0.09	0.40	(0.34)	(0.19)	(0.53)	11.65	3.43	0.21	0.09	2.71	59	10						
12-31-2019	10.64	0.29	1.14	1.43	(0.27)	(0.02)	(0.29)	11.78	13.50	0.20	0.09	2.55	56	8						

1 Based on average daily shares outstanding.

2 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

3 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Managed Volatility Growth Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ^{1,2}	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ³	Expenses before reductions (%) ⁴	Expenses including reductions (%) ⁴	Net investment income (loss) (%) ²	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	10.79	0.21	1.09	1.30	(0.20)	(1.38)	(1.58)	10.51	13.69	0.27	0.18	1.89	451	8						
12-31-2022	13.28	0.19	(2.17)	(1.98)	(0.20)	(0.31)	(0.51)	10.79	(14.86)	0.27	0.18	1.64	450	14						
12-31-2021	12.03	0.21	1.33	1.54	(0.21)	(0.08)	(0.29)	13.28	12.82	0.25	0.16	1.64	589	12 ⁵						
12-31-2020	13.28	0.21	(0.46)	(0.25)	(0.24)	(0.76)	(1.00)	12.03	(1.42)	0.28	0.15	1.75	545	13						
12-31-2019	12.20	0.24	2.06	2.30	(0.21)	(1.01)	(1.22)	13.28	19.56	0.27	0.13	1.85	627	8						
Series II																				
12-31-2023	10.74	0.18	1.10	1.28	(0.18)	(1.38)	(1.56)	10.46	13.54	0.47	0.38	1.68	4,188	8						
12-31-2022	13.22	0.17	(2.16)	(1.99)	(0.18)	(0.31)	(0.49)	10.74	(15.03)	0.47	0.38	1.43	4,246	14						
12-31-2021	11.98	0.18	1.33	1.51	(0.19)	(0.08)	(0.27)	13.22	12.58	0.45	0.36	1.37	5,630	12 ⁵						
12-31-2020	13.23	0.18	(0.46)	(0.28)	(0.21)	(0.76)	(0.97)	11.98	(1.60)	0.48	0.35	1.53	5,886	13						
12-31-2019	12.16	0.21	2.06	2.27	(0.19)	(1.01)	(1.20)	13.23	19.32	0.47	0.33	1.64	7,116	8						
Series NAV																				
12-31-2023	10.81	0.22	1.09	1.31	(0.20)	(1.38)	(1.58)	10.54	13.81	0.22	0.13	1.97	951	8						
12-31-2022	13.30	0.20	(2.17)	(1.97)	(0.21)	(0.31)	(0.52)	10.81	(14.79)	0.22	0.13	1.72	891	14						
12-31-2021	12.05	0.23	1.32	1.55	(0.22)	(0.08)	(0.30)	13.30	12.85	0.20	0.11	1.80	1,075	12 ⁵						
12-31-2020	13.30	0.22	(0.47)	(0.25)	(0.24)	(0.76)	(1.00)	12.05	(1.37)	0.23	0.10	1.85	769	13						
12-31-2019	12.21	0.26	2.06	2.32	(0.22)	(1.01)	(1.23)	13.30	19.68	0.22	0.08	1.95	817	8						

1 Based on average daily shares outstanding.

2 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

3 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

5 Excludes merger activity.

Managed Volatility Moderate Portfolio

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ^{1,2}	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ³	Expenses before reductions (%) ⁴	Expenses including reductions (%) ⁴	Net investment income (loss) (%) ²	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	9.61	0.24	0.71	0.95	(0.24)	(0.69)	(0.93)	9.63	10.64	0.25	0.18	2.44	141	6						
12-31-2022	12.01	0.23	(2.03)	(1.80)	(0.24)	(0.36)	(0.60)	9.61	(14.87)	0.25	0.17	2.19	153	10						
12-31-2021	11.44	0.24	0.66	0.90	(0.25)	(0.08)	(0.33)	12.01	7.90	0.24	0.15	2.02	196	10						
12-31-2020	11.94	0.26	0.10	0.36	(0.28)	(0.58)	(0.86)	11.44	3.31	0.25	0.14	2.29	208	11						
12-31-2019	10.84	0.26	1.53	1.79	(0.24)	(0.45)	(0.69)	11.94	16.72	0.25	0.13	2.18	234	8						
Series II																				
12-31-2023	9.52	0.22	0.71	0.93	(0.22)	(0.69)	(0.91)	9.54	10.54	0.45	0.38	2.24	898	6						
12-31-2022	11.91	0.21	(2.02)	(1.81)	(0.22)	(0.36)	(0.58)	9.52	(15.10)	0.45	0.37	1.95	945	10						
12-31-2021	11.34	0.22	0.66	0.88	(0.23)	(0.08)	(0.31)	11.91	7.76	0.44	0.35	1.82	1,277	10						
12-31-2020	11.85	0.23	0.10	0.33	(0.26)	(0.58)	(0.84)	11.34	3.05	0.45	0.34	2.06	1,379	11						
12-31-2019	10.77	0.23	1.52	1.75	(0.22)	(0.45)	(0.67)	11.85	16.43	0.45	0.33	1.97	1,552	8						
Series NAV																				
12-31-2023	9.62	0.25	0.71	0.96	(0.24)	(0.69)	(0.93)	9.65	10.79	0.20	0.13	2.52	120	6						
12-31-2022	12.03	0.24	(2.04)	(1.80)	(0.25)	(0.36)	(0.61)	9.62	(14.89)	0.20	0.12	2.27	116	10						
12-31-2021	11.45	0.25	0.67	0.92	(0.26)	(0.08)	(0.34)	12.03	8.03	0.19	0.10	2.12	142	10						
12-31-2020	11.96	0.27	0.08	0.35	(0.28)	(0.58)	(0.86)	11.45	3.27	0.20	0.09	2.38	139	11						
12-31-2019	10.85	0.27	1.54	1.81	(0.25)	(0.45)	(0.70)	11.96	16.85	0.20	0.08	2.29	137	8						

1 Based on average daily shares outstanding.

2 Net investment income is affected by the timing and frequency of the declaration of dividends by the underlying funds in which the portfolio invests.

3 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

4 Ratios do not include expenses indirectly incurred from underlying funds and can vary based on the mix of underlying funds held by the portfolio.

Mid Cap Growth Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	7.27	(0.03)	1.39	1.36	—	—	—	8.63	18.71	0.94	0.94	(0.42)	135	104	
12-31-2022	19.86	(0.06)	(6.98)	(7.04)	—	(5.55)	(5.55)	7.27	(34.64)	0.93	0.93	(0.50)	128	97	
12-31-2021	26.19	(0.19)	1.58	1.39	—	(7.72)	(7.72)	19.86	3.54	0.92	0.92	(0.71)	215	91	
12-31-2020	18.07	(0.13)	11.50	11.37	—	(3.25)	(3.25)	26.19	65.39	0.93	0.92	(0.61)	234	98	
12-31-2019	15.79	(0.10)	5.44	5.34	—	(3.06)	(3.06)	18.07	34.53	0.93	0.93	(0.54)	168	64	
Series II															
12-31-2023	5.69	(0.04)	1.10	1.06	—	—	—	6.75	18.63	1.14	1.14	(0.62)	63	104	
12-31-2022	17.47	(0.07)	(6.16)	(6.23)	—	(5.55)	(5.55)	5.69	(34.77)	1.13	1.13	(0.70)	60	97	
12-31-2021	23.93	(0.22)	1.48	1.26	—	(7.72)	(7.72)	17.47	3.30	1.12	1.12	(0.92)	105	91	
12-31-2020	16.74	(0.16)	10.60	10.44	—	(3.25)	(3.25)	23.93	65.02	1.13	1.12	(0.81)	120	98	
12-31-2019	14.83	(0.13)	5.10	4.97	—	(3.06)	(3.06)	16.74	34.25	1.13	1.13	(0.74)	86	64	
Series NAV															
12-31-2023	7.63	(0.03)	1.47	1.44	—	—	—	9.07	18.87	0.89	0.89	(0.37)	408	104	
12-31-2022	20.40	(0.06)	(7.16)	(7.22)	—	(5.55)	(5.55)	7.63	(34.61)	0.88	0.88	(0.44)	373	97	
12-31-2021	26.70	(0.18)	1.60	1.42	—	(7.72)	(7.72)	20.40	3.58	0.87	0.87	(0.66)	611	91	
12-31-2020	18.37	(0.12)	11.70	11.58	—	(3.25)	(3.25)	26.70	65.47	0.88	0.87	(0.55)	635	98	
12-31-2019	16.00	(0.09)	5.52	5.43	—	(3.06)	(3.06)	18.37	34.63	0.88	0.88	(0.49)	535	64	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Mid Cap Index Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	18.11	0.23	2.46	2.69	(0.21)	(0.99)	(1.20)	19.60	16.01	0.57	0.46	1.21	883	19						
12-31-2022	24.89	0.25	(3.67)	(3.42)	(0.24)	(3.12)	(3.36)	18.11	(13.43)	0.56	0.45	1.15	844	12						
12-31-2021	21.34	0.19	4.95	5.14	(0.23)	(1.36)	(1.59)	24.89	24.21	0.56	0.45	0.78	1,086	17						
12-31-2020	21.39	0.21	2.19	2.40	(0.32)	(2.13)	(2.45)	21.34	13.22	0.56	0.46	1.10	996	14						
12-31-2019	18.83	0.26	4.36	4.62	(0.24)	(1.82)	(2.06)	21.39	25.59	0.56	0.45	1.22	1,047	15						
Series II																				
12-31-2023	17.98	0.19	2.43	2.62	(0.17)	(0.99)	(1.16)	19.44	15.73	0.77	0.66	1.01	56	19						
12-31-2022	24.73	0.20	(3.63)	(3.43)	(0.20)	(3.12)	(3.32)	17.98	(13.59)	0.76	0.65	0.95	55	12						
12-31-2021	21.21	0.14	4.91	5.05	(0.17)	(1.36)	(1.53)	24.73	23.96	0.76	0.65	0.58	73	17						
12-31-2020	21.28	0.17	2.17	2.34	(0.28)	(2.13)	(2.41)	21.21	12.98	0.76	0.66	0.90	67	14						
12-31-2019	18.73	0.21	4.36	4.57	(0.20)	(1.82)	(2.02)	21.28	25.43	0.76	0.65	1.02	70	15						
Series NAV																				
12-31-2023	18.11	0.24	2.45	2.69	(0.22)	(0.99)	(1.21)	19.59	16.00	0.52	0.41	1.27	273	19						
12-31-2022	24.89	0.26	(3.66)	(3.40)	(0.26)	(3.12)	(3.38)	18.11	(13.39)	0.51	0.40	1.20	235	12						
12-31-2021	21.34	0.21	4.94	5.15	(0.24)	(1.36)	(1.60)	24.89	24.27	0.51	0.40	0.84	297	17						
12-31-2020	21.39	0.22	2.19	2.41	(0.33)	(2.13)	(2.46)	21.34	13.27	0.51	0.41	1.15	242	14						
12-31-2019	18.82	0.27	4.37	4.64	(0.25)	(1.82)	(2.07)	21.39	25.72	0.51	0.40	1.28	228	15						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Mid Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	9.95	0.11	1.44	1.55	(0.12)	(1.51)	(1.63)	9.87	18.52	0.98	0.93	1.04	235	46	
12-31-2022	11.97	0.11	(0.69)	(0.58)	(0.10)	(1.34)	(1.44)	9.95	(4.31)	0.98	0.93	0.94	222	49	
12-31-2021	10.18	0.06	2.42	2.48	(0.12)	(0.57)	(0.69)	11.97	24.34	1.04	0.99	0.48	241	26	
12-31-2020	9.68	0.14	0.73	0.87	(0.15)	(0.22)	(0.37)	10.18	9.60	1.05	1.00	1.55	210	36	
12-31-2019	9.47	0.15	1.54	1.69	(0.11)	(1.37)	(1.48)	9.68	19.54	1.05	1.00	1.50	239	33	
Series II															
12-31-2023	9.96	0.09	1.44	1.53	(0.10)	(1.51)	(1.61)	9.88	18.25	1.18	1.13	0.84	54	46	
12-31-2022	11.98	0.08	(0.69)	(0.61)	(0.07)	(1.34)	(1.41)	9.96	(4.52)	1.18	1.13	0.74	51	49	
12-31-2021	10.19	0.03	2.42	2.45	(0.09)	(0.57)	(0.66)	11.98	24.10	1.24	1.19	0.28	56	26	
12-31-2020	9.69	0.12	0.74	0.86	(0.14)	(0.22)	(0.36)	10.19	9.38	1.25	1.20	1.36	47	36	
12-31-2019	9.49	0.13	1.53	1.66	(0.09)	(1.37)	(1.46)	9.69	19.15	1.25	1.20	1.30	50	33	
Series NAV															
12-31-2023	9.85	0.11	1.44	1.55	(0.13)	(1.51)	(1.64)	9.76	18.65	0.93	0.88	1.09	331	46	
12-31-2022	11.87	0.11	(0.69)	(0.58)	(0.10)	(1.34)	(1.44)	9.85	(4.30)	0.93	0.88	0.98	296	49	
12-31-2021	10.11	0.06	2.39	2.45	(0.12)	(0.57)	(0.69)	11.87	24.26	0.99	0.94	0.53	366	26	
12-31-2020	9.61	0.14	0.74	0.88	(0.16)	(0.22)	(0.38)	10.11	9.72	1.00	0.95	1.59	345	36	
12-31-2019	9.42	0.15	1.53	1.68	(0.12)	(1.37)	(1.49)	9.61	19.49	1.00	0.95	1.56	381	33	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Money Market Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	1.00	0.047	— ³	0.047	(0.047)	—	(0.047)	1.00	4.76	0.44	0.33	4.66	1,780	—	
12-31-2022	1.00	0.013	— ³	0.013	(0.013)	—	(0.013)	1.00	1.29	0.44	0.33	1.33	1,778	—	
12-31-2021	1.00	— ³	— ³	— ³	— ³	—	— ³	1.00	— ⁴	0.44	0.07	—	1,522	—	
12-31-2020	1.00	0.003	— ³	0.003	(0.003)	—	(0.003)	1.00	0.31	0.44	0.24	0.26	1,835	—	
12-31-2019	1.00	0.019	— ³	0.019	(0.019)	—	(0.019)	1.00	1.93	0.46	0.33	1.91	1,420	—	
Series II															
12-31-2023	1.00	0.044	0.001	0.045	(0.045)	—	(0.045)	1.00	4.55	0.64	0.53	4.44	57	—	
12-31-2022	1.00	0.010	0.001	0.011	(0.011)	—	(0.011)	1.00	1.07	0.64	0.53	1.00	67	—	
12-31-2021	1.00	— ³	— ³	— ³	— ³	—	— ³	1.00	— ⁴	0.64	0.07	—	79	—	
12-31-2020	1.00	0.003	(0.001)	0.002	(0.002)	—	(0.002)	1.00	0.24	0.64	0.32	0.26	100	—	
12-31-2019	1.00	0.017	— ³	0.017	(0.017)	—	(0.017)	1.00	1.73	0.66	0.53	1.73	120	—	
Series NAV															
12-31-2023	1.00	0.047	— ³	0.047	(0.047)	—	(0.047)	1.00	4.81	0.39	0.28	4.70	451	—	
12-31-2022	1.00	0.014	(0.001)	0.013	(0.013)	—	(0.013)	1.00	1.34	0.39	0.28	1.36	484	—	
12-31-2021	1.00	— ³	— ³	— ³	— ³	—	— ³	1.00	— ⁴	0.39	0.07	—	393	—	
12-31-2020	1.00	0.003	— ³	0.003	(0.003)	—	(0.003)	1.00	0.33	0.39	0.22	0.31	467	—	
12-31-2019	1.00	0.020	— ³	0.020	(0.020)	—	(0.020)	1.00	1.98	0.41	0.28	1.97	390	—	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.0005 per share.

4 Less than 0.005%.

Opportunistic Fixed Income Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	10.48	0.58	0.26	0.84	(0.29)	—	(0.29)	11.03	8.23	0.93	0.82	5.35	21	89						
12-31-2022	12.31	0.47	(1.87)	(1.40)	(0.30)	(0.13)	(0.43)	10.48	(11.12)	0.90	0.82	4.31	21	119						
12-31-2021	13.47	0.38	(0.66)	(0.28)	(0.37)	(0.51)	(0.88)	12.31	(2.02)	0.85	0.82	2.90	29	126						
12-31-2020	12.30	0.30	1.39	1.69	(0.52)	—	(0.52)	13.47	13.79	0.92 ³	0.85 ³	2.34	32	326 ⁴						
12-31-2019	12.34	0.28	0.50	0.78	(0.82)	—	(0.82)	12.30	6.38	1.16 ³	1.12 ³	2.23	31	45						
Series II																				
12-31-2023	10.29	0.54	0.27	0.81	(0.27)	—	(0.27)	10.83	7.97	1.13	1.02	5.13	42	89						
12-31-2022	12.10	0.44	(1.84)	(1.40)	(0.28)	(0.13)	(0.41)	10.29	(11.26)	1.10	1.02	4.11	43	119						
12-31-2021	13.25	0.35	(0.64)	(0.29)	(0.35)	(0.51)	(0.86)	12.10	(2.26)	1.05	1.02	2.70	56	126						
12-31-2020	12.11	0.27	1.37	1.64	(0.50)	—	(0.50)	13.25	13.63	1.12 ³	1.05 ³	2.11	59	326 ⁴						
12-31-2019	12.17	0.25	0.49	0.74	(0.80)	—	(0.80)	12.11	6.08	1.36 ³	1.32 ³	2.03	60	45						
Series NAV																				
12-31-2023	10.43	0.58	0.26	0.84	(0.29)	—	(0.29)	10.98	8.21	0.88	0.77	5.40	98	89						
12-31-2022	12.25	0.48	(1.86)	(1.38)	(0.31)	(0.13)	(0.44)	10.43	(10.96)	0.85	0.77	4.38	96	119						
12-31-2021	13.41	0.39	(0.66)	(0.27)	(0.38)	(0.51)	(0.89)	12.25	(2.06)	0.80	0.77	2.95	126	126						
12-31-2020	12.25	0.30	1.39	1.69	(0.53)	—	(0.53)	13.41	13.90	0.87 ³	0.80 ³	2.35	106	326 ⁴						
12-31-2019	12.30	0.28	0.50	0.78	(0.83)	—	(0.83)	12.25	6.37	1.11 ³	1.07 ³	2.28	107	45						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Includes interest expense of 0.01% and 0.25% for the year ended December 31, 2020 and the year ended December 31, 2019, respectively.

4 Increase in portfolio turnover rate resulted from repositioning of the portfolio during the period in accordance with investment policy changes approved by the Board of Trustees.

Real Estate Securities Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	17.44	0.42	1.71	2.13	(0.40)	(0.32)	(0.72)	18.85	13.02	0.82	0.81	2.36	52	106	
12-31-2022	27.47	0.35	(8.23)	(7.88)	(0.25)	(1.90)	(2.15)	17.44	(28.51)	0.81	0.80	1.60	51	93	
12-31-2021	18.97	0.31	8.54	8.85	(0.35)	—	(0.35)	27.47	46.79	0.80	0.79	1.33	79	63	
12-31-2020	23.55	0.40	(1.97)	(1.57)	(0.43)	(2.58)	(3.01)	18.97	(5.64)	0.82	0.82	1.96	61	180	
12-31-2019	18.72	0.42	5.07	5.49	(0.48)	(0.18)	(0.66)	23.55	29.40	0.81	0.81	1.90	73	129	
Series II															
12-31-2023	17.43	0.38	1.72	2.10	(0.37)	(0.32)	(0.69)	18.84	12.80	1.02	1.01	2.13	25	106	
12-31-2022	27.44	0.31	(8.22)	(7.91)	(0.20)	(1.90)	(2.10)	17.43	(28.64)	1.01	1.00	1.40	28	93	
12-31-2021	18.96	0.26	8.52	8.78	(0.30)	—	(0.30)	27.44	46.46	1.00	0.99	1.14	44	63	
12-31-2020	23.53	0.36	(1.96)	(1.60)	(0.39)	(2.58)	(2.97)	18.96	(5.80)	1.02	1.02	1.75	32	180	
12-31-2019	18.72	0.38	5.05	5.43	(0.44)	(0.18)	(0.62)	23.53	29.08	1.01	1.01	1.70	40	129	
Series NAV															
12-31-2023	17.30	0.43	1.69	2.12	(0.41)	(0.32)	(0.73)	18.69	13.06	0.77	0.76	2.42	216	106	
12-31-2022	27.28	0.36	(8.18)	(7.82)	(0.26)	(1.90)	(2.16)	17.30	(28.45)	0.76	0.75	1.66	208	93	
12-31-2021	18.84	0.32	8.48	8.80	(0.36)	—	(0.36)	27.28	46.80	0.75	0.74	1.39	309	63	
12-31-2020	23.41	0.41	(1.96)	(1.55)	(0.44)	(2.58)	(3.02)	18.84	(5.58)	0.77	0.77	2.01	221	180	
12-31-2019	18.61	0.43	5.04	5.47	(0.49)	(0.18)	(0.67)	23.41	29.47	0.76	0.76	1.96	257	129	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Science & Technology Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	11.65	(0.04)	6.41	6.37	—	—	—	18.02	54.68	1.05	1.00	(0.27)	718	208
12-31-2022	36.59	(0.15)	(13.09)	(13.24)	—	(11.70)	(11.70)	11.65	(35.67)	1.09	1.04	(0.66)	473	116
12-31-2021	41.87	(0.25)	4.10	3.85	—	(9.13)	(9.13)	36.59	8.53	1.11	1.06	(0.58)	834	87
12-31-2020	29.43	(0.06) ³	16.39	16.33	—	(3.89)	(3.89)	41.87	57.46	1.11	1.07	(0.16) ³	938	114
12-31-2019	25.80	0.01	9.31	9.32	(0.03)	(5.66)	(5.69)	29.43	38.06	1.13	1.08	0.04	662	87
Series II														
12-31-2023	9.62	(0.06)	5.28	5.22	—	—	—	14.84	54.37	1.25	1.20	(0.47)	61	208
12-31-2022	33.48	(0.17)	(11.99)	(12.16)	—	(11.70)	(11.70)	9.62	(35.76)	1.29	1.24	(0.86)	43	116
12-31-2021	39.08	(0.31)	3.84	3.53	—	(9.13)	(9.13)	33.48	8.31	1.31	1.26	(0.78)	79	87
12-31-2020	27.71	(0.11) ³	15.37	15.26	—	(3.89)	(3.89)	39.08	57.15	1.31	1.27	(0.35) ³	84	114
12-31-2019	24.58	(0.05)	8.84	8.79	—	(5.66)	(5.66)	27.71	37.74	1.33	1.28	(0.17)	59	87
Series NAV														
12-31-2023	12.15	(0.04)	6.69	6.65	—	—	—	18.80	54.73	1.00	0.95	(0.22)	160	208
12-31-2022	37.35	(0.14)	(13.36)	(13.50)	—	(11.70)	(11.70)	12.15	(35.64)	1.04	0.99	(0.60)	105	116
12-31-2021	42.55	(0.23)	4.16	3.93	—	(9.13)	(9.13)	37.35	8.58	1.06	1.01	(0.53)	158	87
12-31-2020	29.84	(0.05) ³	16.65	16.60	—	(3.89)	(3.89)	42.55	57.58	1.06	1.02	(0.14) ³	145	114
12-31-2019	26.10	0.03	9.42	9.45	(0.05)	(5.66)	(5.71)	29.84	38.09	1.08	1.03	0.10	89	87

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Net investment income (loss) per share and ratio of net investment income (loss) to average net assets reflect a special dividend received by the portfolio, which amounted to \$0.18 and 0.51%, respectively.

Select Bond Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	11.46	0.39	0.28	0.67	(0.38)	—	(0.38)	11.75	6.10	0.66	0.63	3.36	139	146						
12-31-2022	13.94	0.32	(2.32)	(2.00)	(0.38)	(0.10)	(0.48)	11.46	(14.20)	0.66	0.62	2.56	135	120						
12-31-2021	14.59	0.28	(0.45)	(0.17)	(0.41)	(0.07)	(0.48)	13.94	(1.20)	0.65	0.61	1.94	177	132						
12-31-2020	13.79	0.34	0.91	1.25	(0.45)	—	(0.45)	14.59	9.08	0.65	0.62	2.36	179	118						
12-31-2019	12.99	0.35	0.81	1.16	(0.36)	—	(0.36)	13.79	8.95	0.65	0.62	2.55	176	137						
Series II																				
12-31-2023	11.48	0.37	0.27	0.64	(0.35)	—	(0.35)	11.77	5.88	0.86	0.83	3.16	390	146						
12-31-2022	13.96	0.30	(2.32)	(2.02)	(0.36)	(0.10)	(0.46)	11.48	(14.38)	0.86	0.82	2.40	413	120						
12-31-2021	14.61	0.25	(0.45)	(0.20)	(0.38)	(0.07)	(0.45)	13.96	(1.39)	0.85	0.81	1.74	415	132						
12-31-2020	13.81	0.31	0.91	1.22	(0.42)	—	(0.42)	14.61	8.86	0.85	0.82	2.18	437	118						
12-31-2019	13.01	0.32	0.82	1.14	(0.34)	—	(0.34)	13.81	8.73	0.85	0.82	2.35	423	137						
Series NAV																				
12-31-2023	11.45	0.39	0.28	0.67	(0.38)	—	(0.38)	11.74	6.15	0.61	0.59	3.40	5,487	146						
12-31-2022	13.93	0.33	(2.32)	(1.99)	(0.39)	(0.10)	(0.49)	11.45	(14.16)	0.61	0.58	2.61	5,411	120						
12-31-2021	14.58	0.28	(0.45)	(0.17)	(0.41)	(0.07)	(0.48)	13.93	(1.15)	0.60	0.57	1.98	7,199	132						
12-31-2020	13.78	0.35	0.90	1.25	(0.45)	—	(0.45)	14.58	9.14	0.60	0.58	2.40	7,212	118						
12-31-2019	12.98	0.35	0.82	1.17	(0.37)	—	(0.37)	13.78	9.01	0.60	0.58	2.60	7,703	137						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Short Term Government Income Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	10.94	0.20	0.22	0.42	(0.18)	—	(0.18)	11.18	3.92	0.73	0.72	1.77	24	108	
12-31-2022	11.88	0.12	(0.89)	(0.77)	(0.17)	—	(0.17)	10.94	(6.48)	0.72	0.71	1.10	25	52	
12-31-2021	12.29	0.13	(0.32)	(0.19)	(0.22)	—	(0.22)	11.88	(1.59)	0.70	0.69	1.04	30	32	
12-31-2020	12.07	0.16	0.27	0.43	(0.21)	—	(0.21)	12.29	3.60	0.71	0.71	1.30	33	38	
12-31-2019	11.87	0.15	0.25	0.40	(0.20)	—	(0.20)	12.07	3.39	0.71	0.71	1.25	36	54	
Series II															
12-31-2023	10.95	0.17	0.22	0.39	(0.16)	—	(0.16)	11.18	3.63	0.93	0.92	1.57	15	108	
12-31-2022	11.89	0.10	(0.89)	(0.79)	(0.15)	—	(0.15)	10.95	(6.67)	0.92	0.91	0.89	17	52	
12-31-2021	12.30	0.10	(0.32)	(0.22)	(0.19)	—	(0.19)	11.89	(1.78)	0.90	0.89	0.84	22	32	
12-31-2020	12.08	0.14	0.27	0.41	(0.19)	—	(0.19)	12.30	3.39	0.91	0.91	1.10	29	38	
12-31-2019	11.88	0.13	0.25	0.38	(0.18)	—	(0.18)	12.08	3.18	0.91	0.91	1.05	23	54	
Series NAV															
12-31-2023	10.94	0.20	0.22	0.42	(0.19)	—	(0.19)	11.17	3.87	0.68	0.67	1.83	131	108	
12-31-2022	11.88	0.13	(0.90)	(0.77)	(0.17)	—	(0.17)	10.94	(6.43)	0.67	0.66	1.15	119	52	
12-31-2021	12.29	0.13	(0.32)	(0.19)	(0.22)	—	(0.22)	11.88	(1.54)	0.65	0.64	1.09	130	32	
12-31-2020	12.07	0.17	0.27	0.44	(0.22)	—	(0.22)	12.29	3.65	0.66	0.66	1.35	131	38	
12-31-2019	11.87	0.16	0.25	0.41	(0.21)	—	(0.21)	12.07	3.44	0.66	0.66	1.30	120	54	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Small Cap Index Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations							Less distributions			Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)	
Series I															
12-31-2023	11.57	0.15	1.69	1.84	(0.15)	(0.18)	(0.33)	13.08	16.49	0.59	0.53	1.21	367	11	
12-31-2022	17.26	0.12	(3.65)	(3.53)	(0.15)	(2.01)	(2.16)	11.57	(20.65)	0.58	0.53	0.88	341	13	
12-31-2021	16.31	0.12	2.27	2.39	(0.10)	(1.34)	(1.44)	17.26	14.49	0.57	0.51	0.67	460	20	
12-31-2020	14.94	0.10	2.50	2.60	(0.20)	(1.03)	(1.23)	16.31	19.29	0.59	0.53	0.74	427	16	
12-31-2019	13.36	0.16	3.01	3.17	(0.15)	(1.44)	(1.59)	14.94	25.04	0.58	0.53	1.11	404	14	
Series II															
12-31-2023	11.47	0.12	1.68	1.80	(0.13)	(0.18)	(0.31)	12.96	16.22	0.79	0.73	1.01	27	11	
12-31-2022	17.13	0.09	(3.62)	(3.53)	(0.12)	(2.01)	(2.13)	11.47	(20.81)	0.78	0.73	0.67	26	13	
12-31-2021	16.20	0.08	2.26	2.34	(0.07)	(1.34)	(1.41)	17.13	14.25	0.77	0.71	0.46	37	20	
12-31-2020	14.85	0.07	2.48	2.55	(0.17)	(1.03)	(1.20)	16.20	19.05	0.79	0.73	0.54	36	16	
12-31-2019	13.29	0.13	2.99	3.12	(0.12)	(1.44)	(1.56)	14.85	24.78	0.78	0.73	0.90	35	14	
Series NAV															
12-31-2023	11.59	0.15	1.70	1.85	(0.16)	(0.18)	(0.34)	13.10	16.52	0.54	0.48	1.26	146	11	
12-31-2022	17.29	0.13	(3.66)	(3.53)	(0.16)	(2.01)	(2.17)	11.59	(20.63)	0.53	0.48	0.92	125	13	
12-31-2021	16.33	0.13	2.28	2.41	(0.11)	(1.34)	(1.45)	17.29	14.59	0.52	0.46	0.73	169	20	
12-31-2020	14.96	0.11	2.49	2.60	(0.20)	(1.03)	(1.23)	16.33	19.32	0.54	0.48	0.78	144	16	
12-31-2019	13.38	0.18	3.00	3.18	(0.16)	(1.44)	(1.60)	14.96	25.07	0.53	0.48	1.19	158	14	

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Small Cap Opportunities Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	25.71	0.16	3.99	4.15	(0.11)	(2.41)	(2.52)	27.34	18.05	1.15	0.89	0.61	85	18						
12-31-2022	33.56	0.11	(3.55)	(3.44)	(0.16)	(4.25)	(4.41)	25.71	(10.07)	1.15	0.89	0.38	78	27						
12-31-2021	26.24	0.19	7.96	8.15	(0.15)	(0.68)	(0.83)	33.56	31.10	1.14	0.91	0.61	95	28						
12-31-2020	25.52	0.13	2.07	2.20	(0.16)	(1.32)	(1.48)	26.24	9.88	1.17	1.00	0.58	81	28						
12-31-2019	22.37	0.14	5.29	5.43	(0.11)	(2.17)	(2.28)	25.52	25.54	1.16	0.98	0.58	83	16						
Series II																				
12-31-2023	24.97	0.10	3.87	3.97	(0.06)	(2.41)	(2.47)	26.47	17.83	1.35	1.09	0.40	29	18						
12-31-2022	32.73	0.05	(3.47)	(3.42)	(0.09)	(4.25)	(4.34)	24.97	(10.24)	1.35	1.09	0.18	28	27						
12-31-2021	25.61	0.12	7.78	7.90	(0.10)	(0.68)	(0.78)	32.73	30.85	1.34	1.11	0.39	35	28						
12-31-2020	24.96	0.08	2.01	2.09	(0.12)	(1.32)	(1.44)	25.61	9.65	1.37	1.20	0.38	30	28						
12-31-2019	21.91	0.09	5.18	5.27	(0.05)	(2.17)	(2.22)	24.96	25.26	1.36	1.18	0.38	31	16						
Series NAV																				
12-31-2023	25.47	0.17	3.95	4.12	(0.12)	(2.41)	(2.53)	27.06	18.12	1.10	0.84	0.66	59	18						
12-31-2022	33.30	0.14	(3.55)	(3.41)	(0.17)	(4.25)	(4.42)	25.47	(10.03)	1.10	0.84	0.48	46	27						
12-31-2021	26.04	0.21	7.90	8.11	(0.17)	(0.68)	(0.85)	33.30	31.16	1.09	0.86	0.67	38	28						
12-31-2020	25.34	0.14	2.06	2.20	(0.18)	(1.32)	(1.50)	26.04	9.92	1.12	0.95	0.63	30	28						
12-31-2019	22.23	0.15	5.25	5.40	(0.12)	(2.17)	(2.29)	25.34	25.60	1.11	0.93	0.62	26	16						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Small Cap Stock Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	5.03	(0.02)	0.83	0.81	—	—	—	5.84	16.10	1.14	1.13	(0.45)	75	41						
12-31-2022	10.26	(0.03)	(3.11)	(3.14)	—	(2.09)	(2.09)	5.03	(31.12)	1.13	1.12	(0.43)	70	86						
12-31-2021	11.92	(0.11)	0.29	0.18	—	(1.84)	(1.84)	10.26	1.20	1.11	1.10	(0.88)	114	107						
12-31-2020	8.88	(0.06)	4.37	4.31	—	(1.27)	(1.27)	11.92	51.54	1.12	1.11	(0.65)	137	113						
12-31-2019	9.08	(0.05)	3.21	3.16	—	(3.36)	(3.36)	8.88	38.02	1.13	1.12	(0.51)	98	81						
Series II																				
12-31-2023	4.28	(0.03)	0.71	0.68	—	—	—	4.96	15.89	1.34	1.33	(0.65)	20	41						
12-31-2022	9.19	(0.04)	(2.78)	(2.82)	—	(2.09)	(2.09)	4.28	(31.25)	1.33	1.32	(0.63)	21	86						
12-31-2021	10.88	(0.12)	0.27	0.15	—	(1.84)	(1.84)	9.19	1.06	1.31	1.30	(1.08)	35	107						
12-31-2020	8.21	(0.07)	4.01	3.94	—	(1.27)	(1.27)	10.88	51.23	1.32	1.31	(0.85)	42	113						
12-31-2019	8.61	(0.07)	3.03	2.96	—	(3.36)	(3.36)	8.21	37.74	1.33	1.32	(0.71)	35	81						
Series NAV																				
12-31-2023	5.21	(0.02)	0.87	0.85	—	—	—	6.06	16.31	1.09	1.08	(0.40)	184	41						
12-31-2022	10.52	(0.03)	(3.19)	(3.22)	—	(2.09)	(2.09)	5.21	(31.13)	1.08	1.07	(0.38)	162	86						
12-31-2021	12.17	(0.10)	0.29	0.19	—	(1.84)	(1.84)	10.52	1.27	1.06	1.05	(0.83)	258	107						
12-31-2020	9.04	(0.06)	4.46	4.40	—	(1.27)	(1.27)	12.17	51.62	1.07	1.06	(0.60)	261	113						
12-31-2019	9.19	(0.05)	3.26	3.21	—	(3.36)	(3.36)	9.04	38.10	1.08	1.07	(0.46)	186	81						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Small Cap Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	13.49	0.10	1.53	1.63	(0.05)	(1.25)	(1.30)	13.82	14.01	1.05	1.04	0.77	133	47						
12-31-2022	18.30	0.15	(2.04)	(1.89)	(0.15)	(2.77)	(2.92)	13.49	(10.24)	1.04	1.04	0.93	140	42						
12-31-2021	14.70	0.09	3.75	3.84	(0.09)	(0.15)	(0.24)	18.30	26.19	1.03	1.03	0.53	182	32						
12-31-2020	18.19	0.08	(1.73)	(1.65)	(0.15)	(1.69)	(1.84)	14.70	(6.70)	1.07	1.06	0.57	167	34						
12-31-2019	15.60	0.13	3.82	3.95	(0.10)	(1.26)	(1.36)	18.19	26.52	1.09	1.08	0.75	218	19						
Series II																				
12-31-2023	13.35	0.08	1.52	1.60	(0.03)	(1.25)	(1.28)	13.67	13.85	1.25	1.24	0.57	20	47						
12-31-2022	18.15	0.12	(2.04)	(1.92)	(0.11)	(2.77)	(2.88)	13.35	(10.49)	1.24	1.24	0.73	21	42						
12-31-2021	14.58	0.06	3.72	3.78	(0.06)	(0.15)	(0.21)	18.15	25.97	1.23	1.23	0.34	27	32						
12-31-2020	18.07	0.05	(1.73)	(1.68)	(0.12)	(1.69)	(1.81)	14.58	(6.95)	1.27	1.26	0.37	23	34						
12-31-2019	15.50	0.10	3.80	3.90	(0.07)	(1.26)	(1.33)	18.07	26.33	1.29	1.28	0.56	28	19						
Series NAV																				
12-31-2023	13.41	0.11	1.52	1.63	(0.06)	(1.25)	(1.31)	13.73	14.07	1.00	0.99	0.83	309	47						
12-31-2022	18.22	0.16	(2.04)	(1.88)	(0.16)	(2.77)	(2.93)	13.41	(10.25)	0.99	0.99	0.98	271	42						
12-31-2021	14.63	0.10	3.74	3.84	(0.10)	(0.15)	(0.25)	18.22	26.30	0.98	0.98	0.59	344	32						
12-31-2020	18.12	0.09	(1.73)	(1.64)	(0.16)	(1.69)	(1.85)	14.63	(6.68)	1.02	1.01	0.64	298	34						
12-31-2019	15.54	0.14	3.81	3.95	(0.11)	(1.26)	(1.37)	18.12	26.62	1.04	1.03	0.81	271	19						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Small Company Value Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations			Less distributions				Ratios to average net assets						
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)
Series I														
12-31-2023	8.79	0.05	1.00	1.05	(0.02)	(0.66)	(0.68)	9.16	13.49	1.21	1.14	0.57	43	28
12-31-2022	12.59	0.03	(2.37)	(2.34)	—	(1.46)	(1.46)	8.79	(18.73)	1.20	1.13	0.25	43	26
12-31-2021	10.55	— ³	2.39	2.39	(0.04)	(0.31)	(0.35)	12.59	22.70	1.18	1.11	(0.02)	58	23
12-31-2020	10.36	0.03	0.80	0.83	(0.03)	(0.61)	(0.64)	10.55	9.24	1.19	1.13	0.38	54	30
12-31-2019	16.62	0.04	3.25	3.29	(0.17)	(9.38)	(9.55)	10.36	25.53	1.19	1.13	0.25	56	30
Series II														
12-31-2023	8.27	0.03	0.95	0.98	(0.01)	(0.66)	(0.67)	8.58	13.38	1.41	1.34	0.37	32	28
12-31-2022	11.98	— ³	(2.25)	(2.25)	—	(1.46)	(1.46)	8.27	(18.95)	1.40	1.33	0.05	32	26
12-31-2021	10.05	(0.03)	2.29	2.26	(0.02)	(0.31)	(0.33)	11.98	22.51	1.38	1.31	(0.22)	44	23
12-31-2020	9.90	0.02	0.75	0.77	(0.01)	(0.61)	(0.62)	10.05	9.07	1.39	1.33	0.18	43	30
12-31-2019	16.25	0.01	3.15	3.16	(0.13)	(9.38)	(9.51)	9.90	25.22	1.39	1.33	0.05	45	30
Series NAV														
12-31-2023	8.73	0.06	0.99	1.05	(0.03)	(0.66)	(0.69)	9.09	13.52	1.16	1.09	0.62	55	28
12-31-2022	12.51	0.03	(2.35)	(2.32)	—	(1.46)	(1.46)	8.73	(18.70)	1.15	1.08	0.30	55	26
12-31-2021	10.48	— ³	2.39	2.39	(0.05)	(0.31)	(0.36)	12.51	22.81	1.13	1.06	0.04	68	23
12-31-2020	10.30	0.04	0.78	0.82	(0.03)	(0.61)	(0.64)	10.48	9.25	1.14	1.08	0.42	58	30
12-31-2019	16.57	0.04	3.25	3.29	(0.18)	(9.38)	(9.56)	10.30	25.65	1.14	1.08	0.30	46	30

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

3 Less than \$0.005 per share.

Strategic Equity Allocation Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series NAV																				
12-31-2023	15.20	0.27	2.88	3.15	(0.27)	(0.99)	(1.26)	17.09	21.86	0.68	0.54	1.65	7,219	4						
12-31-2022	22.63	0.30	(4.26)	(3.96)	(0.30)	(3.17)	(3.47)	15.20	(16.98)	0.67	0.53	1.58	6,905	4						
12-31-2021	20.98	0.29	4.08	4.37	(0.42)	(2.30)	(2.72)	22.63	21.15	0.66	0.53	1.27	9,291	6						
12-31-2020	20.30	0.31	2.34	2.65	(0.40)	(1.57)	(1.97)	20.98	14.34	0.67	0.53	1.61	9,383	7						
12-31-2019	17.13	0.38	4.13	4.51	(0.36)	(0.98)	(1.34)	20.30	27.15	0.66	0.53	1.95	9,774	4						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Strategic Income Opportunities Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	12.18	0.46	0.42	0.88	(0.44)	—	(0.44)	12.62	7.37	0.80	0.79	3.71	234	39						
12-31-2022	14.07	0.38	(1.81)	(1.43)	(0.46)	—	(0.46)	12.18	(10.06)	0.78	0.77	2.97	238	48						
12-31-2021	14.44	0.37	(0.25)	0.12	(0.49)	—	(0.49)	14.07	0.90	0.76	0.75	2.56	301	61						
12-31-2020	13.52	0.35	0.80	1.15	(0.23)	—	(0.23)	14.44	8.59	0.76	0.76	2.54	333	73						
12-31-2019	12.53	0.40	0.96	1.36	(0.37)	—	(0.37)	13.52	10.91	0.76	0.76	3.03	361	95						
Series II																				
12-31-2023	12.22	0.44	0.41	0.85	(0.41)	—	(0.41)	12.66	7.23	1.00	0.99	3.52	58	39						
12-31-2022	14.11	0.36	(1.82)	(1.46)	(0.43)	—	(0.43)	12.22	(10.30)	0.98	0.97	2.80	52	48						
12-31-2021	14.47	0.34	(0.24)	0.10	(0.46)	—	(0.46)	14.11	0.70	0.96	0.95	2.36	51	61						
12-31-2020	13.56	0.32	0.80	1.12	(0.21)	—	(0.21)	14.47	8.36	0.96	0.96	2.34	38	73						
12-31-2019	12.56	0.38	0.97	1.35	(0.35)	—	(0.35)	13.56	10.75	0.96	0.96	2.83	36	95						
Series NAV																				
12-31-2023	12.14	0.47	0.41	0.88	(0.44)	—	(0.44)	12.58	7.53	0.75	0.74	3.77	93	39						
12-31-2022	14.03	0.39	(1.82)	(1.43)	(0.46)	—	(0.46)	12.14	(10.05)	0.73	0.72	3.03	84	48						
12-31-2021	14.39	0.38	(0.24)	0.14	(0.50)	—	(0.50)	14.03	0.95	0.71	0.70	2.61	96	61						
12-31-2020	13.48	0.35	0.80	1.15	(0.24)	—	(0.24)	14.39	8.60	0.71	0.71	2.59	87	73						
12-31-2019	12.49	0.41	0.96	1.37	(0.38)	—	(0.38)	13.48	11.00	0.71	0.71	3.08	80	95						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Total Bond Market Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	8.78	0.27	0.18	0.45	(0.24)	—	(0.24)	8.99	5.35	0.57	0.30	3.08	299	10						
12-31-2022	10.45	0.22	(1.64)	(1.42)	(0.25)	—	(0.25)	8.78	(13.49)	0.57	0.30	2.29	271	38						
12-31-2021	10.89	0.17	(0.37)	(0.20)	(0.24)	—	(0.24)	10.45	(1.81)	0.57	0.30	1.58	336	32						
12-31-2020	10.39	0.21	0.54	0.75	(0.25)	—	(0.25)	10.89	7.23	0.57	0.30	1.93	389	40						
12-31-2019	9.82	0.26	0.55	0.81	(0.24)	—	(0.24)	10.39	8.24	0.57	0.30	2.49	311	36						
Series II																				
12-31-2023	8.80	0.26	0.16	0.42	(0.22)	—	(0.22)	9.00	5.02	0.77	0.50	2.88	48	10						
12-31-2022	10.46	0.20	(1.63)	(1.43)	(0.23)	—	(0.23)	8.80	(13.58)	0.77	0.50	2.08	49	38						
12-31-2021	10.91	0.15	(0.38)	(0.23)	(0.22)	—	(0.22)	10.46	(2.10)	0.77	0.50	1.38	62	32						
12-31-2020	10.40	0.19	0.55	0.74	(0.23)	—	(0.23)	10.91	7.11	0.77	0.50	1.73	81	40						
12-31-2019	9.83	0.24	0.55	0.79	(0.22)	—	(0.22)	10.40	8.02	0.77	0.50	2.29	57	36						
Series NAV																				
12-31-2023	8.78	0.28	0.16	0.44	(0.24)	—	(0.24)	8.98	5.29	0.52	0.25	3.14	594	10						
12-31-2022	10.44	0.22	(1.62)	(1.40)	(0.26)	—	(0.26)	8.78	(13.36)	0.52	0.25	2.39	542	38						
12-31-2021	10.89	0.17	(0.37)	(0.20)	(0.25)	—	(0.25)	10.44	(1.86)	0.52	0.25	1.62	350	32						
12-31-2020	10.38	0.22	0.54	0.76	(0.25)	—	(0.25)	10.89	7.39	0.52	0.25	1.99	329	40						
12-31-2019	9.81	0.26	0.55	0.81	(0.24)	—	(0.24)	10.38	8.30	0.52	0.25	2.54	271	36						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Total Stock Market Index Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	20.82	0.27	4.82	5.09	(0.25)	(1.37)	(1.62)	24.29	25.53	0.58	0.50	1.18	507	2						
12-31-2022	30.88	0.27	(6.54)	(6.27)	(0.28)	(3.51)	(3.79)	20.82	(20.41)	0.57	0.49	1.06	442	1						
12-31-2021	26.26	0.26	6.12	6.38	(0.33)	(1.43)	(1.76)	30.88	24.45	0.56	0.48	0.87	629	8						
12-31-2020	24.04	0.34	4.49	4.83	(0.44)	(2.17)	(2.61)	26.26	21.45	0.58	0.50	1.42	554	2						
12-31-2019	20.22	0.38	5.42	5.80	(0.37)	(1.61)	(1.98)	24.04	29.63	0.58	0.50	1.67	530	3						
Series II																				
12-31-2023	20.70	0.22	4.79	5.01	(0.21)	(1.37)	(1.58)	24.13	25.25	0.78	0.70	0.98	45	2						
12-31-2022	30.71	0.22	(6.50)	(6.28)	(0.22)	(3.51)	(3.73)	20.70	(20.54)	0.77	0.69	0.86	38	1						
12-31-2021	26.13	0.20	6.08	6.28	(0.27)	(1.43)	(1.70)	30.71	24.19	0.76	0.68	0.67	53	8						
12-31-2020	23.94	0.29	4.46	4.75	(0.39)	(2.17)	(2.56)	26.13	21.19	0.78	0.70	1.22	46	2						
12-31-2019	20.14	0.34	5.39	5.73	(0.32)	(1.61)	(1.93)	23.94	29.40	0.78	0.70	1.48	42	3						
Series NAV																				
12-31-2023	20.82	0.28	4.83	5.11	(0.27)	(1.37)	(1.64)	24.29	25.58	0.53	0.45	1.23	253	2						
12-31-2022	30.87	0.28	(6.53)	(6.25)	(0.29)	(3.51)	(3.80)	20.82	(20.34)	0.52	0.44	1.11	195	1						
12-31-2021	26.25	0.27	6.12	6.39	(0.34)	(1.43)	(1.77)	30.87	24.51	0.51	0.43	0.92	260	8						
12-31-2020	24.03	0.35	4.49	4.84	(0.45)	(2.17)	(2.62)	26.25	21.50	0.53	0.45	1.47	216	2						
12-31-2019	20.21	0.40	5.41	5.81	(0.38)	(1.61)	(1.99)	24.03	29.70	0.53	0.45	1.74	185	3						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

Ultra Short Term Bond Trust

Per share operating performance for a share outstanding throughout each period

Ratios and supplemental data

Period ended	Income (loss) from investment operations								Less distributions							Ratios to average net assets				
	Net asset value, beginning of period (\$)	Net investment income (loss) (\$) ¹	Net realized and unrealized gain (loss) on investments (\$)	Total from investment operations (\$)	From net investment income (\$)	From net realized gain (\$)	Total distributions (\$)	Net asset value, end of period (\$)	Total return (%) ²	Expenses before reductions (%)	Expenses including reductions (%)	Net investment income (loss) (%)	Net assets, end of period (in thousands)	Portfolio turnover (%)						
Series I																				
12-31-2023	10.93	0.33	0.17	0.50	(0.32)	—	(0.32)	11.11	4.60	0.68	0.61	2.99	12	41						
12-31-2022	11.19	0.10	(0.20)	(0.10)	(0.16)	—	(0.16)	10.93	(0.84)	0.67	0.61	0.94	10	54						
12-31-2021	11.46	0.04	(0.09)	(0.05)	(0.22)	—	(0.22)	11.19	(0.46)	0.67	0.60	0.34	11	47						
12-31-2020	11.51	0.14	0.03	0.17	(0.22)	—	(0.22)	11.46	1.47	0.67	0.60	1.21	15	71						
12-31-2019	11.37	0.23	0.12	0.35	(0.21)	—	(0.21)	11.51	3.12	0.67	0.62	2.02	12	64						
Series II																				
12-31-2023	10.93	0.31	0.17	0.48	(0.30)	—	(0.30)	11.11	4.41	0.88	0.81	2.77	200	41						
12-31-2022	11.19	0.09	(0.21)	(0.12)	(0.14)	—	(0.14)	10.93	(1.04)	0.87	0.81	0.77	228	54						
12-31-2021	11.46	0.02	(0.10)	(0.08)	(0.19)	—	(0.19)	11.19	(0.66)	0.87	0.80	0.15	197	47						
12-31-2020	11.51	0.12	0.03	0.15	(0.20)	—	(0.20)	11.46	1.28	0.87	0.80	1.02	255	71						
12-31-2019	11.37	0.21	0.12	0.33	(0.19)	—	(0.19)	11.51	2.91	0.87	0.82	1.82	234	64						
Series NAV																				
12-31-2023	10.93	0.34	0.17	0.51	(0.32)	—	(0.32)	11.12	4.74	0.63	0.56	3.04	38	41						
12-31-2022	11.20	0.11	(0.21)	(0.10)	(0.17)	—	(0.17)	10.93	(0.88)	0.62	0.56	0.97	35	54						
12-31-2021	11.47	0.04	(0.09)	(0.05)	(0.22)	—	(0.22)	11.20	(0.41)	0.62	0.55	0.38	38	47						
12-31-2020	11.51	0.15	0.04	0.19	(0.23)	—	(0.23)	11.47	1.61	0.62	0.55	1.27	34	71						
12-31-2019	11.38	0.24	0.11	0.35	(0.22)	—	(0.22)	11.51	3.08	0.62	0.57	2.07	31	64						

1 Based on average daily shares outstanding.

2 Total returns exclude insurance-related fees and expenses and would have been lower had certain expenses not been reduced during the applicable periods.

APPENDIX A — SCHEDULE OF MANAGEMENT FEES

Set forth below is the schedule of the annual percentage rates of the management fees for the funds. For certain funds the advisory or management fee for the fund is calculated by applying to the net assets of the fund an annual fee rate, which is determined based on the application of the annual percentage rates for the fund to the “Aggregate Net Assets” of the fund (together with the net assets of any other applicable fund identified in the advisory agreement).

Fund	APR	Advisory Fee Breakpoint
500 Index Trust	0.470%	— first \$500 million; and
	0.460%	— excess over \$500 million.
Active Bond Trust	0.600%	— first \$2.5 billion;
	0.575%	— next \$2.5 billion; and
	0.550%	— excess over \$5 billion.
Blue Chip Growth Trust	0.780%	— first \$500 million*;
	0.775%	— next \$500 million**;
	0.740%	— next \$2 billion***; and
	0.725%	— excess over \$3 billion. [†]
		* When Aggregate Net Assets exceed \$500 million on any day, the annual rate of advisory fee is 0.775% on the first \$500 million of Aggregate Net Assets.
		** When Aggregate Net Assets exceed \$1 billion on any day, the annual rate of advisory fee is 0.750% on the first \$1 billion of Aggregate Net Assets.
		*** When Aggregate Net Assets exceed \$2 billion on any day, the annual rate of advisory fee is 0.740% on the first \$1 billion of Aggregate Net Assets.
		[†] The fee schedule above became effective on April 1, 2023.
Capital Appreciation Trust	0.800%	— first \$500 million;
	0.700%	— next \$500 million; and
	0.670%	— excess over \$1 billion.
Capital Appreciation Value Trust		If net assets are less than \$500 million, the following fee schedule shall apply:
	0.950%	— first \$250 million; and
	0.850%	— excess over \$250 million.
		If net assets equal or exceed \$500 million but are less than \$2 billion, the following fee schedule shall apply:
	0.850%	— first \$1 billion; and
	0.800%	— excess over \$1 billion.
	If net assets equal or exceed \$2 billion but are less than \$3 billion, the following fee schedule shall apply:	
	0.850%	— first \$500 million; and
	0.800%	— excess over \$500 million.
		If net assets equal or exceed \$3 billion, the following fee schedule shall apply:
	0.800%	— all asset levels.
Core Bond Trust	0.690%	— first \$200 million;
	0.640%	— next \$200 million;
	0.570%	— next \$600 million;
	0.560%	— next \$1 billion; and
	0.550%	— excess over \$2 billion.
Disciplined Value International Trust	0.750%	— first \$500 million;
	0.720%	— next \$500 million;
	0.690%	— next \$1 billion;

Fund	APR	Advisory Fee Breakpoint
	0.670%	— next \$1 billion;
	0.660%	— next \$2 billion; and
	0.650%	— excess over \$5 billion.†
		†The fee schedule above became effective on April 1, 2023.
Emerging Markets Value Trust	0.870%	— first \$100 million; and
	0.820%	— excess over \$100 million.
Equity Income Trust	0.800%	— first \$100 million;
	0.775%	— between \$100 million and \$200 million;*
	0.750%	— between \$200 million and \$500 million;**
	0.725%	— between \$500 million and \$1 billion;***
	0.725%	— between \$1 billion and \$1.5 billion;****
	0.700%	— between \$1.5 billion and \$2 billion;*****
	0.695%	— between \$2 billion and \$3 billion;*****
	0.690%	— between \$3 billion and \$4 billion;*****
	0.680%	— between \$4 billion and \$5.5 billion;*****
	0.675%	— between \$5.5 billion and \$7.5 billion; and*****
	0.670%	— excess over \$7.5 billion.
		*When Aggregate Net Assets exceed \$200 million on any day, the annual rate of advisory fee for that day is 0.775% on the first \$200 million of Aggregate Net Assets.
		**When Aggregate Net Assets exceed \$500 million on any day, the annual rate of advisory fee for that day is 0.750% on the first \$500 million of Aggregate Net Assets and 0.725% on the amount above \$500 million.
		***When Aggregate Net Assets exceed \$1 billion on any day, the annual rate of advisory fee for that day is 0.725% on the first \$1 billion of Aggregate Net Assets.
		****When Aggregate Net Assets exceed \$1.5 billion on any day, the annual rate of advisory fee for that day is 0.700% on the first \$1.5 billion of Aggregate Net Assets.
		*****When Aggregate Net Assets exceed \$2 billion on any day, the annual rate of advisory fee for that day is 0.695% on the first \$2 billion of Aggregate Net Assets.
		*****When Aggregate Net Assets exceed \$3 billion on any day, the annual rate of advisory fee for that day is 0.690% on the first \$3 billion of Aggregate Net Assets.
		*****When Aggregate Net Assets exceed \$4 billion on any day, the annual rate of advisory fee for that day is 0.680% on the first \$4 billion of Aggregate Net Assets.
		*****When Aggregate Net Assets exceed \$5.5 billion on any day, the annual rate of advisory fee for that day is 0.675% on the first \$5.5 billion of Aggregate Net Assets.
		*****When Aggregate Net Assets exceed \$7.5 billion on any day, the annual rate of advisory fee for that day is 0.670% on the first \$7.5 billion of Aggregate Net Assets.
Financial Industries Trust	0.800%	— first \$250 million;
	0.775%	— next \$250 million;
	0.750%	— next \$500 million; and
	0.725%	— excess over \$1 billion.
Fundamental All Cap Core Trust	0.675%	— first \$2.5 billion; and

Fund	APR	Advisory Fee Breakpoint
	0.650%	— excess over \$2.5 billion.
Fundamental Large Cap Value Trust	0.700%	— first \$500 million;
	0.650%	— next \$500 million; and
	0.600%	— excess over \$1 billion.
Global Equity Trust	0.800%	— first \$1 billion; and
	0.790%	— excess over \$1 billion.
Health Sciences Trust	1.050%	— first \$500 million;
	1.000%	— next \$250 million;
	0.950%	— excess over \$750 million*;
	0.950%	— next \$250 million;
	0.900%	— next \$500 million; and
	0.900%	— excess over \$1.5 billion**.
		*When Aggregate Net Assets exceed \$750 million on any day, the annual rate of advisory fee for that day is 0.950% on all assets.
		**When Aggregate Net Assets exceed \$1.5 billion on any day, the annual rate of advisory fee for that day is 0.900% on all assets.
High Yield Trust	0.700%	— first \$500 million; and
	0.650%	— excess over \$500 million.
International Equity Index Trust	0.550%	— first \$100 million;
	0.530%	— next \$150 million;
	0.520%	— next \$250 million; and
	0.510%	— excess over \$500 million.
International Small Company Trust	0.800%	— at all asset levels.
Investment Quality Bond Trust	0.600%	— first \$500 million; and
	0.550%	— excess over \$500 million.
Lifestyle Balanced Portfolio		The management fee has two components: (a) a fee on assets invested in funds of JHVIT, JHF II, or JHF III (“Affiliated Funds Assets”)* and (b) a fee on assets not invested in Affiliated Funds Assets (“Other Assets”).
Lifestyle Conservative Portfolio		
Lifestyle Growth Portfolio		
Lifestyle Moderate Portfolio		
(Collectively, the “JHVIT Lifestyle Portfolios”)		*The following JHVIT funds are not included in Affiliated Funds Assets: 500 Index Trust, International Equity Index Trust and Total Bond Market Trust.
		(a) The fee on Affiliated Funds Assets is stated as an annual percentage of the current value of the aggregate net assets of the JHVIT Managed Volatility Portfolios, the JHVIT Lifestyle Portfolios, and the Multimanager Lifestyle Portfolios and Multi-Index Lifestyle Portfolios that are series of JHF II determined in accordance with the following schedule and that rate is applied to the Affiliated Funds Assets of the fund.
	0.050%	— first \$7.5 billion; and
	0.040%	— excess over \$7.5 billion.
		(b) The fee on Other Assets is stated as an annual percentage of the current value of the aggregate net assets of the JHVIT Managed Volatility Portfolios, the JHVIT Lifestyle Portfolios and the Multimanager Lifestyle Portfolios and Multi-Index Lifestyle Portfolios that are series of JHF II determined in accordance with the following schedule and that rate is applied to the Other Assets of the fund.
	0.500%	— first \$7.5 billion; and

Fund	APR	Advisory Fee Breakpoint
Managed Volatility Balanced Portfolio Managed Volatility Conservative Portfolio Managed Volatility Growth Portfolio Managed Volatility Moderate Portfolio (Collectively, the “JHVIT Managed Volatility Portfolios”)	0.490%	— excess over \$7.5 billion. The management fee has two components: (a) a fee on assets invested in funds of JHVIT, JHF II or JHF III (“Affiliated Funds Assets”)* and (b) a fee on assets not invested in Affiliated Funds Assets (“Other Assets”). *The following JHVIT funds are not included in Affiliated Funds Assets: 500 Index Trust, International Equity Index Trust and Total Bond Market Trust. (a) The fee on Affiliated Funds Assets is stated as an annual percentage of the current value of the aggregate net assets of the JHVIT Managed Volatility Portfolios, the JHVIT Lifestyle Portfolios, and the Multimanager Lifestyle Portfolios and Multi-Index Lifestyle Portfolios that are series of JHF II determined in accordance with the following schedule and that rate is applied to the Affiliated Funds Assets of the fund.
	0.050%	— first \$7.5 billion; and
	0.040%	— excess over \$7.5 billion. (b) The fee on Other Assets is stated as an annual percentage of the current value of the aggregate net assets of the JHVIT Managed Volatility Portfolios, the JHVIT Lifestyle Portfolios, and the Multimanager Lifestyle Portfolios and Multi-Index Lifestyle Portfolios that are series of JHF II determined in accordance with the following schedule and that rate is applied to the Other Assets of the fund.
	0.500%	— first \$7.5 billion; and
Mid Cap Growth Trust	0.490%	— excess over \$7.5 billion.
	0.875%	— first \$200 million;
	0.850%	— next \$300 million;
	0.825%	— next \$2.7 billion;
	0.800%	— next \$500 million;
Mid Cap Index Trust	0.775%	— next \$500 million; and
	0.755%	— excess over \$4.2 billion.
	0.490%	— first \$250 million;
Mid Value Trust	0.480%	— next \$250 million; and
	0.460%	— excess over \$500 million.
Money Market Trust	0.950%	— first \$1 billion; and
	0.875%	— excess over \$1 billion*. *When Aggregate Net Assets exceed \$1 billion on any day, the annual rate of advisory fee for that day is 0.875% on all assets.
	0.500%	— first \$500 million;
Opportunistic Fixed Income Trust	0.425%	— next \$250 million;
	0.375%	— next \$250 million;
	0.350%	— next \$500 million;
	0.325%	— next \$500 million;
	0.300%	— next \$500 million; and
	0.275%	— excess over \$2.5 billion.
Real Estate Securities Trust	0.650%	— first \$1 billion; and
	0.625%	— excess over \$1 billion.
Science & Technology Trust	0.700%	— first \$1.5 billion; and
	0.680%	— excess over \$1.5 billion.
	1.050%	— first \$50 million;

Fund	APR	Advisory Fee Breakpoint
	1.025%	— between \$50 million and \$100 million;
	1.000%	— between \$100 million and \$200 million*;
	0.975%	— between \$200 million and \$500 million**;
	0.950%	— between \$500 million and \$1 billion***; and
	0.925%	— excess over \$1 billion.
		*When Aggregate Net Assets exceed \$100 million on any day, the annual rate of advisory fee for that day is 1.000% on the first \$100 million of Aggregate Net Assets.
		**When Aggregate Net Assets exceed \$200 million on any day, the annual rate of advisory fee for that day is 0.975% on the first \$200 million of Aggregate Net Assets.
		***When Aggregate Net Assets exceed \$500 million on any day, the annual rate of advisory fee for that day is 0.950% on the first \$500 million of Aggregate Net Assets.
Select Bond Trust	0.650%	— first \$500 million;
	0.600%	— next \$1 billion;
	0.575%	— next \$1 billion;
	0.550%	— next \$7.5 billion; and
	0.525%	— excess over \$10 billion.
Short Term Government Income Trust	0.570%	— first \$250 million; and
	0.550%	— excess over \$250 million.
Small Cap Index Trust	0.490%	— first \$250 million;
	0.480%	— next \$250 million; and
	0.460%	— excess over \$500 million.
Small Cap Opportunities Trust	1.000%	— first \$500 million;
	0.950%	— next \$500 million;
	0.900%	— next \$1 billion; and
	0.850%	— excess over \$2 billion.
Small Cap Stock Trust	1.050%	— first \$50 million; and
	1.000%	— excess over \$50 million.
Small Cap Value Trust	0.950%	— first \$250 million;
	0.940%	— next \$500 million;
	0.930%	— next \$500 million; and
	0.920%	— excess over \$1.25 billion.
Small Company Value Trust	1.050%	— first \$500 million; and
	1.000%	— excess over \$500 million.
Strategic Equity Allocation Trust	0.675%	— first \$2.5 billion;
	0.650%	— next \$5 billion;
	0.625%	— next \$2.5 billion;
	0.600%	— next \$5 billion;
	0.595%	— next \$10 billion; and
	0.590%	— excess over \$25 billion.
Strategic Income Opportunities Trust	0.700%	— first \$500 million;
	0.650%	— next \$3 billion;
	0.600%	— next \$4 billion;
	0.590%	— next \$4.5 billion; and
	0.575%	— excess over \$12 billion.
Total Bond Market Trust	0.470%	— first \$1.5 billion; and
	0.460%	— excess over \$1.5 billion.
Total Stock Market Index Trust	0.490%	— first \$250 million;

Fund	APR	Advisory Fee Breakpoint
Ultra Short Term Bond Trust	0.480%	— next \$250 million; and
	0.460%	— excess over \$500 million.
	0.550%	— first \$250 million; and
	0.530%	— excess over \$250 million.

For more information

The following documents are available, which offer further information on JHVIT:

Annual/semiannual reports to shareholders

Additional information about a fund's investments is available in the fund's annual and semiannual reports to shareholders. In a fund's annual report, you will find a discussion of the market conditions and investment strategies that significantly affected the fund's performance during its last fiscal year.

As of January 1, 2021, paper copies of the funds' shareholder reports are no longer sent by mail. Instead, the reports are made available on a website, and you will be notified and provided with a link each time a report is posted to the website. You may request to receive paper reports from the insurance company that offers your contract or from your financial intermediary, free of charge, at any time.

Statements of Additional Information (SAIs)

JHVIT offers two SAIs: 1) an SAI containing American Asset Allocation Trust, American Global Growth Trust, American Growth Trust, American Growth-Income Trust, and American International Trust; and 2) an SAI containing the rest of the JHVIT funds. Both SAIs contain more detailed information on all aspects of the funds contained in each SAI. The SAIs include a summary of JHVIT's policy regarding disclosure of portfolio holdings as well as legal and regulatory matters. The current SAIs have been filed with the SEC and are incorporated by reference into (and are legally a part of) this Prospectus.

To obtain a free copy of these documents or request other information

There are several ways you can get a current annual/semiannual report, prospectus, or SAI from John Hancock, request other information, or make inquiries:

Online: johnhancock.com

By mail:

John Hancock Variable Insurance Trust
200 Berkeley Street
Boston, MA 02116

By phone:

John Hancock Variable Annuities: 800-344-1029
John Hancock Variable Life Insurance: 800-732-5543

You can also view or obtain copies of these documents through the SEC:

Online: sec.gov

By email (duplicating fee required): publicinfo@sec.gov



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