

# MFS® VIT II Research International

Available through Pacific Life's Variable Universal Life Insurance Products

## Benchmark

MSCI EAFE NR USD

## Investment Strategy from underlying investment's prospectus

The investment seeks capital appreciation.

The fund normally invests its assets primarily in foreign equity securities, including emerging market equity securities. It may invest the fund's assets in the stocks of companies The advisor believes to have above average earnings growth potential compared to other companies (growth companies), in the stocks of companies The advisor believes are undervalued compared to their perceived worth (value companies), or in a combination of growth and value companies.

## Morningstar Category: Foreign Large Blend

Foreign large-blend portfolios invest in a variety of big international stocks. Most of these portfolios divide their assets among a dozen or more developed markets, including Japan, Britain, France, and Germany. These portfolios primarily invest in stocks that have market caps in the top 70% of each economically integrated market (such as Europe or Asia ex-Japan). The blend style is assigned to portfolios where neither growth nor value characteristics predominate. These portfolios typically will have less than 20% of assets invested in U.S. stocks.

## Fees and Expenses as of 04-30-21

### Initial Class

Prospectus Net Expense Ratio	0.96%
Prospectus Gross Expense Ratio	0.98%

Waiver Data	Type	Exp. Date	%
Initial Class	Contractual	04-30-22	0.02

## Operations

Initial Class Portfolio Inception Date:	05-06-98
Initial Class Separate Acct Start Date:	05-01-20

## Portfolio Manager(s)

Victoria Higley, CFA. Since 2016.	
Camille Lee, CFA. Since 2018.	
Management Company	Massachusetts Financial Services Company
Subadvisor	—

## Morningstar Sustainability

### Morningstar Sustainability Rating as of 05-31-21



Above Average

### Global Category

Out of 6,980 Global Equity Large Cap investments analyzed

### Historical % Rank in Global Category

29

### Historical Sustainability Score as of 05-31-21

21 based on 100% of AUM

### Sustainability Mandate

Yes

The Morningstar Sustainability Score is based on company-level analysis from Sustainalytics. See disclosure for details.

## Performance

	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Initial Class Portfolio Return %	7.55	29.98	10.74	11.92	6.08	6.47
Benchmark Return %	8.83	32.35	8.27	10.28	5.89	—
Category Average %	9.07	33.76	8.50	10.08	5.80	—

	3 Year	5 Year	10 Year	Overall Rating
Initial Class Morningstar Rating™	★★★★★	★★★★★	★★★★	★★★★★
# of Funds in Category	673	579	385	673

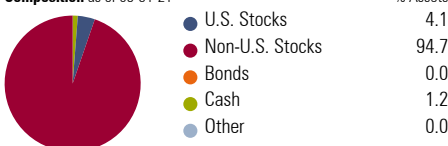
**Performance Disclosure:** The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when redeemed, may be worth more or less than their original cost.

There may be multiple fund share classes listed. Not all share classes that appear in this Report are available in all VUL insurance products. Please refer to your VUL insurance product prospectus for the applicable funds and share classes.

Current performance may be lower or higher than return data quoted herein. For more current information including month-end performance, please call 800-800-7681 or visit [www.pacificlife.com](http://www.pacificlife.com). Please refer to the performance section of the disclosure page for more information.

## Portfolio Analysis

### Composition as of 05-31-21



### Morningstar Equity Style Box™ as of 05-31-21

	% Mkt Cap
Giant	49.93
Large	35.29
Medium	14.16
Small	0.62
Micro	0.00

### Top 10 Holdings as of 05-31-21

	% Assets
Nestle SA	2.96
Roche Holding AG	2.85
Schneider Electric SE	2.50
Linde PLC	2.46
LVMH Moet Hennessy Louis Vuitton SE	2.42
Novo Nordisk A/S B	2.37
AIA Group Ltd	1.85
BNP Paribas	1.84
Diageo PLC	1.77
Hitachi Ltd	1.64
Total Number of Stock Holdings	111
Total Number of Bond Holdings	0
Annual Turnover Ratio %	28.00
Total Fund Assets (\$mil)	515.31

### Morningstar World Regions as of 05-31-21

	% Fund
Americas	6.07
North America	6.07
Latin America	0.00
Greater Europe	57.45
United Kingdom	9.96
Europe Developed	46.98
Europe Emerging	0.00
Africa/Middle East	0.51
Greater Asia	36.49
Japan	20.03
Australasia	2.71
Asia Developed	6.98
Asia Emerging	6.77

## Notes

Variable universal life (VUL) insurance offers the policyowner the flexibility to structure the desired death benefit, as well as the premium payments according to individual needs and objectives. The policyowner also has the ability to allocate these premium payments among a variety of investment options. Pacific Life's VUL insurance products offer a wide variety of variable investment options. Insurance products are issued by Pacific Life Insurance Company in all states except New York, and in New York by Pacific Life & Annuity Company. Product availability and features may vary by state. Portfolio statistics may differ from the annual report.

# MFS® VIT II Research International

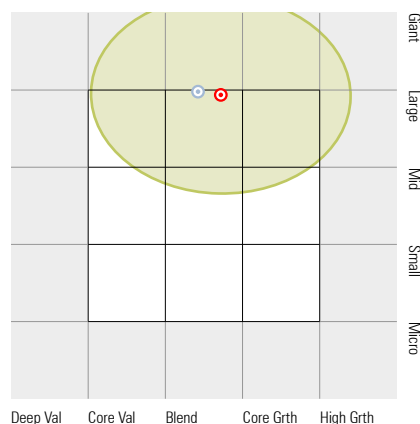
Available through Pacific Life's Variable Universal Life Insurance Products

## Benchmark

MSCI EAFE NR USD

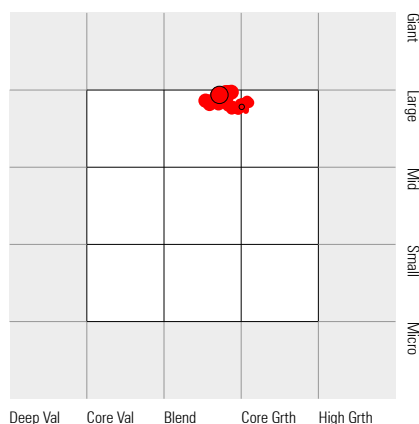
## Style Orientation

Equity Style Ownership Zone as of 05-31-21



Investment Benchmark

Equity Style Trail as of 05-31-21



06-30-2018 05-31-2021

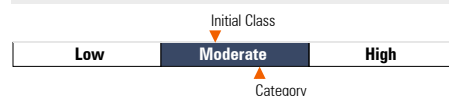
Value Measures as of 05-31-21	Equities	Cat Avg
Price/Prospective Earnings Ratio	19.10	16.82
Price/Prospective Book Ratio	2.16	1.94
Price/Prospective Sales Ratio	2.43	1.64
Price/Prospective Cash Flow Ratio	15.28	10.53
Avg Mkt Cap (\$mil)	44258.82	42980.85

Growth Measures as of 05-31-21	Equities	Cat Avg
Long-Term Earnings %	9.79	11.49
Book Value %	3.26	2.40
Sales %	-1.79	-2.26
Cash Flow %	7.82	6.58
Historical Earnings %	-5.04	-3.85

## Risk Evaluation as of 06-30-21

Initial Class Risk Measures as of 06-30-21	3-Year	5-Year	10-Year
Standard Deviation	16.48	13.68	14.33
Sharpe Ratio	0.63	0.81	0.44
Information Ratio	0.70	0.52	0.06
R-squared	96.38	95.65	95.96
Beta	0.91	0.91	0.93
Alpha	2.80	2.22	0.49

## Volatility Analysis



In the past, this investment has shown a relatively moderate range of price fluctuations relative to other investments. This investment may experience larger or smaller price declines or price increases depending on market conditions. Some of this risk may be offset by owning other investments with different portfolio makeups or investment strategies.

### Best 3 Month Return

37.42%  
(Mar '09 - May '09)

### Worst 3 Month Return

-35.45%  
(Sep '08 - Nov '08)

# Disclosure

**You should carefully consider the risks, charges, limitations, and expenses associated with a variable life insurance policy, as well as the risks, charges, expenses, and investment goals/objectives of the underlying investment options. This fact sheet is authorized for distribution only when preceded or accompanied by the variable life insurance product prospectus. Contact your life insurance producer or visit [www.PacificLife.com](http://www.PacificLife.com) for more information, including product and underlying fund prospectuses that contain more complete information about Pacific Life and a variable universal life insurance policy. Read them carefully before investing or sending money.**

Variable Universal Life Insurance generally requires additional premium payments after the initial premium. If either no premiums are paid, or subsequent premiums are insufficient to continue coverage, it is possible that coverage will expire. Life insurance is subject to underwriting and approval of the application and will incur monthly policy charges.

Each variable investment option invests in a corresponding portfolio of the American Century Variable Portfolios, Inc., American Funds Insurance Series® Funds, BNY Mellon Variable Investment Fund, BlackRock® Variable Series Funds, Inc., DFA Investment Dimensions Group Inc., Fidelity® Variable Insurance Products Funds, Franklin Templeton Variable Insurance Products Trust, Invesco Variable Insurance Funds, Ivy Variable Insurance Portfolios, Janus Aspen Series, Lazard Retirement Series, Inc., Legg Mason Partners Variable Equity Trust, Legg Mason Partners Variable Income Trust, Lord Abbett Series Fund, Inc., MFS® Variable Insurance Trust, M Fund Inc., Neuberger Berman Advisers Management Trust, Pacific Select Fund, PIMCO Variable Insurance Trust, Royce Capital Fund, State Street Variable Insurance Series Funds, Inc., T. Rowe Price Equity Series, Inc., VanEck VIP Trust, and Vanguard Variable Insurance Fund.

Although some funds may have names or investment goals/objectives that resemble retail mutual funds managed by the fund manager, these funds will not have the same underlying holdings or performance as the retail mutual funds' goals/objectives.

Expense ratios shown were determined based on average net assets as of the fiscal year ended 12-31, unless otherwise indicated. Certain portfolios' net expenses reflect a contractual advisory fee waiver and/or expense cap through a specified period. Please see the applicable portfolio's prospectus for detailed information.

## Performance

The Total Returns listed in this report include only fund level fees and expenses, reinvestment of dividends, and distributions. Current performance may be lower or higher than the performance reflected in this Report. Returns do not include any policy charges. Performance would be significantly lower after all policy fees and expenses are deducted. The cost of life insurance and benefits provided through the policy is deducted monthly in the form of policy charges (which may include, but are not limited to, Cost of Insurance charges, administrative charges, mortality and

expense risk charges, coverage charges, and any rider charges). Since policy charges vary by product, you are encouraged to ask your life insurance producer for a personalized illustration, which includes an analysis of charges report, to help you understand how the policy charges affect your policy cash values. See the applicable product prospectus for more information about policy charges. There may be multiple fund share classes listed in this Report. Not all share classes that appear in this Report are available in all VUL insurance products. Please refer to your VUL insurance product prospectus for the applicable funds and share classes.

The performance for certain funds includes periods of time when other investment management firms managed these funds and/or when investment policies, and possibly the fund name, differed. The applicable funds and dates such changes occurred are as follows:

**BNY Mellon Variable Insurance Funds:** BNY Mellon VIF Appreciation Service Shares on 6/3/19.

**BlackRock Variable Series Funds, Inc.:** BlackRock Basic Value V.I. Fund and BlackRock Global Allocation V.I. Fund on 10/2/06. BlackRock 60/40 Target Allocation ETF V.I. Fund on 5/1/19.

**Fidelity Variable Insurance Products Funds:** Fidelity VIP Freedom Income, Fidelity VIP Freedom 2025, Fidelity VIP Freedom 2030, Fidelity VIP Freedom 2035, Fidelity VIP Freedom 2045 on 10/1/15. Fidelity VIP Government Money Market on 12/1/15.

**Franklin Templeton Variable Insurance Products Trust:** Templeton Global Bond VIP Fund and Templeton Foreign VIP Fund on 5/1/14.

**Invesco Variable Insurance Funds:** Invesco V.I. Global Fund and Invesco V.I. Main Street Small Cap Fund on 5/24/19 and 5/3/21. Invesco V.I. Discovery Mid Cap Growth Fund 5/3/21.

**Janus Aspen Series:** Janus Henderson VIT Enterprise Portfolio and Janus Henderson VIT Overseas Portfolio on 5/1/09 and 6/5/17.

**Legg Mason Partners Variable Equity Trust:** ClearBridge Variable Aggressive Growth Portfolio 11/2/09 and 4/29/13. ClearBridge Variable Mid Cap Portfolio on 11/2/09, 4/29/13, and 5/2/16.

**M Fund, Inc.:** M International Equity Fund on 7/1/98, 5/1/10, 6/17/11 and 12/11/18. M Large Cap Growth Fund on 10/12/09. M Capital Appreciation Fund on 5/1/10. M Large Cap Value Fund on 5/1/10, 5/1/13, and 5/1/20.

**Neuberger Berman Advisers Management Trust:** Neuberger Berman AMT Sustainable Equity Portfolio on 5/1/18.

**Pacific Select Fund:** Comstock on 5/1/03 and 6/1/10. Diversified Bond on 2/1/09. Dividend Growth on 5/1/10. Emerging Markets on 1/1/03 and 5/24/19. Equity Index on 1/1/00 and 9/26/06. Focused Growth on 5/1/14. Growth on 5/1/13. Health Sciences on 5/1/05 and 5/1/14. High Yield Bond on 1/1/08. Inflation Managed on 5/1/01. International Large-Cap on 1/1/04. International Small-Cap on 5/2/16. International Value on 5/1/06, 1/1/11, and 5/1/17. Large-Cap Growth on 1/1/06, 5/1/09, 1/1/13, and 5/1/13. Large-Cap Value on 10/1/06. Main Street® Core on 1/1/03 and 5/24/19. Mid-Cap Equity on 5/1/08 and 1/1/13. Mid-Cap Growth on 5/1/03 and 11/1/13. Mid-Cap Value on 5/1/15. Real Estate on 5/1/03. Short Duration Bond on 5/1/11. Small-Cap Equity on

5/1/07 and 5/1/10. Small-Cap Index on 1/1/00 and 9/26/06. Small-Cap Value on 5/1/14 and 10/30/15. Technology on 5/1/05, 5/1/14, and 11/1/16.

**PIMCO Variable Insurance Trust:** PIMCO VIT Global Managed Asset Allocation on 5/1/14 and 10/1/19.

**VanEck VIP Trust:** VanEck VIP Global Resources Fund on 5/1/10, 5/2/16, and 5/3/21.

**Vanguard Variable Insurance Fund:** VIF Real Estate on 1/23/18.

**BlackRock 60/40 Target Allocation ETF V.I. Fund Class I, Lazard Retirement Global Dynamic Multi Asset Portfolio - Service Shares, Lord Abbett Series Fund Bond Debenture VC, MFS Value Series Service Class, PSF Core Income Portfolio, PSF DFA Balanced Allocation, and Western Asset Variable Global High Yield Bond Portfolio Class II** are not available with the following variable universal life insurance products: Pacific Select (policy form #87-51), Pacific Select Accumulator (policy form #P04PSA), Pacific Select Choice (policy form #93-55), Pacific Select Estate Maximizer (policy form #97-50), Pacific Select Estate Preserver (policy form #96-56), Pacific Select Estate Preserver II (policy form #97-56), Pacific Select Estate Preserver III (policy form #00-56), Pacific Select Estate Preserver IV (policy form #00 57), Pacific Select Estate Preserver V (policy form #P01SP5), MVP Survivorship (policy form #P03S5M). These products were issued by Pacific Life Insurance Company and are no longer available for sale. Pacific Select Estate Preserver-NY (policy form #P0156-NY), Pacific Select Exec II - NY (policy form #P9852-NY), Pacific Select Exec III - NY (policy form #P03SE3-NY), Pacific Select Exec IV - NY (policy form #P07SE4-NY). These products were issued by Pacific Life & Annuity Company and are no longer available for sale.

A separate account is a type of Investment Company referred to as a unit investment trust which is registered in the Securities Exchange Commission under the Investment Company Act of 1940. The Separate Account Start Date represents the date the portfolio was added as a sub-account into the applicable Separate Account.

The benchmark indices provided herein may not represent all of a funds' benchmark indices shown in the applicable funds' prospectuses. See the applicable funds' prospectuses for more information.

MSCI EAFE NR USD: The index measures the performance of the large and mid cap segments of developed markets, excluding the US & Canada equity securities. It is free float-adjusted market-capitalization weighted.

## Definitions

**Alpha** is measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. A positive Alpha figure indicates the portfolio has performed better than its beta would predict. In contrast, a negative Alpha indicates the portfolio has underperformed, given the expectations established by beta.

**Average Market Cap** defines the overall "size" of a stock fund's portfolio as the geometric mean of the market capitalization for all of the stocks it owns.

No bank guarantee	Not a deposit	May lose value	Not FDIC/NCUA insured	Not insured by federal government agency
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# Disclosure

**Beta** is a measure of a fund's sensitivity to market movements. A portfolio with a beta greater than 1 is more volatile than the market, and a portfolio with a beta less than 1 is less volatile than the market.

**Credit Analysis** For corporate-bond and municipal-bond funds, the credit analysis depicts the quality of US and non-US bonds in the fund's portfolio. The analysis reveals the percentage of fixed-income securities that fall within each credit-quality rating as assigned by Standard & Poor's or Moody's. At the top of the ratings are AAA bonds. Bonds with a BBB rating are the lowest bonds that are still considered to be of investment grade. Bonds that are rated at or lower than BB (often called junk bonds or high-yield bonds) are considered to be quite speculative. (For municipal bonds, ratings BBB and below are considered speculative). Any bonds that appear in the Not Rated category are either not rated by Standard & Poor's or Moody's, or did not have a rating available.

**Duration Average** effective duration is a measure of a bond's interest-rate sensitivity--the longer a fund's duration, the more sensitive the fund is to shifts in interest rates. Duration is determined by a formula that includes coupon rates and bond maturities. Small coupons tend to increase duration, while shorter maturities and higher coupons shorten duration. The relationship between funds with different durations is straightforward: A fund with a duration of 10 years is twice as volatile as a fund with a five-year duration.

**Equity Style Ownership Zone** The Morningstar Ownership ZoneSM provides a graphic and intuitive representation of the size and investment style of stocks in an equity portfolio. The Ownership Zone is derived by plotting each stock in the portfolio within the Morningstar Style Box. The Ownership Zone is the shaded area that represents 75% of the assets in the portfolio and indicates the level of concentration in the holdings. The "centroid" in the middle of the Ownership Zone represents the weighted average of all the holdings. The Ownership Zone helps investors differentiate between portfolios that may otherwise look similar. Investors can also use the Ownership Zone to construct diversified portfolios and model how multiple funds complement one other in a portfolio.

**Equity Style Trail** gives you a historical view of the movement of a portfolio over time in terms of equity style based on historical portfolios. This helps to clearly define the management of a portfolio over time and determine the consistency of that management.

**Information Ratio** is a risk-adjusted performance measure. The information ratio is a special version of the Sharpe Ratio in that the benchmark doesn't have to be the risk-free rate.

**Maturity** is a weighted average of all the maturities of the bonds in a portfolio, computed by weighting each bond's effective maturity by the market value of the security. It takes into consideration all mortgage prepayments, puts, and adjustable coupons. Longer-maturity funds are generally considered more interest-rate sensitive than their shorter counterparts.

**Price/Prospective Book Ratio** is the asset-weighted average of the prospective book value yields of all the domestic stocks in the fund's portfolio as of the date of the portfolio. It is calculated by dividing the company's estimated shareholders' equity per share for the current fiscal year by the company's month-end stock price as of the portfolio date.

**Price/Prospective Cash Flow Ratio** represents the

weighted average of the price/cash-flow ratios of the stocks in a fund's portfolio. Price/cash-flow represents the amount an investor is willing to pay for a dollar generated from a particular company's operations. Price/cash flow shows the ability of a business to generate cash and acts as a gauge of liquidity and solvency.

**Price/Prospective Earnings Ratio** is the asset-weighted average of the prospective earnings yields of all the domestic stocks in the fund's portfolio as of the date of the portfolio. A stock's prospective earnings yield is calculated by dividing the company's estimated earnings per share for the current fiscal year by the company's month-end share price as of the portfolio date.

**Price/Prospective Sales Ratio** is the weighted average of the price/sales ratios of the stocks in a portfolio. Price/sales represents the amount an investor is willing to pay for a dollar generated from a particular company's operations.

**Sharpe Ratio** is a risk-adjusted measure developed by Nobel Laureate William Sharpe. It is calculated by using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe Ratio, the better the fund's historical risk-adjusted performance.

**Standard deviation** is a statistical measure of the volatility of the fund's returns.

**R-squared** reflects the percentage of a fund's movements that are explained by movements in its benchmark index, showing the degree of correlation between the fund and the benchmark.

**Risk Evaluation Chart** provides a graphic of the three year standard deviation of fund returns compared to its benchmark and Morningstar Category. Standard deviation is a statistical measurement of dispersion about an average, which, for a mutual fund, depicts how widely the returns varied over a certain period of time. Investors use the standard deviation of historical performance to try to predict the range of returns that are most likely for a given fund. When a fund has a high standard deviation, the predicted range of performance is wide, implying greater volatility. Morningstar computes standard deviation using the trailing monthly total returns for the appropriate time period. All of the monthly standard deviations are then annualized.

**Total Return table** presents the trailing performance of the investment, a chosen benchmark and the Morningstar Category for the time periods shown.

**Weighted Price** is calculated by weighting the price of each bond by its relative size in the portfolio. This number reveals if the fund favors bonds selling at prices above or below face value (premium or discount securities, respectively). A higher number indicates a bias toward premiums.

## Morningstar Rating™

The Morningstar Rating™ for funds, or "star rating", is calculated for investments funds and separate accounts with at least a three-year history. Exchange-traded funds and open-ended mutual funds are considered a single population for comparative purposes. It is calculated based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a managed product's monthly excess performance, placing more emphasis on downward variations and rewarding consistent performance. The Morningstar Rating does not include any adjustment for sales loads. The top 10% of products in each product category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars,

the next 22.5% receive 2 stars, and the bottom 10% receive 1 star. The Overall Morningstar Rating for a managed product is derived from a weighted average of the performance figures associated with its three-, five-, and 10-year (if applicable) Morningstar Rating metrics.

## Morningstar Return

The Morningstar Return rates a fund's performance relative to other managed products in its Morningstar Category. It is an assessment of a product's excess return over a risk-free rate (the return of the 90-day Treasury Bill) in comparison with the products in its Morningstar category. In each Morningstar category, the top 10% of products earn a High Morningstar Return (High), the next 22.5% Above Average (+Avg), the middle 35% Average (Avg), the next 22.5% Below Average (-Avg), and the bottom 10% Low (Low). Morningstar Return is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

## Morningstar Risk

Morningstar Risk evaluates a fund's downside volatility relative to that of other products in its Morningstar Category. It is an assessment of the variations in monthly returns, with an emphasis on downside variations, in comparison with the products in its Morningstar category. In each Morningstar category, the 10% of products with the lowest measured risk are described as Low Risk (Low), the next 22.5% Below Average (-Avg), the middle 35% Average (Avg), the next 22.5% Above Average (+Avg), and the top 10% High (High). Morningstar Risk is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

## Morningstar Style Box™

The Morningstar Style Box reveals a fund's investment strategy as of the date noted on this report.

For equity funds the vertical axis shows the market capitalization of the long stocks owned and the horizontal axis shows investment style (value, blend, or growth).

For fixed-income funds, the vertical axis shows the credit quality of the long bonds owned and the horizontal axis shows interest rate sensitivity as measured by a bond's effective duration.

Morningstar seeks credit rating information from fund companies on a periodic basis (e.g., quarterly). In compiling credit rating information Morningstar accepts credit ratings reported by fund companies that have been issued by all Nationally Recognized Statistical Rating Organizations (NRSROs). For a list of all NRSROs, please visit <http://www.sec.gov/divisions/marketreg/ratingagency.htm>. Additionally, Morningstar accepts foreign credit ratings from widely recognized or registered rating agencies. If two rating organizations/agencies have rated a security, fund companies are to report the lower rating; if three or more organizations/agencies have rated a security, fund companies are to report the median rating, and in cases where there are more than two organization/agency ratings and a median rating does not exist, fund companies are to use the lower of the two middle

No bank guarantee	Not a deposit	May lose value	Not FDIC/NCUA insured	Not insured by federal government agency
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# Disclosure

ratings. PLEASE NOTE: Morningstar, Inc. is not itself an NRSRO nor does it issue a credit rating on the fund. An NRSRO or rating agency ratings can change from time-to-time and do not remove market risk.

For credit quality, Morningstar combines the credit rating information provided by the fund companies with an average default rate calculation to come up with a weighted-average credit quality. The weighted-average credit quality is currently a letter that roughly corresponds to the scale used by a leading NRSRO. Bond funds are assigned a style box placement of "low", "medium", or "high" based on their average credit quality. Funds with a low credit quality are those whose weighted-average credit quality is determined to be less than "BBB-"; medium are those less than "AA-", but greater or equal to "BBB-"; and high are those with a weighted-average credit quality of "AA-" or higher. When classifying a bond portfolio, Morningstar first maps the NRSRO credit ratings of the underlying holdings to their respective default rates (as determined by Morningstar's analysis of actual historical default rates). Morningstar then averages these default rates to determine the average default rate for the entire bond fund. Finally, Morningstar maps this average default rate to its corresponding credit rating along a convex curve.

For interest-rate sensitivity, Morningstar obtains from fund companies the average effective duration. Generally, Morningstar classifies a fixed-income fund's interest-rate sensitivity based on the effective duration of the Morningstar Core Bond Index (MCBI), which is currently three years. The classification of Limited will be assigned to those funds whose average effective duration is between 25% to 75% of MCBI's average effective duration; funds whose average effective duration is between 75% to 125% of the MCBI will be classified as Moderate; and those that are at 125% or greater of the average effective duration of the MCBI will be classified as Extensive.

For municipal bond funds, Morningstar also obtains from fund companies the average effective duration. In these cases static breakpoints are utilized. These breakpoints are as follows: (i) Limited: 4.5 years or less; (ii) Moderate: more than 4.5 years but less than 7 years; and (iii) Extensive: more than 7 years. In addition, for non-US taxable and non-US domiciled fixed income funds static duration breakpoints are used: (i) Limited: less than or equal to 3.5 years; (ii) Moderate: greater than 3.5 and less than equal to 6 years; (iii) Extensive: greater than 6 years.

## Sustainalytics

Sustainalytics is an independent environmental, social, and governance and corporate governance research, ratings, and analysis firm and is not an affiliated company of Morningstar, Inc. Sustainalytics provides ESG scores on companies, which are evaluated within global industry peer groups, and tracks and categorizes ESG-related controversial incidents on companies. Morningstar has licensed Sustainalytics' company-level ESG analytics for use in calculating ratings for managed products and indexes using Morningstar's portfolio holdings database.

## Morningstar Sustainability Rating™

The Morningstar Sustainability Rating™ is intended to measure how well the issuing companies of the securities within a fund's portfolio holdings are managing their

financially material environmental, social and governance, or ESG, risks relative to the fund's Morningstar Global Category peers.

The Morningstar Sustainability Rating calculation is a five-step process. First, each fund with at least 67% of assets covered by a company-level ESG Risk Score from Sustainalytics receives a Morningstar Portfolio Sustainability Score. The Morningstar Portfolio Sustainability Score is an asset-weighted average of company-level ESG Risk Scores. The Portfolio Sustainability Score ranges between 0 to 100, with a higher score indicating that a fund has, on average, more of its assets invested in companies with high ESG Risk.

Second, the Historical Sustainability Score is an exponential weighted moving average of the Portfolio Sustainability Scores over the past 12 months. The process rescales the current Portfolio Sustainability Score to reflect the consistency of the scores. The Historical Sustainability Score ranges between 0 to 100, with a higher score indicating that a fund has, on average, more of its assets invested in companies with high ESG Risk, on a consistent historical basis.

Third, the Morningstar Sustainability Rating is then assigned to all scored funds within Morningstar Global Categories in which at least thirty (30) funds receive a Historical Sustainability Score and is determined by each fund's Morningstar Sustainability Rating Score rank within the following distribution:

- High (highest 10%)
- Above Average (next 22.5%)
- Average (next 35%)
- Below Average (next 22.5%) and
- Low (lowest 10%)

Fourth, we apply a 1% rating buffer from the previous month to increase rating stability. This means a fund must move 1% beyond the rating breakpoint to change ratings.

Fifth, we adjust downward positive Sustainability Ratings to funds with a high ESG Risk scores. The logic is as follows:

- If Portfolio Sustainability score is above 40, then the fund receives a Low Sustainability Rating
- If Portfolio Sustainability score is above 35 and preliminary rating is Average or better, then the fund is downgraded to Below Average
- If Portfolio Sustainability score is above 30 and preliminary rating is Above Average, then the fund is downgraded to Average
- If Portfolio Sustainability score is below 30, then no adjustment is made.

The Morningstar Sustainability Rating is depicted by globe icons where High equals 5 globes and Low equals 1 globe. Since a Sustainability Rating is assigned to all funds that meet the above criteria, the rating it is not limited to funds with explicit sustainable or responsible investment mandates.

Morningstar updates its Sustainability Ratings monthly. The Portfolio Sustainability Score is calculated when Morningstar receives a new portfolio. Then, the Historical Sustainability Score and the Sustainability Rating is calculated one month and six business days after the reported as-of date of the most recent portfolio. As part of the evaluation process, Morningstar uses Sustainalytics' ESG scores from the same month as the portfolio as-of date.

Please click on <http://corporate1.morningstar.com/SustainableInvesting/> for more detailed information about the

Morningstar Sustainability Rating methodology and calculation frequency.

## Percentile Rank in Category

Percentile Rank is a standardized way of ranking items within a peer group. The observation with the largest numerical value is ranked zero the observation with the smallest numerical value is ranked 100. The remaining observations are placed equal distance from one another on the rating scale. Note that lower percentile ranks are generally more favorable.

## Morningstar Sectors

Morningstar determines how much of each stock portfolio is held in each of Morningstar's 12 major industrial sectors. In instances where the portfolio has a fund-of-fund structure, the sector breakdown is calculated by evaluating the underlying assets of the aggregated portfolio.

## About Risk

Every variable investment option has some degree of risk depending on its investments and strategies. While all variable investment options are subject to market risk, some investment options may be subject to greater volatility than others. The variable investment options are not FDIC insured or guaranteed. The risks disclosed below are intended only to illustrate certain principal risks of the variable investment options and are not intended to be complete or exhaustive. Before investing you should carefully read the applicable fund prospectuses.

**Active Management** There is a risk that the advisor's investment decisions fail to perform as expected, which may cause the fund to lose value or underperform funds with similar objectives and strategies or the market in general.

**Asset Allocation Fund of Funds** As a fund-of-funds, the fund typically is exposed to the same risks as the underlying funds in which it invests in direct to the allocation of assets among those underlying funds. There is a risk that you could achieve better returns by investing in an individual fund or funds representing a single asset class or investment style rather than investing in the fund.

**Currency** Investments in securities traded in foreign currencies or more directly in foreign currencies are subject to the risk that the foreign currency will decline in value relative to the U.S. dollar, which may reduce the value of the portfolio.

**Derivatives** The use of forwards and future contracts, options and swaps agreements (each a type of derivative instrument) as a principal investment strategy subjects an investor to a number of risks, including: counterparty risk, leverage risk, price volatility risk, regulatory risk, liquidity and valuation risk, correlation risk, premium risk and segregation risk. Derivatives may be riskier than other types of investments and may increase an investment's volatility and risk of loss.

**Emerging Markets** Investments in emerging- and frontier-markets securities may be subject to greater market, credit, currency, liquidity, legal, political, and other risks compared with assets invested in developed foreign countries. Risk may be more enhanced for investments with exposure to certain emerging market countries (such as China) with governments

No bank guarantee	Not a deposit	May lose value	Not FDIC/NCUA insured	Not insured by federal government agency
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# Disclosure

that act in an adverse manner toward foreign investment.

**Foreign Markets** Exposure to foreign markets can involve additional risks relating to market, economic, political, regulatory, geopolitical, or other conditions. These factors can make foreign investments more volatile and less liquid than U.S. investments.

**Geographic Focus** Focusing investments in a single country, limited number of countries, or particular geographic region increases the risk that economic, political, social, or other conditions in those countries or that region will have a significant impact on performance.

**Growth Companies** Growth securities may be subject to increased volatility as the value of these securities is highly sensitive to market fluctuations and future earnings expectations. These securities typically trade at higher multiples of current earnings than do other securities and may lose value if it appears their earnings expectations may not be met.

**Index Sampling** Because index sampling relies on the securities selected to have economic characteristics similar to securities in the target index, it may not result in the aggregate in investment performance matching that of a fund's target index or of other funds that purchased all of the securities in the same index in approximately the same proportions as their weightings in the index.

**Industry and Sector Investing** Concentrating assets in a particular industry, sector of the economy, or markets may increase volatility because the investment will be more susceptible to the impact of market, economic, regulatory, and other factors affecting that industry or sector compared with a more broadly diversified asset allocation.

**Large Capitalization Companies** Concentrating assets in large-capitalization stocks may subject the portfolio to the risk that those stocks underperform other capitalizations or the market as a whole.

**Leverage** Leverage transactions may increase volatility and result in a significant loss of value if a transaction fails. Because leverage usually involves investment exposure that exceeds the initial investment, the resulting gain or loss from a relatively small change in an underlying indicator will be disproportionately magnified.

**Mid-Capitalization Companies** Mid-cap companies may be subject to increased liquidity risk compared with large-cap companies and may experience greater price volatility than do those securities because of more-limited product lines or financial resources, among other factors.

**Nondiversification** A nondiversified investment, as defined under the Investment Act of 1940, may have an increased potential for loss because its portfolio includes a relatively small number of investments.

**Passive Management** A passively managed (or index) fund attempts to track the performance of an unmanaged index of securities, which could cause a fund's return to be lower than if the fund were actively managed.

**Restricted/Illiquid Securities** may fall in price because of an inability to sell the securities when desired. Investing in restricted securities may subject the portfolio to higher costs and liquidity risk.

**Short Sale Selling** securities short may be subject to the risk that an advisor does not correctly predict the movement of the security, resulting in a loss if a security must be purchased on the market above its initial borrowing price to return to the lender.

**Small-Capitalization Companies** Concentrating assets in small-capitalization stocks may subject the portfolio to the risk that those stocks underperform other capitalizations or the market as a whole and may be subject to increased liquidity risk compared with larger, more established companies.

**Underlying Funds** Because the Fund may serve as an underlying fund of one or more "fund of funds" and thus have a significant percentage of its outstanding shares held by such fund of funds, a change in asset allocation by the fund of funds could result in large redemptions out of the Fund, causing potential increases in expenses to the Fund and sale of securities in a short timeframe, both of which could negatively impact performance.

**U.S. Government Securities** Not all U.S. government securities are backed or guaranteed by the U.S. government and different U.S. government securities are subject to varying degrees of credit risk. There is risk that the U.S. government will not make timely payments on its debt or provide financial support to U.S. government agencies, instrumentalities or sponsored enterprises if those entities are not able to meet their financial obligations.

**Value Companies Risk** Value securities may be subject to the risk that the determination that a stock is undervalued is not correct or recognized in the market.

## Additional Information

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