

Putnam VT Sustainable Leaders Fund

Before you invest, you may wish to review the fund's prospectus, which contains more information about the fund and its risks. You may obtain the prospectus and other information about the fund, including the statement of additional information (SAI) and most recent reports to shareholders, at no cost by visiting putnam.com/individual/annuities, calling 1-800-225-1581, or e-mailing Putnam at funddocuments@putnam.com.

The fund's prospectus and SAI, both dated 4/30/21, are incorporated by reference into this summary prospectus.

Fund summary

Goal

Putnam VT Sustainable Leaders Fund seeks long-term capital appreciation.

Fees and expenses

The following table describes the fees and expenses you may pay if you buy, hold and sell shares of the fund. You may pay other fees, such as brokerage commissions and other fees to financial intermediaries, which are not reflected in the tables and examples below. The fees and expenses information does not reflect insurance-related charges or expenses borne by contract holders indirectly investing in the fund. If it did, expenses would be higher.

Annual fund operating expenses

(expenses you pay each year as a percentage of the value of your investment)

Share class	Management fees	Distribution and service (12b-1) fees	Other expenses	Total annual fund operating expenses
Class IA	0.55%	N/A	0.11%	0.66%
Class IB	0.55%	0.25%	0.11%	0.91%

Example

The following hypothetical example is intended to help you compare the cost of investing in the fund with the cost of investing in other funds. The example does not reflect insurance-related charges or expenses. If it did, expenses would be higher. It assumes that you invest \$10,000 in the fund for the time periods indicated and then redeem or hold all your shares at the end of those periods. It assumes a 5% return on your investment each year and that the fund's operating expenses remain the same. Your actual costs may be higher or lower.

Share class	1 year	3 years	5 years	10 years
Class IA	\$67	\$211	\$368	\$822
Class IB	\$93	\$290	\$504	\$1,120

Portfolio turnover

The fund pays transaction-related costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual fund operating expenses or the above example, affect fund performance. The fund's turnover rate in the most recent fiscal year was 29%.

Investments, risks, and performance

Investments

We invest mainly in common stocks of U.S. companies of any size, with a focus on companies that we believe exhibit a commitment to sustainable business practices. Stocks of companies that exhibit a commitment to sustainable business practices are typically, but not always, considered to be growth stocks. Growth stocks are stocks of companies whose earnings are expected to grow faster than those of similar firms, and whose business growth and other characteristics may lead to an increase in stock price. We may consider, among other factors, a company's sustainable business practices (as described below), valuation, financial strength, growth potential, competitive position in its industry, projected future earnings, cash flows and dividends when deciding whether to buy or sell investments. We may also invest in non-U.S. companies.

Sustainable investing. We believe that companies that exhibit leadership in sustainable business practices also often exhibit more profitable, durable financial returns with lower risk profiles. Accordingly, in selecting investments, we focus on companies that we believe have a demonstrated commitment to sustainable business practices in areas that are relevant and material to their long-term financial returns and risk profiles. This commitment may be reflected through environmental, social and/or corporate governance (ESG) policies, practices or outcomes. The fund's approach to sustainable investing incorporates fundamental research together with consideration of ESG factors. Environmental factors include, for example, a company's carbon intensity and use of resources like water or minerals. Sustainability measures in the area might include plans to reduce waste, increase recycling, or improve product design to be less resource intensive. Social factors include, for example, labor practices and supply chain management. Sustainability measures in this area might include programs to improve employee well-being, commitment to workplace equality and diversity, or improved stewardship of supplier relationships and working conditions. Corporate governance factors include, for example, board composition and executive compensation. Sustainability measures in this area might include improvements in board independence or diversity, or alignment of management incentives with the company's strategic sustainability objectives. It is likely that sustainable business practices, as well as the metrics and measurements that we use to evaluate them, will continue to evolve over time.

Risks

It is important to understand that you can lose money by investing in the fund.

The value of investments in the fund's portfolio may fall or fail to rise over extended periods of time for a variety of reasons, including general economic, political or financial market conditions, investor sentiment and market perceptions, government actions, geopolitical events or changes, and factors related to a specific issuer, geography, industry or sector. These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings. The novel coronavirus (COVID-19) pandemic and efforts to contain its spread are likely to negatively affect the value, volatility, and liquidity of the securities and other assets in which the fund invests and exacerbate other risks that apply to the fund. These effects could negatively impact the fund's performance and lead to losses on your investment in the fund. Growth stocks may be more susceptible to earnings disappointments, and the market may not favor growth-style investing. These risks are generally greater for small and midsize companies. From time to time, the fund may invest a significant portion of its assets in companies in one or more related industries or sectors, which would make the fund more vulnerable to adverse developments affecting those industries or sectors. The value of international investments traded in foreign currencies may be adversely impacted by fluctuations in exchange rates. International investments, particularly investments in emerging markets, may carry risks associated with potentially less stable economies or governments (such as the risk of seizure by a foreign government, the imposition of currency or other restrictions, or high levels of inflation), and may be or become illiquid.

Investing with a focus on companies that exhibit a commitment to sustainable business practices may cause the fund to forego otherwise attractive investment opportunities or may increase or decrease the fund's exposure to certain types of companies and, therefore, to underperform funds that do not invest with a similar focus. In evaluating an investment opportunity, we may make investment decisions based on information and data that is incomplete or inaccurate. In addition, a company's business practices may change over time. As a result of these possibilities, among others, the fund may temporarily hold securities that are inconsistent with the fund's sustainable investment criteria.

There is no guarantee that the investment techniques, analyses, or judgments that we apply in making investment decisions for the fund will produce the intended outcome or that the investments we select for the fund will perform as well as other securities that were not selected for the fund. We, or the fund's other service providers, may experience disruptions or operating errors that could negatively impact the fund.

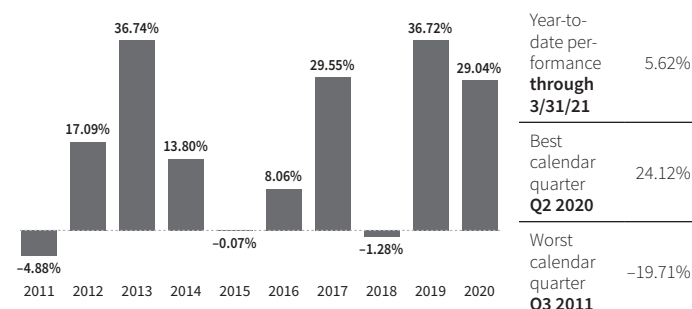
The fund may not achieve its goal, and it is not intended to be a complete investment program. An investment in the fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency.

Performance

The performance information below gives some indication of the risks associated with an investment in the fund by showing the fund's performance year to year and over time. Before April 30, 2018, the fund was managed with a materially different investment strategy and may have achieved materially different performance results

under its current investment strategy from that shown for periods before this date. The performance information does not reflect insurance-related charges or expenses. If it did, performance would be lower. Please remember that past performance is not necessarily an indication of future results. Monthly performance figures for the fund are available at putnam.com.

Annual total returns for class IA shares



Average annual total returns

(for periods ended 12/31/19)

Share class	1 year	5 years	10 years
Class IA	29.04%	19.51%	15.49%
Class IB	28.71%	19.21%	15.21%
S&P 500 Index (no deduction for fees, expenses or taxes)	18.40%	15.22%	13.88%
Russell 3000 Growth — S&P 500 Linked Benchmark* ** (no deduction for fees, expenses or taxes)	18.40%	17.09%	15.18%

* Frank Russell Company is the source and owner of the trademarks, service marks and copyrights related to the Russell Indexes. Russell® is a trademark of Frank Russell Company.

**The Russell 3000 Growth-S&P 500 Linked Benchmark represents performance of the Russell 3000 Growth Index from the inception date of the fund, August 31, 1990, through August 31, 2019 and performance of the S&P 500 Index from September 1, 2019 forward.

Your fund's management

Investment advisor

Putnam Investment Management, LLC

Portfolio managers

Katherine Collins, Head of Sustainable Investing, portfolio manager of the fund since 2018

Stephanie Dobson, Portfolio Manager, portfolio manager of the fund since 2018

Sub-advisor

Putnam Investments Limited*

* Though the investment advisor has retained the services of Putnam Investments Limited (PIL), PIL does not currently manage any assets of the fund.

Purchase and sale of fund shares

Fund shares are offered to separate accounts of various insurers. The fund requires no minimum investment, but insurers may require minimum investments from those purchasing variable insurance products for which the fund is an underlying investment option.

Insurers may purchase or sell shares on behalf of separate accounts by submitting an order to Putnam Retail Management any day the New York Stock Exchange (NYSE) is open. Some restrictions may apply.

Tax information

Generally, owners of variable insurance contracts are not taxed currently on income or gains realized with respect to such contracts. However, some distributions from such contracts may be taxable at ordinary income tax rates and distributions to contract owners younger than 59½ may be subject to a 10% penalty tax. For more information, please see the prospectus (or other offering document) for your variable insurance contract.

Payments to insurance companies

The fund is offered as an underlying investment option for variable insurance contracts. The fund and its related companies may make payments to the sponsoring insurance company (or its affiliates) and dealers for distribution and/or other services. These payments may create an incentive for the insurance company to include the fund, rather than another investment, as an option in its products and may create a conflict of interest for dealers in recommending the fund over another investment. The prospectus (or other offering document) for your variable insurance contract may contain additional information about these payments.

Information about the Summary Prospectus, Prospectus, and SAI

The summary prospectus, prospectus, and SAI for a fund provide information concerning the fund. The summary prospectus, prospectus, and SAI are updated at least annually and any information provided in a summary prospectus, prospectus, or SAI can be changed without a shareholder vote unless specifically stated otherwise. The summary prospectus, prospectus, and the SAI are not contracts between the fund and its shareholders and do not give rise to any contractual rights or obligations or any shareholder rights other than any rights conferred explicitly by federal or state securities laws that may not be waived.

Additional information is available at putnam.com/individual/annuities, by calling 1-800-225-1581, or by e-mailing Putnam at funddocuments@putnam.com.

