

Putnam Variable Trust Putnam VT Growth Opportunities Fund

Annual report

12 | 31 | 18

IMPORTANT NOTICE: Delivery of paper fund reports

In accordance with regulations adopted by the Securities and Exchange Commission, beginning on or after January 1, 2021, at the election of your insurance provider, you may not receive paper reports like this one in the mail from the insurance provider that offers your variable annuity contract or variable life insurance policy unless you specifically request it. Instead, they will be available on a website, and your insurance provider will notify you by mail whenever a new one is available, and provide you with a website link to access the report.

If you wish to continue to receive paper reports free of charge after January 1, 2021, please contact your insurance provider.

If you already receive these reports electronically, no action is required.

Message from the Trustees

February 7, 2019

Dear Shareholder:

Global financial markets encountered challenges in the final months of 2018. December was difficult for stock markets worldwide, and most major indexes finished the year with losses. Among the issues that contributed to the downturn were uncertainty about monetary policy, a slowing Chinese economy, and the U.S.–China trade dispute. Fixed-income markets were less volatile than stocks, and higher quality bonds benefited from a flight to safety amid the turmoil.

Although no one can predict the direction of the markets in the months ahead, Putnam’s experienced investment professionals actively seek to position their fund portfolios for all types of conditions. They take a research-intensive approach to investing that includes risk management strategies designed to serve investors through changing markets. In all environments, we believe investors should remain focused on time-tested approaches: maintain a well-diversified portfolio, think about long-term goals, and speak regularly with a financial advisor.

Thank you for investing with Putnam.

Respectfully yours,



Robert L. Reynolds
President and Chief Executive Officer
Putnam Investments



Kenneth R. Leibler
Chair, Board of Trustees

Performance summary (as of 12/31/18)

Investment objective

Capital appreciation

Net asset value December 31, 2018

Class IA: \$9.76

Class IB: \$9.57

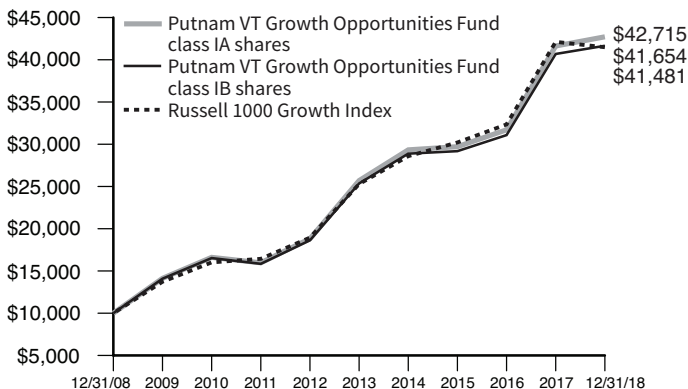
Total return at net asset value

(as of 12/31/18)	Class IA shares*	Class IB shares*	Russell 1000 Growth Index
1 year	2.60%	2.38%	-1.51%
5 years	66.23	64.28	64.03
Annualized	10.70	10.44	10.40
10 years	327.15	316.54	314.81
Annualized	15.63	15.34	15.29
Life	51.18	44.40	111.20
Annualized	2.21	1.96	4.03

For a portion of the periods, the fund had expense limitations, without which returns would have been lower.

* Class inception date: February 1, 2000.

Cumulative total returns of a \$10,000 investment in class IA and class IB shares at net asset value — since 12/31/08

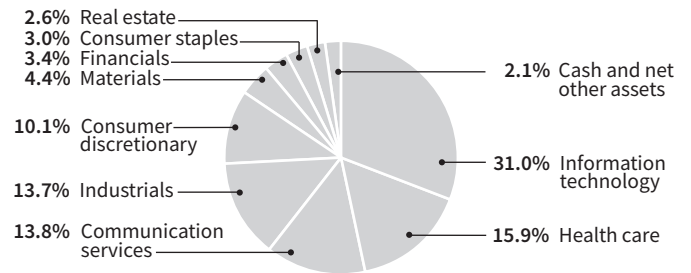


The Russell 1000 Growth Index is an unmanaged index of those companies in the large-cap Russell 1000 Index chosen for their growth orientation.

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Data represent past performance. Past performance does not guarantee future results. More recent returns may be less or more than those shown. Investment return and principal value will fluctuate, and you may have a gain or a loss when you sell your shares. Performance information does not reflect any deduction for taxes a shareholder may owe on fund distributions or on the redemption of fund shares. All total return figures are at net asset value and exclude contract charges and expenses, which are added to the variable annuity contracts to determine total return at unit value. Had these charges and expenses been reflected, performance would have been lower. For more recent performance, contact your variable annuity provider who can provide you with performance that reflects the charges and expenses at your contract level.

Portfolio composition



Allocations are shown as a percentage of the fund's net assets. Cash and net other assets, if any, represent the market value weights of cash, derivatives, short-term securities, and other unclassified assets in the portfolio. Summary information may differ from the portfolio schedule included in the financial statements due to the inclusion of derivative securities, any interest accruals, the exclusion of as-of-trades, if any, the use of different classifications of securities for presentation purposes, and rounding. Holdings and allocations may vary over time.

Report from your fund's manager

How was the environment for U.S. stocks during the 12-month reporting period ended December 31, 2018?

U.S. stocks enjoyed a positive start to 2018, energized by a solidly improving U.S. economy, strong corporate earnings, and optimism about U.S. tax reform. However, market conditions became more challenging as the year progressed. Concerns about the U.S.–China trade war, rising interest rates, weaker global growth, and simmering geopolitical risks soured the outlook for corporate earnings. By the fourth quarter, with business and consumer sentiment weakening, investors sold stocks indiscriminately and sought shelter in lower-risk assets. The breadth and depth of the sell-off and its single-day point rebounds and declines were remarkable and left major market indices notching their worst annual performance in a decade.

Large-cap growth stocks, the focus of this fund, held up relatively well in 2018 and outperformed large-cap value stocks. The majority of sectors in the Russell 1000 Growth Index [the fund's benchmark] ended the year with negative returns. Utilities, health care, consumer discretionary, and information technology were the best performing sectors.

What was your investment strategy in this environment?

The market shifted from a narrative of synchronized global growth to a more somber tone in the second half of 2018. In this environment, we believed the markets were likely to witness a broadening out of leadership across sectors in 2019 rather than see a repeat of the market dominance of high-profile technology and internet companies that characterized 2017 and the first half of 2018.

Accordingly, we moved the fund to a more balanced profile during the second half of 2018. As part of this strategy, we kept most of the sector over/underweights small relative to the benchmark to ensure that stock selection continues as the primary driving force for performance. As always, we look to minimize the impact of market fluctuations by investing in companies that, in our view, offer attractive long-term growth potential, a competitive edge, and fundamental business strength.

How did Putnam VT Growth Opportunities Fund perform during the reporting period?

For the 12 months ended December 31, 2018, the fund's IA shares returned 2.60%, outperforming the benchmark, which returned –1.51%. Security selection was the major contributor to this result. The fund's overweight exposure to Visa, Salesforce.com, and Okta in information technology was rewarding. McCormick & Co. and Walmart in consumer staples were standout contributors, as were Boston Scientific, Bioverativ, and Danaher in health care. On the other hand, investing in underperforming BlackRock and Prudential, which were not held by the benchmark, and overweighting positions in Charter Communications and Activision Blizzard relative to the benchmark weighed on performance during the period. We sold our positions in BlackRock and Bioverativ during the period.

How did the fund use derivatives?

We used futures in an effort to equitize cash. We also used forward currency contracts, which are agreements between two parties to buy and sell currencies at a set price on a future date. These contracts were used as a means to hedge foreign exchange risk.

What is your outlook for 2019?

It's difficult to predict some of the most important market-driving variables heading into 2019, such as the Federal Reserve's monetary policy and details of a potential trade agreement with China. Our stance remains modestly positive, however, and we expect to find plenty of investment opportunities within the market over the next 12 months. We will continue to apply a top-down thematic lens to the portfolio with an emphasis on the growth level and duration of our owned businesses, the capital return profile, and making sure there's an ownership culture present. By this, we mean businesses whose managers act like owners and whose interests are aligned with shareholders. We believe that these criteria, when applied rigorously and continuously, should yield favorable results in a variety of economic backdrops.

The views expressed in this report are exclusively those of Putnam Management and are subject to change. They are not meant as investment advice. Please note that the holdings discussed in this report may not have been held by the fund for the entire period. Portfolio composition is subject to review in accordance with the fund's investment strategy and may vary in the future.

Consider these risks before investing: Growth stocks may be more susceptible to earnings disappointments, and the market may not favor growth-style investing. 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, industry, or sector. These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings. 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. You can lose money by investing in the fund.

Your fund's manager



Portfolio Manager **Richard E. Bodzy** joined Putnam in 2009 and has been in the investment industry since 2004.

Your fund's manager also manages other accounts advised by Putnam Management or an affiliate, including retail mutual fund counterparts to the funds in Putnam Variable Trust.

Understanding your fund's expenses

As an investor in a variable annuity product that invests in a registered investment company, you pay ongoing expenses, such as management fees, distribution fees (12b-1 fees), and other expenses. Using the following information, you can estimate how these expenses affect your investment and compare them with the expenses of other funds. You may also pay one-time transaction expenses, which are not shown in this section and would result in higher total expenses. Charges and expenses at the insurance company separate account level are not reflected. For more information, see your fund's prospectus or talk to your financial representative.

Review your fund's expenses

The two left-hand columns of the Expenses per \$1,000 table show the expenses you would have paid on a \$1,000 investment in your fund from 7/1/18 to 12/31/18. They also show how much a \$1,000 investment would be worth at the close of the period, *assuming actual returns and expenses*. To estimate the ongoing expenses you paid over the period, divide your account value by \$1,000, then multiply the result by the number in the first line for the class of shares you own.

Compare your fund's expenses with those of other funds

The two right-hand columns of the Expenses per \$1,000 table show your fund's expenses based on a \$1,000 investment, *assuming a hypothetical 5% annualized return*. You can use this information to compare the ongoing expenses (but not transaction expenses or total costs) of investing in the fund with those of other funds. All shareholder reports of mutual funds and funds serving as variable annuity vehicles will provide this information to help you make this comparison. Please note that you cannot use this information to estimate your actual ending account balance and expenses paid during the period.

Expense ratios

	Class IA	Class IB
Total annual operating expenses for the fiscal year ended 12/31/17	0.66%	0.91%
Annualized expense ratio for the six-month period ended 12/31/18*	0.67%	0.92%

Fiscal-year expense information in this table is taken from the most recent prospectus, is subject to change, and may differ from that shown for the annualized expense ratio and in the financial highlights of this report.

Expenses are shown as a percentage of average net assets.

*For the fund's most recent fiscal half year; may differ from expense ratios based on one-year data in the financial highlights.

Expenses per \$1,000

	Expenses and value for a \$1,000 investment, assuming actual returns for the 6 months ended 12/31/18		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 12/31/18	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$3.26	\$4.48	\$3.41	\$4.69
Ending value (after expenses)	\$932.20	\$931.80	\$1,021.83	\$1,020.57

*Expenses for each share class are calculated using the fund's annualized expense ratio for each class, which represents the ongoing expenses as a percentage of average net assets for the six months ended 12/31/18. The expense ratio may differ for each share class.

†Expenses based on actual returns are calculated by multiplying the expense ratio by the average account value for the period; then multiplying the result by the number of days in the period; and then dividing that result by the number of days in the year. Expenses based on a hypothetical 5% return are calculated by multiplying the expense ratio by the average account value for the six-month period; then multiplying the result by the number of days in the six-month period; and then dividing that result by the number of days in the year.

Report of Independent Registered Public Accounting Firm

To the Trustees of Putnam Variable Trust
and Shareholders of Putnam VT Growth Opportunities Fund

Opinion on the Financial Statements

We have audited the accompanying statement of assets and liabilities, including the fund's portfolio, of Putnam VT Growth Opportunities Fund (one of the funds constituting Putnam Variable Trust, referred to hereafter as the "Fund") as of December 31, 2018, the related statement of operations for the year ended December 31, 2018, the statement of changes in net assets for each of the two years in the period ended December 31, 2018, including the related notes, and the financial highlights for each of the five years in the period ended December 31, 2018 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Fund as of December 31, 2018, the results of its operations for the year then ended, the changes in its net assets for each of the two years in the period ended December 31, 2018 and the financial highlights for each of the five years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Fund's management. Our responsibility is to express an opinion on the Fund's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Fund in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our procedures included confirmation of securities owned as of December 31, 2018 by correspondence with the custodian, transfer agent and brokers; when replies were not received from brokers, we performed other auditing procedures. We believe that our audits provide a reasonable basis for our opinion.

PricewaterhouseCoopers LLP
Boston, Massachusetts
February 7, 2019

We have served as the auditor of one or more investment companies in the Putnam Investments family of mutual funds since at least 1957. We have not been able to determine the specific year we began serving as auditor.

The fund's portfolio 12/31/18

COMMON STOCKS (97.2%)*	Shares	Value
Aerospace and defense (4.9%)		
Boeing Co. (The)	58,730	\$18,940,425
Raytheon Co.	52,768	8,091,973
TransDigm Group, Inc. †	26,167	8,898,350
		35,930,748
Biotechnology (4.1%)		
Biogen, Inc. †	33,892	10,198,781
BioMarin Pharmaceutical, Inc. †	109,829	9,351,939
Vertex Pharmaceuticals, Inc. †	63,666	10,550,093
		30,100,813
Building products (—%)		
Resideo Technologies, Inc. †	2,831	58,177
		58,177
Capital markets (2.2%)		
Intercontinental Exchange, Inc.	213,359	16,072,333
		16,072,333
Chemicals (4.4%)		
Linde PLC (United Kingdom)	109,964	17,158,783
Sherwin-Williams Co. (The)	39,278	15,454,322
		32,613,105
Commercial services and supplies (1.4%)		
New Bigfoot Other Assets GmbH (acquired 8/2/13, cost \$44) (Private) (Germany) † ΔΔ F	33	28
New Middle East Other Assets GmbH (acquired 8/2/13, cost \$19) (Private) (Germany) † ΔΔ F	14	12
Waste Connections, Inc. ^S	139,373	10,348,445
		10,348,485
Consumer finance (0.3%)		
Opportun Financial Corp. (acquired 6/23/15 to 9/18/2018, cost \$2,752,843) (Private) † ΔΔ F	966,485	2,072,288
		2,072,288
Entertainment (3.6%)		
Activision Blizzard, Inc.	144,024	6,707,198
Liberty Media Corp.-Liberty Formula One Class C †	87,970	2,700,679
Live Nation Entertainment, Inc. †	228,957	11,276,132
Netflix, Inc. †	20,505	5,488,368
		26,172,377
Equity real estate investment trusts (REITs) (2.7%)		
American Tower Corp. ^R	123,406	19,521,595
		19,521,595
Food and staples retail (1.2%)		
Walmart, Inc.	93,981	8,754,330
		8,754,330
Food products (1.8%)		
McCormick & Co., Inc. (non-voting shares) ^S	97,798	13,617,394
		13,617,394
Health-care equipment and supplies (6.6%)		
Becton Dickinson and Co. (BD)	52,452	11,818,485
Boston Scientific Corp. †	153,556	5,426,669
Danaher Corp.	174,522	17,996,709
ICU Medical, Inc. †	22,064	5,066,556
Intuitive Surgical, Inc. †	17,574	8,416,540
		48,724,959
Health-care providers and services (3.0%)		
UnitedHealth Group, Inc.	87,922	21,903,129
		21,903,129
Hotels, restaurants, and leisure (0.7%)		
Hilton Worldwide Holdings, Inc.	72,845	5,230,271
		5,230,271
Household durables (—%)		
HC Brilliant Services GmbH (acquired 8/2/13 to 8/31/16, cost \$44) (Private) (Germany) † ΔΔ F	66	57
		57

COMMON STOCKS (97.2%)* cont.	Shares	Value
Industrial conglomerates (2.4%)		
Honeywell International, Inc.	91,832	\$12,132,844
Roper Technologies, Inc.	21,748	5,796,277
		17,929,121
Insurance (0.9%)		
Prudential PLC (United Kingdom)	385,793	6,894,078
		6,894,078
Interactive media and services (8.0%)		
Alphabet, Inc. Class C †	47,808	49,510,443
Facebook, Inc. Class A †	71,136	9,325,218
		58,835,661
Internet and direct marketing retail (4.5%)		
Amazon.com, Inc. †	21,783	32,717,413
Global Fashion Group SA (acquired 8/2/13, cost \$2,106,383) (Private) (Luxembourg) † ΔΔ F	49,722	458,058
		33,175,471
IT Services (9.5%)		
Okta, Inc. †	77,944	4,972,827
PayPal Holdings, Inc. †	263,048	22,119,706
Visa, Inc. Class A ^S	239,161	31,554,902
Worldpay, Inc. Class A †	144,729	11,061,637
		69,709,072
Life sciences tools and services (2.2%)		
Lonza Group AG (Switzerland)	28,891	7,486,558
Mettler-Toledo International, Inc. †	15,871	8,976,320
		16,462,878
Machinery (1.3%)		
Fortive Corp.	139,334	9,427,338
		9,427,338
Media (2.3%)		
Charter Communications, Inc. Class A †	59,442	16,939,187
		16,939,187
Professional services (1.6%)		
CoStar Group, Inc. †	34,498	11,637,555
		11,637,555
Road and rail (2.1%)		
Union Pacific Corp.	111,518	15,415,133
		15,415,133
Software (15.7%)		
Adobe, Inc. †	58,570	13,250,877
DocuSign, Inc. † ^S	139,748	5,601,100
Microsoft Corp.	593,394	60,271,028
RealPage, Inc. †	127,846	6,160,899
Salesforce.com, Inc. †	138,430	18,960,757
ServiceNow, Inc. †	66,201	11,787,088
		116,031,749
Specialty retail (2.3%)		
Home Depot, Inc. (The)	100,307	17,234,749
		17,234,749
Technology hardware, storage, and peripherals (5.7%)		
Apple, Inc.	264,648	41,745,576
		41,745,576
Textiles, apparel, and luxury goods (1.8%)		
NIKE, Inc. Class B	176,318	13,072,217
		13,072,217
Total common stocks (cost \$544,893,363)		\$715,629,846
CONVERTIBLE PREFERRED STOCKS (0.7%)*		
Uber Technologies, Inc. Ser. E, 8.00% cv. pfd. (acquired 2/18/15, cost \$3,808,373) (Private) † ΔΔ F	112,616	\$5,492,282
Total convertible preferred stocks (cost \$3,808,373)		\$5,492,282
U.S. TREASURY OBLIGATIONS (—%)*		
U.S. Treasury Notes 2.00%, 7/31/20 ⁱ		\$124,000
Total U.S. treasury obligations (cost \$124,015)		\$124,015

WARRANTS (—%)* †	Expiration date	Strike price	Warrants	Value
Neuralstem, Inc. Ser. K, (acquired 4/20/17, cost \$—) ΔΔ	1/9/22	\$42.00	430	\$—
Total warrants (cost \$—)				\$—

SHORT-TERM INVESTMENTS (9.3%)*	Principal amount/ shares	Value
Putnam Cash Collateral Pool, LLC 2.58% ^d	Shares 52,673,575	\$52,673,575
Putnam Short Term Investment Fund 2.58% ^L	Shares 15,340,544	15,340,544
U.S. Treasury Bills 2.376%, 2/14/19 #	\$31,000	30,911
U.S. Treasury Bills 2.298%, 1/17/19 #	226,000	225,785
U.S. Treasury Bills 2.265%, 1/10/19 #	535,000	534,732
Total short-term investments (cost \$68,805,507)		\$68,805,547
Total investments (cost \$617,631,258)		\$790,051,690

Notes to the fund's portfolio

Unless noted otherwise, the notes to the fund's portfolio are for the close of the fund's reporting period, which ran from January 1, 2018 through December 31, 2018 (the reporting period). Within the following notes to the portfolio, references to "Putnam Management" represent Putnam Investment Management, LLC, the fund's manager, an indirect wholly-owned subsidiary of Putnam Investments, LLC and references to "ASC 820" represent Accounting Standards Codification 820 *Fair Value Measurements and Disclosures*.

FORWARD CURRENCY CONTRACTS at 12/31/18 (aggregate face value \$5,855,015)

Counterparty	Currency	Contract type*	Delivery date	Value	Aggregate face value	Unrealized appreciation/ (depreciation)
Bank of America N.A.	British Pound	Sell	3/20/19	\$5,837,917	\$5,855,015	\$17,098
Unrealized appreciation						17,098
Unrealized (depreciation)						—
Total						\$17,098

* The exchange currency for all contracts listed is the United States Dollar.

FUTURES CONTRACTS OUTSTANDING at 12/31/18	Number of contracts	Notional amount	Value	Expiration date	Unrealized appreciation/ (depreciation)
S&P 500 Index E-Mini (Long)	91	\$11,406,168	\$11,398,660	Mar-19	\$(654,919)
Unrealized appreciation					—
Unrealized (depreciation)					(654,919)
Total					\$(654,919)

* Percentages indicated are based on net assets of \$736,465,761.

† This security is non-income-producing.

ΔΔ This security is restricted with regard to public resale. The total fair value of this security and any other restricted securities (excluding 144A securities), if any, held at the close of the reporting period was \$8,022,725, or 1.1% of net assets.

This security, in part or in entirety, was pledged and segregated with the broker to cover margin requirements for futures contracts at the close of the reporting period. Collateral at period end totaled \$691,354 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

^d Affiliated company. See Notes 1 and 5 to the financial statements regarding securities lending. The rate quoted in the security description is the annualized 7-day yield of the fund at the close of the reporting period.

^F This security is valued by Putnam Management at fair value following procedures approved by the Trustees. Securities are classified as Level 3 for ASC 820 based on the securities' valuation inputs (Note 1).

ⁱ This security was pledged, or purchased with cash that was pledged, to the fund for collateral on certain derivative contracts (Note 1).

^L Affiliated company (Note 5). The rate quoted in the security description is the annualized 7-day yield of the fund at the close of the reporting period.

^R Real Estate Investment Trust.

^S Security on loan, in part or in entirety, at the close of the reporting period (Note 1).

Unless otherwise noted, the rates quoted in Short-term investments security descriptions represent the weighted average yield to maturity.

The dates shown on debt obligations are the original maturity dates.

ASC 820 establishes a three-level hierarchy for disclosure of fair value measurements. The valuation hierarchy is based upon the transparency of inputs to the valuation of the fund's investments. The three levels are defined as follows:

Level 1: Valuations based on quoted prices for identical securities in active markets.

Level 2: Valuations based on quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

Level 3: Valuations based on inputs that are unobservable and significant to the fair value measurement.

The following is a summary of the inputs used to value the fund's net assets as of the close of the reporting period:

Investments in securities:	Valuation inputs		
	Level 1	Level 2	Level 3
Common stocks*:			
Communication services	\$101,947,225	\$—	\$—
Consumer discretionary	68,254,650	—	458,115
Consumer staples	22,371,724	—	—
Financials	22,966,411	—	2,072,288
Health care	117,191,779	—	—
Industrials	100,746,517	—	40
Information technology	227,486,397	—	—
Materials	32,613,105	—	—
Real estate	19,521,595	—	—
Total common stocks	713,099,403	—	2,530,443
Convertible preferred stocks	—	—	5,492,282
U.S. treasury obligations	—	124,015	—
Warrants	—	—	—
Short-term investments	15,340,544	53,465,003	—
Totals by level	\$728,439,947	\$53,589,018	\$8,022,725

Other financial instruments:	Valuation inputs		
	Level 1	Level 2	Level 3
Forward currency contracts	\$—	\$17,098	\$—
Futures contracts	(654,919)	—	—
Totals by level	\$(654,919)	\$17,098	\$—

* Common stock classifications are presented at the sector level, which may differ from the fund's portfolio presentation.

The following is a reconciliation of Level 3 assets as of the close of the reporting period:

Investments in securities:	Balance as of 12/31/17	Accrued discounts/premiums	Realized gain/(loss)	Change in net unrealized appreciation/(depreciation)#	Cost of purchases	Proceeds from sales	Total transfers into Level 3†	Total transfers out of Level 3†	Balance as of 12/31/18
Common stocks*:									
Consumer discretionary	\$479,746	\$—	\$—	\$(21,631)	\$—	\$—	\$—	\$—	\$458,115
Financials	331,634	—	—	(620,707)	2,361,361	—	—	—	2,072,288
Industrials	43	—	—	(3)	—	—	—	—	40
Total common stocks	\$811,423	\$—	\$—	\$(642,341)	\$2,361,361	\$—	\$—	\$—	\$2,530,443
Convertible preferred stocks	\$6,649,775	—	39,981	1,425,237	—	(2,622,711)	—	—	\$5,492,282
Totals	\$7,461,198	\$—	\$39,981	\$782,896	\$2,361,361	\$(2,622,711)	\$—	\$—	\$8,022,725

* Common stock classifications are presented at the sector level, which may differ from the fund's portfolio presentation.

† Transfers during the reporting period did not represent, in the aggregate, more than 1% of the fund's net assets measured as of the end of the period.

Includes \$455,936 related to Level 3 securities still held at period end. Total change in unrealized appreciation/(depreciation) for securities (including Level 1 and Level 2) can be found in the Statement of operations.

The table below represents quantitative information on internally priced Level 3 securities that were valued using unobservable inputs. The table excludes securities with valuations provided by a broker.

Description	Fair Value	Valuation Techniques	Unobservable Input	Range of unobservable inputs (Weighted Average)	Impact to Valuation from an Increase in Input ¹
Private equity	\$2,072,288	Comparable Multiples	P/E multiple	5.4x–18.5x (13.0x) ³	Increase
			P/S multiple	0.3x–5.2x (2.5x) ³	Increase
			Uncertainty discount	35%	Decrease
			Liquidity discount	10%	Decrease
Private equity	\$97	Market transaction price	Liquidity discount	25%	Decrease
Private equity	\$458,058	Comparable multiples	EV/sales multiple	1.1x–2.0x (1.507x) ²	Increase
			Liquidity discount	25%	Decrease
			Uncertainty discount	10%	Decrease

¹Expected directional change in fair value that would result from an increase in the unobservable input.

²Based on estimated fiscal year 2018 EV/sales peer multiples.

³Based on estimated fiscal year 2019 P/E and P/S peer multiples.

The accompanying notes are an integral part of these financial statements.

Statement of assets and liabilities

12/31/18

Assets	
Investment in securities, at value, including \$51,780,589 of securities on loan (Notes 1 and 8):	
Unaffiliated issuers (identified cost \$549,617,139)	\$722,037,571
Affiliated issuers (identified cost \$68,014,119) (Notes 1 and 5)	68,014,119
Cash	10
Dividends, interest and other receivables	729,306
Receivable for shares of the fund sold	81,638
Receivable for variation margin on futures contracts (Note 1)	87,360
Unrealized appreciation on forward currency contracts (Note 1)	17,098
Total assets	790,967,102
Liabilities	
Payable for shares of the fund repurchased	562,460
Payable for compensation of Manager (Note 2)	353,765
Payable for custodian fees (Note 2)	17,116
Payable for investor servicing fees (Note 2)	84,957
Payable for Trustee compensation and expenses (Note 2)	503,231
Payable for administrative services (Note 2)	8,008
Payable for distribution fees (Note 2)	38,515
Collateral on securities loaned, at value (Note 1)	52,673,575
Collateral on certain derivative contracts, at value (Notes 1 and 8)	124,015
Other accrued expenses	135,699
Total liabilities	54,501,341
Net assets	\$736,465,761
Represented by	
Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$452,209,473
Total distributable earnings (Note 1)	284,256,288
Total — Representing net assets applicable to capital shares outstanding	\$736,465,761
Computation of net asset value Class IA	
Net assets	\$558,403,733
Number of shares outstanding	57,188,521
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$9.76
Computation of net asset value Class IB	
Net assets	\$178,062,028
Number of shares outstanding	18,602,422
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$9.57

The accompanying notes are an integral part of these financial statements.

Statement of operations

Year ended 12/31/18

Investment income

Dividends (net of foreign tax of \$38,170)	\$6,819,103
Interest (including interest income of \$180,750 from investments in affiliated issuers) (Note 5)	195,610
Securities lending (net of expenses) (Notes 1 and 5)	126,131
Total investment income	7,140,844

Expenses

Compensation of Manager (Note 2)	4,540,204
Investor servicing fees (Note 2)	575,941
Custodian fees (Note 2)	34,436
Trustee compensation and expenses (Note 2)	40,698
Distribution fees (Note 2)	489,641
Administrative services (Note 2)	23,347
Other	279,832
Total expenses	5,984,099
Expense reduction (Note 2)	(22,363)
Net expenses	5,961,736
Net investment income	1,179,108

Realized and unrealized gain (loss)

Net realized gain (loss) on:

Securities from unaffiliated issuers (Notes 1 and 3)	114,201,362
Foreign currency transactions (Note 1)	(3,890)
Forward currency contracts (Note 1)	978,179
Futures contracts (Note 1)	(951,201)
Written options (Note 1)	245,832
Total net realized gain	114,470,282

Change in net unrealized appreciation (depreciation) on:

Securities from unaffiliated issuers	(89,975,540)
Assets and liabilities in foreign currencies	(948)
Forward currency contracts	173,948
Futures contracts	(652,661)
Total change in net unrealized depreciation	(90,455,201)

Net gain on investments	24,015,081
Net increase in net assets resulting from operations	\$25,194,189

The accompanying notes are an integral part of these financial statements.

Statement of changes in net assets

	Year ended 12/31/18	Year ended 12/31/17
Increase (decrease) in net assets		
Operations:		
Net investment income	\$1,179,108	\$2,377,975
Net realized gain on investments and foreign currency transactions	114,470,282	70,753,558
Net unrealized appreciation (depreciation) of investments and assets and liabilities in foreign currencies	(90,455,201)	127,087,354
Net increase in net assets resulting from operations	25,194,189	200,218,887
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(347,604)	(830,536)
Class IB	—	(181,949)
Net realized short-term gain on investments		
Class IA	(1,100,746)	(5,749,861)
Class IB	(349,887)	(1,819,492)
From net realized long-term gain on investments		
Class IA	(35,397,666)	(1,661,071)
Class IB	(11,251,641)	(525,631)
Increase in capital from settlement payments	—	87,939
Decrease from capital share transactions (Note 4)	(33,844,594)	(73,118,549)
Total increase (decrease) in net assets	(57,097,949)	116,419,737
Net assets:		
Beginning of year	793,563,710	677,143,973
End of year (Note 1)	\$736,465,761	\$793,563,710

The accompanying notes are an integral part of these financial statements.

Financial highlights (For a common share outstanding throughout the period)

Period ended	INVESTMENT OPERATIONS:				LESS DISTRIBUTIONS:				RATIOS AND SUPPLEMENTAL DATA:					
	Net asset value, beginning of period	Net investment income (loss) ^a	Net realized and unrealized gain (loss) on investments	Total from investment operations	From net investment income	From net realized gain on investments	Total distributions	Non-recurring reimbursements	Net asset value, end of period	Total return at net asset value (%) ^{b,c}	Net assets, end of period (in thousands)	Ratio of expenses to average net assets (%) ^{b,d,f}	Ratio of net investment income (loss) to average net assets (%) ^f	Portfolio turnover (%)
Class IA														
12/31/18	\$10.14	.02	.24	.26	(.01)	(.63)	(.64)	—	\$9.76	2.60	\$558,404	.67	.20	56
12/31/17	7.84	.03	2.40	2.43	(.01)	(.12)	(.13)	— ^g	10.14	31.30	606,169	.66	.38	59
12/31/16	8.15	.04	.44	.48	(.06)	(.73)	(.79)	—	7.84	6.72	517,274	.74 ^e	.53 ^e	71
12/31/15	9.38	.03	.13	.16	(.06)	(1.33)	(1.39)	—	8.15	1.28	15,243	.82	.34	79
12/31/14	8.66	.05	1.12	1.17	(.04)	(.41)	(.45)	—	9.38	14.16	15,375	.85	.53	69
Class IB														
12/31/18	\$9.97	— ^h	.23	.23	—	(.63)	(.63)	—	\$9.57	2.38	\$178,062	.92	(.05)	56
12/31/17	7.73	.01	2.36	2.37	(.01)	(.12)	(.13)	— ^g	9.97	30.90	187,395	.91	.13	59
12/31/16	8.04	.02	.44	.46	(.04)	(.73)	(.77)	—	7.73	6.51	159,870	.99 ^e	.33 ^e	71
12/31/15	9.27	.01	.12	.13	(.03)	(1.33)	(1.36)	—	8.04	1.03	13,278	1.07	.09	79
12/31/14	8.56	.02	1.12	1.14	(.02)	(.41)	(.43)	—	9.27	13.91	14,368	1.10	.28	69

^a Per share net investment income (loss) has been determined on the basis of the weighted average number of shares outstanding during the period.

^b The charges and expenses at the insurance company separate account level are not reflected.

^c Total return assumes dividend reinvestment.

^d Includes amounts paid through expense offset and/or brokerage/service arrangements, if any (Note 2). Also excludes acquired fund fees and expenses, if any.

^e Reflects a voluntary waiver of certain fund expenses in effect during the period. As a result of such waiver, the expenses of each class reflect a reduction of less than 0.01% as a percentage of average net assets.

^f Reflects an involuntary contractual expense limitation in effect during the period. As a result of such limitation, the expenses of each class reflect a reduction of the following amounts (Note 2):

	Percentage of average net assets
12/31/16	<0.01%
12/31/15	0.09
12/31/14	0.08

^g Reflects a non-recurring reimbursement pursuant to a settlement between the Securities and Exchange Commission (the SEC) and JPMorgan Chase which amounted to less than \$0.01 per share outstanding on September 29, 2017.

^h Amount represents less than \$0.01 per share.

The accompanying notes are an integral part of these financial statements.

Notes to financial statements 12/31/18

Within the following Notes to financial statements, references to “State Street” represent State Street Bank and Trust Company, references to “the SEC” represent the Securities and Exchange Commission, references to “Putnam Management” represent Putnam Investment Management, LLC, the fund’s manager, an indirect wholly-owned subsidiary of Putnam Investments, LLC and references to “OTC”, if any, represent over-the-counter. Unless otherwise noted, the “reporting period” represents the period from January 1, 2018 through December 31, 2018.

Putnam VT Growth Opportunities Fund (the fund) is a diversified series of Putnam Variable Trust (the Trust), a Massachusetts business trust registered under the Investment Company Act of 1940, as amended, as an open-end management investment company. The goal of the fund is to seek capital appreciation. The fund invests mainly in common stocks of large U.S. companies, with a focus on growth stocks. Growth stocks are issued by 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. Putnam Management may consider, among other factors, a company’s 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.

The fund offers class IA and class IB shares of beneficial interest. Class IA shares are offered at net asset value and are not subject to a distribution fee. Class IB shares are offered at net asset value and pay an ongoing distribution fee, which is identified in Note 2.

In the normal course of business, the fund enters into contracts that may include agreements to indemnify another party under given circumstances. The fund’s maximum exposure under these arrangements is unknown as this would involve future claims that may be, but have not yet been, made against the fund. However, the fund’s management team expects the risk of material loss to be remote.

The fund has entered into contractual arrangements with an investment adviser, administrator, distributor, shareholder servicing agent and custodian, who each provide services to the fund. Unless expressly stated otherwise, shareholders are not parties to, or intended beneficiaries of these contractual arrangements, and these contractual arrangements are not intended to create any shareholder right to enforce them against the service providers or to seek any remedy under them against the service providers, either directly or on behalf of the fund.

Under the fund’s Amended and Restated Agreement and Declaration of Trust, any claims asserted against or on behalf of the Putnam Funds, including claims against Trustees and Officers, must be brought in state and federal courts located within the Commonwealth of Massachusetts.

Note 1 — Significant accounting policies

The following is a summary of significant accounting policies consistently followed by the fund in the preparation of its financial statements. The preparation of financial statements is in conformity with accounting principles generally accepted in the United States of America and requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities in the financial statements and the reported amounts of increases and decreases in net assets from operations. Actual results could differ from those estimates. Subsequent events after the Statement of assets and liabilities date through the date that the financial statements were issued have been evaluated in the preparation of the financial statements.

Investment income, realized and unrealized gains and losses and expenses of the fund are borne pro-rata based on the relative net assets of each class to the total net assets of the fund, except that each class bears expenses unique to that class (including the distribution fees applicable to such classes). Each class votes as a class only with respect to its own distribution plan or other matters on which a class vote is required by law or determined by the Trustees. If the fund were liquidated, shares of each class would receive their pro-rata share of the net assets of the fund. In addition, the Trustees declare separate dividends on each class of shares.

Security valuation Portfolio securities and other investments are valued using policies and procedures adopted by the Board of Trustees. The Trustees have formed a Pricing Committee to oversee the implementation of these procedures and have delegated responsibility for valuing the fund’s assets in accordance with these procedures to Putnam Management. Putnam Management has established an internal Valuation Committee that is responsible for making fair value determinations, evaluating the effectiveness of the pricing policies of the fund and reporting to the Pricing Committee.

Investments for which market quotations are readily available are valued at the last reported sales price on their principal exchange, or official closing price for certain markets, and are classified as Level 1 securities under Accounting Standards Codification 820 *Fair Value Measurements and Disclosures* (ASC 820). If no sales are reported, as in the case of some securities that are traded OTC, a security is valued at its last reported bid price and is generally categorized as a Level 2 security.

Investments in open-end investment companies (excluding exchange-traded funds), if any, which can be classified as Level 1 or Level 2 securities, are valued based on their net asset value. The net asset value of such investment companies equals the total value of their assets less their liabilities and divided by the number of their outstanding shares.

Market quotations are not considered to be readily available for certain debt obligations (including short-term investments with remaining maturities of 60 days or less) and other investments; such investments are valued on the basis of valuations furnished by an independent pricing service approved by the Trustees or dealers selected by Putnam Management. Such services or dealers determine valuations for normal institutional-size trading units of such securities using methods based on market transactions for comparable securities and various relationships, generally recognized by institutional traders, between securities (which consider such factors as security prices, yields, maturities and ratings). These securities will generally be categorized as Level 2.

Many securities markets and exchanges outside the U.S. close prior to the scheduled close of the New York Stock Exchange and therefore the closing prices for securities in such markets or on such exchanges may not fully reflect events that occur after such close but before the scheduled close of the New York Stock Exchange. Accordingly, on certain days, the fund will fair value certain foreign equity securities taking into account multiple factors including movements in the U.S. securities markets, currency valuations and comparisons to the valuation of American Depository Receipts, exchange-traded funds and futures contracts. The foreign equity securities, which would generally be classified as Level 1 securities, will be transferred to Level 2 of the fair value hierarchy when they are valued at fair value. The number of days on which fair value prices will be used will depend on market activity and it is possible that fair value prices will be used by the fund to a significant extent. Securities quoted in foreign currencies, if any, are translated into U.S. dollars at the current exchange rate.

To the extent a pricing service or dealer is unable to value a security or provides a valuation that Putnam Management does not believe accurately reflects the security’s fair value, the security will be valued at fair value by Putnam Management in accordance with policies and procedures approved by the Trustees. Certain investments, including certain restricted and illiquid securities and derivatives, are also valued at fair value following procedures approved by the Trustees. These valuations consider such factors as significant market or specific security events such as interest rate or credit quality changes, various relationships with other securities, discount rates, U.S. Treasury, U.S. swap and credit yields, index levels, convexity exposures, recovery rates, sales and other multiples and resale restrictions. These securities are classified as Level 2 or as Level 3 depending on the priority of the significant inputs.

To assess the continuing appropriateness of fair valuations, the Valuation Committee reviews and affirms the reasonableness of such valuations on a regular basis after considering all relevant information that is reasonably available. Such valuations and procedures are reviewed periodically by the Trustees. The fair value of securities is generally determined as the amount that the fund could reasonably expect to realize from an orderly disposition of such securities over a reasonable period of time. By its nature, a fair value price is a good faith estimate of the value of a security in a current sale and does not reflect an actual market price, which may be different by a material amount.

Security transactions and related investment income Security transactions are recorded on the trade date (the date the order to buy or sell is executed). Gains or losses on securities sold are determined on the identified cost basis.

Interest income, net of any applicable withholding taxes, is recorded on the accrual basis. Dividend income, net of any applicable withholding taxes, is recognized on the ex-dividend date except that certain dividends from foreign securities, if any, are recognized as soon as the fund is informed of the ex-dividend date. Non-cash dividends, if any, are recorded at the fair value of the securities received. Dividends representing a return of capital or capital gains, if any, are reflected as a reduction of cost and/or as a realized gain.

All premiums/discounts are amortized/accreted on a yield-to-maturity basis.

Foreign currency translation The accounting records of the fund are maintained in U.S. dollars. The fair value of foreign securities, currency holdings, and other assets and liabilities is recorded in the books and records of the fund after translation to U.S. dollars based on the exchange rates on that day. The cost of each security is determined using historical exchange rates. Income and withholding taxes are translated at prevailing exchange rates when earned or incurred. The fund does not isolate that portion of realized or unrealized gains or losses resulting from changes in the foreign exchange rate on investments from fluctuations arising from changes in the market prices of the securities. Such gains and losses are included with the net realized and unrealized gain or loss on investments. Net realized gains and losses on foreign currency transactions represent net realized exchange gains or losses on disposition of foreign currencies, currency gains and losses realized between the trade and settlement dates on securities transactions and the difference between the amount of investment income and foreign withholding taxes recorded on the fund's books and the U.S. dollar equivalent amounts actually received or paid. Net unrealized appreciation and depreciation of assets and liabilities in foreign currencies arise from changes in the value of assets and liabilities other than investments at the period end, resulting from changes in the exchange rate.

Options contracts The fund uses options contracts to hedge against changes in values of securities it owns, owned or expects to own.

The potential risk to the fund is that the change in value of options contracts may not correspond to the change in value of the hedged instruments. In addition, losses may arise from changes in the value of the underlying instruments if there is an illiquid secondary market for the contracts, if interest or exchange rates move unexpectedly or if the counterparty to the contract is unable to perform. Realized gains and losses on purchased options are included in realized gains and losses on investment securities. If a written call option is exercised, the premium originally received is recorded as an addition to sales proceeds. If a written put option is exercised, the premium originally received is recorded as a reduction to the cost of investments.

Exchange-traded options are valued at the last sale price or, if no sales are reported, the last bid price for purchased options and the last ask price for written options. OTC traded options are valued using prices supplied by dealers.

Options on swaps are similar to options on securities except that the premium paid or received is to buy or grant the right to enter into a previously agreed upon interest rate or credit default contract. Forward premium swap option contracts include premiums that have extended settlement dates. The delayed settlement of the premiums is factored into the daily valuation of the option contracts. In the case of interest rate cap and floor contracts, in return for a premium, ongoing payments between two parties are based on interest rates exceeding a specified rate, in the case of a cap contract, or falling below a specified rate in the case of a floor contract.

Written option contracts outstanding at period end, if any, are listed after the fund's portfolio.

Futures contracts The fund uses futures contracts to equitize cash.

The potential risk to the fund is that the change in value of futures contracts may not correspond to the change in value of the hedged instruments. In addition, losses may arise from changes in the value of the underlying instruments, if there is an illiquid secondary market for the contracts, if interest or exchange rates move unexpectedly or if the counterparty to the contract is unable to perform. With futures, there is minimal counterparty credit risk to the fund since futures are exchange traded and the exchange's clearinghouse, as counterparty to all exchange traded futures, guarantees the futures against default. Risks may exceed amounts recognized on the Statement of assets and liabilities. When the contract is closed, the fund records a realized gain or loss equal to the difference between the value of the contract at the time it was opened and the value at the time it was closed.

Futures contracts are valued at the quoted daily settlement prices established by the exchange on which they trade. The fund and the broker agree to exchange an amount of cash equal to the daily fluctuation in the value of the futures contract. Such receipts or payments are known as "variation margin."

Futures contracts outstanding at period end, if any, are listed after the fund's portfolio.

Forward currency contracts The fund buys and sells forward currency contracts, which are agreements between two parties to buy and sell currencies at a set price on a future date. These contracts are used to hedge foreign exchange risk.

The U.S. dollar value of forward currency contracts is determined using current forward currency exchange rates supplied by a quotation service. The fair value of the contract will fluctuate with changes in currency exchange rates. The contract is marked to market daily and the change in fair value is recorded as an unrealized gain or loss. The fund records a realized gain or loss equal to the difference between the value of the contract at the time it was opened and the value at the time it was closed when the contract matures or by delivery of the currency. The fund could be exposed to risk if the value of the currency changes unfavorably, if the counterparties to the contracts are unable to meet the terms of their contracts or if the fund is unable to enter into a closing position. Risks may exceed amounts recognized on the Statement of assets and liabilities.

Forward currency contracts outstanding at period end, if any, are listed after the fund's portfolio.

Master agreements The fund is a party to ISDA (International Swaps and Derivatives Association, Inc.) Master Agreements (Master Agreements) with certain counterparties that govern OTC derivative and foreign exchange contracts entered into from time to time. The Master Agreements may contain provisions regarding, among other things, the parties' general obligations, representations, agreements, collateral requirements, events of default and early termination. With respect to certain counterparties, in accordance with the terms of the Master Agreements, collateral posted to the fund is held in a segregated account by the fund's custodian and, with respect to those amounts which can be sold or repledged, is presented in the fund's portfolio.

Collateral pledged by the fund is segregated by the fund's custodian and identified in the fund's portfolio. Collateral can be in the form of cash or debt securities issued by the U.S. Government or related agencies or other securities as agreed to by the fund and the applicable counterparty. Collateral requirements are determined based on the fund's net position with each counterparty.

Termination events applicable to the fund may occur upon a decline in the fund's net assets below a specified threshold over a certain period of time. Termination events applicable to counterparties may occur upon a decline in the counterparty's long-term and short-term credit ratings below a specified level. In each case, upon occurrence, the other party may elect to terminate early and cause settlement of all derivative and foreign exchange contracts outstanding, including the payment of any losses and costs resulting from such early termination, as reasonably determined by the terminating party. Any decision by one or more of the fund's counterparties to elect early termination could impact the fund's future derivative activity.

At the close of the reporting period, the fund did not have a net liability position on open derivative contracts subject to the Master Agreements.

Securities lending The fund may lend securities, through its agent, to qualified borrowers in order to earn additional income. The loans are collateralized by cash in an amount at least equal to the fair value of the securities loaned. The fair value of securities loaned is determined daily and any additional required collateral is allocated to the fund on the next business day. The remaining maturities of the securities lending transactions are considered overnight and continuous. The risk of borrower default will be borne by the fund's agent; the fund will bear the risk of loss with respect to the investment of the cash collateral. Income from securities lending, net of expenses, is included in investment income on the Statement of operations. Cash collateral is invested in Putnam Cash Collateral Pool, LLC, a limited liability company managed by an affiliate of Putnam Management. Investments in Putnam Cash Collateral Pool, LLC are valued at its closing net asset value each business day. There are no management fees charged to Putnam Cash Collateral Pool, LLC. At the close of the reporting period, the fund received cash collateral of \$52,673,575 and the value of securities loaned amounted to \$51,780,589.

Interfund lending The fund, along with other Putnam funds, may participate in an interfund lending program pursuant to an exemptive order issued by the SEC. This program allows the fund to borrow from or lend to other Putnam funds that permit such transactions. Interfund lending transactions are subject to each fund's investment policies and borrowing and lending limits. Interest earned or paid on the interfund lending transaction will be based on the average of certain current market rates. During the reporting period, the fund did not utilize the program.

Lines of credit The fund participates, along with other Putnam funds, in a \$317.5 million unsecured committed line of credit and a \$235.5 million unsecured uncommitted line of credit, both provided by State Street. Borrowings may be made for temporary or emergency purposes, including the funding of shareholder redemption requests and trade settlements. Interest is charged to the fund based on the fund's borrowing at a rate equal to 1.25% plus the higher of (1) the Federal Funds rate and (2) the overnight LIBOR for the committed line of credit and the

Federal Funds rate plus 1.30% for the uncommitted line of credit. A closing fee equal to 0.04% of the committed line of credit and 0.04% of the uncommitted line of credit has been paid by the participating funds. In addition, a commitment fee of 0.21% per annum on any unutilized portion of the committed line of credit is allocated to the participating funds based on their relative net assets and paid quarterly. During the reporting period, the fund had no borrowings against these arrangements.

Federal taxes It is the policy of the fund to distribute all of its taxable income within the prescribed time period and otherwise comply with the provisions of the Internal Revenue Code of 1986, as amended (the Code), applicable to regulated investment companies.

The fund is subject to the provisions of Accounting Standards Codification 740 *Income Taxes* (ASC 740). ASC 740 sets forth a minimum threshold for financial statement recognition of the benefit of a tax position taken or expected to be taken in a tax return. The fund did not have a liability to record for any unrecognized tax benefits in the accompanying financial statements. No provision has been made for federal taxes on income, capital gains or unrealized appreciation on securities held nor for excise tax on income and capital gains. Each of the fund's federal tax returns for the prior three fiscal years remains subject to examination by the Internal Revenue Service.

The fund may also be subject to taxes imposed by governments of countries in which it invests. Such taxes are generally based on either income or gains earned or repatriated. The fund accrues and applies such taxes to net investment income, net realized gains and net unrealized gains as income and/or capital gains are earned. In some cases, the fund may be entitled to reclaim all or a portion of such taxes, and such reclaim amounts, if any, are reflected as an asset on the fund's books. In many cases, however, the fund may not receive such amounts for an extended period of time, depending on the country of investment.

Distributions to shareholders Distributions to shareholders from net investment income are recorded by the fund on the ex-dividend date. Distributions from capital gains, if any, are recorded on the ex-dividend date and paid at least annually. The amount and character of income and gains to be distributed are determined in accordance with income tax regulations, which may differ from generally accepted accounting principles. These differences include temporary and/or permanent differences from losses on wash sale transactions, foreign currency gains and losses, unrealized gains and losses on certain futures contracts and straddle loss deferrals. Reclassifications are made to the fund's capital accounts to reflect income and gains available for distribution (or available capital loss carryovers) under income tax regulations. At the close of the reporting period, the fund reclassified \$791,816 to increase undistributed net investment income, \$769 to decrease paid-in capital and \$791,047 to decrease accumulated net realized gain.

Tax cost of investments includes adjustments to net unrealized appreciation (depreciation) which may not necessarily be final tax cost basis adjustments, but closely approximate the tax basis unrealized gains and losses that may be realized and distributed to shareholders. The tax basis components of distributable earnings and the federal tax cost as of the close of the reporting period were as follows:

Unrealized appreciation	\$204,428,331
Unrealized depreciation	(34,021,542)
Net unrealized appreciation	170,406,789
Undistributed ordinary income	2,160,920
Undistributed long-term gain	109,243,768
Undistributed short-term gain	2,444,467
Cost for federal income tax purposes	\$619,007,080

For the fiscal year ended December 31, 2017, the fund had undistributed net investment income of \$520,502.

Expenses of the Trust Expenses directly charged or attributable to any fund will be paid from the assets of that fund. Generally, expenses of the Trust will be allocated among and charged to the assets of each fund on a basis that the Trustees deem fair and equitable, which may be based on the relative assets of each fund or the nature of the services performed and relative applicability to each fund.

Beneficial interest At the close of the reporting period, insurance companies or their separate accounts were record owners of all but a de minimis number of the shares of the fund. Approximately 40.3% of the fund is owned by accounts of one insurance company.

Note 2 — Management fee, administrative services and other transactions

The fund pays Putnam Management a management fee (based on the fund's average net assets and computed and paid monthly) at annual rates that may vary based on the average of the aggregate net assets of all open-end mutual

funds sponsored by Putnam Management (excluding net assets of funds that are invested in, or that are invested in by, other Putnam funds to the extent necessary to avoid "double counting" of those assets). Such annual rates may vary as follows:

0.710%	of the first \$5 billion,
0.660%	of the next \$5 billion,
0.610%	of the next \$10 billion,
0.560%	of the next \$10 billion,
0.510%	of the next \$50 billion,
0.490%	of the next \$50 billion,
0.480%	of the next \$100 billion and
0.475%	of any excess thereafter.

For the reporting period, the management fee represented an effective rate (excluding the impact from any expense waivers in effect) of 0.552% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2020, to waive fees and/or reimburse the fund's expenses to the extent necessary to limit the cumulative expenses of the fund, exclusive of brokerage, interest, taxes, investment-related expenses, extraordinary expenses, acquired fund fees and expenses and payments under the fund's investor servicing contract, investment management contract and distribution plan, on a fiscal year-to-date basis to an annual rate of 0.20% of the fund's average net assets over such fiscal year-to-date period. During the reporting period, the fund's expenses were not reduced as a result of this limit.

Putnam Investments Limited (PIL), an affiliate of Putnam Management, is authorized by the Trustees to manage a separate portion of the assets of the fund as determined by Putnam Management from time to time. PIL did not manage any portion of the assets of the fund during the reporting period. If Putnam Management were to engage the services of PIL, Putnam Management would pay a quarterly sub-management fee to PIL for its services at an annual rate of 0.35% of the average net assets of the portion of the fund managed by PIL.

The fund reimburses Putnam Management an allocated amount for the compensation and related expenses of certain officers of the fund and their staff who provide administrative services to the fund. The aggregate amount of all such reimbursements is determined annually by the Trustees.

Custodial functions for the fund's assets are provided by State Street. Custody fees are based on the fund's asset level, the number of its security holdings and transaction volumes.

Putnam Investor Services, Inc., an affiliate of Putnam Management, provides investor servicing agent functions to the fund. Putnam Investor Services, Inc. was paid a monthly fee for investor servicing at an annual rate of 0.07% of the fund's average daily net assets. During the reporting period, the expenses for each class of shares related to investor servicing fees were as follows:

Class IA	\$438,848
Class IB	137,093
Total	\$575,941

The fund has entered into expense offset arrangements with Putnam Investor Services, Inc. and State Street whereby Putnam Investor Services, Inc.'s and State Street's fees are reduced by credits allowed on cash balances. The fund also reduced expenses through brokerage/service arrangements. For the reporting period, the fund's expenses were reduced by \$466 under the expense offset arrangements and by \$21,897 under the brokerage/service arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$622, as a quarterly retainer, has been allocated to the fund, and an additional fee for each Trustees meeting attended. Trustees also are reimbursed for expenses they incur relating to their services as Trustees.

The fund has adopted a Trustee Fee Deferral Plan (the Deferral Plan) which allows the Trustees to defer the receipt of all or a portion of Trustees fees payable on or after July 1, 1995. The deferred fees remain invested in certain Putnam funds until distribution in accordance with the Deferral Plan.

The fund has adopted an unfunded noncontributory defined benefit pension plan (the Pension Plan) covering all Trustees of the fund who have served as a Trustee for at least five years and were first elected prior to 2004. Benefits under the Pension Plan are equal to 50% of the Trustee's average annual attendance and retainer fees for the three years ended December 31, 2005. The retirement benefit is payable during a Trustee's lifetime, beginning the year following retirement, for the number of years of service through December 31, 2006. Pension expense for the fund is included in Trustee compensation and expenses in the Statement of operations. Accrued pension liability is included in Payable for

Trustee compensation and expenses in the Statement of assets and liabilities. The Trustees have terminated the Pension Plan with respect to any Trustee first elected after 2003.

The fund has adopted a distribution plan (the Plan) with respect to its class IB shares pursuant to Rule 12b-1 under the Investment Company Act of 1940. The purpose of the Plan is to compensate Putnam Retail Management Limited Partnership, an indirect wholly-owned subsidiary of Putnam Investments, LLC, for services provided and expenses incurred in distributing shares of the fund. The Plan provides for payment by the fund to Putnam Retail Management Limited Partnership at an annual rate of up to 0.35% of the average net assets attributable to the fund's class IB shares. The Trustees have approved payment by the fund at an annual rate of 0.25% of the average net assets attributable to the fund's class IB shares. The expenses related to distribution fees during the reporting period are included in Distribution fees in the Statement of operations.

Note 4 — Capital shares

At the close of the reporting period, there were an unlimited number of shares of beneficial interest authorized. Subscriptions and redemptions are presented at the omnibus level. Transactions in capital shares were as follows:

	Class IA shares				Class IB shares			
	Year ended 12/31/18		Year ended 12/31/17		Year ended 12/31/18		Year ended 12/31/17	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	577,308	\$6,072,819	428,158	\$3,930,097	1,854,244	\$19,311,200	1,520,944	\$13,536,156
Shares issued in connection with reinvestment of distributions	3,822,201	36,846,016	968,445	8,241,468	1,226,377	11,601,528	301,560	2,527,072
	4,399,509	42,918,835	1,396,603	12,171,565	3,080,621	30,912,728	1,822,504	16,063,228
Shares repurchased	(6,995,925)	(73,731,236)	(7,561,841)	(68,442,850)	(3,273,705)	(33,944,921)	(3,709,515)	(32,910,492)
Net decrease	(2,596,416)	\$(30,812,401)	(6,165,238)	\$(56,271,285)	(193,084)	\$(3,032,193)	(1,887,011)	\$(16,847,264)

Note 5 — Affiliated transactions

Transactions during the reporting period with any company which is under common ownership or control were as follows:

Name of affiliate	Fair value as of 12/31/17	Purchase cost	Sale proceeds	Investment income	Shares outstanding and fair value as of 12/31/18
Short-term investments					
Putnam Cash Collateral Pool, LLC*	\$30,832,548	\$372,413,762	\$350,572,735	\$955,256	\$52,673,575
Putnam Short Term Investment Fund**	8,790,212	183,213,021	176,662,689	180,750	15,340,544
Total Short-term investments	\$39,622,760	\$555,626,783	\$527,235,424	\$1,136,006	\$68,014,119

*No management fees are charged to Putnam Cash Collateral Pool, LLC (Note 1). Investment income shown is included in securities lending income on the Statement of operations. There were no realized or unrealized gains or losses during the period.

**Management fees charged to Putnam Short Term Investment Fund have been waived by Putnam Management. There were no realized or unrealized gains or losses during the period.

Note 6 — Market, credit and other risks

In the normal course of business, the fund trades financial instruments and enters into financial transactions where risk of potential loss exists due to changes in the market (market risk) or failure of the contracting party to the transaction to perform (credit risk). The fund may be exposed to additional credit risk that an

institution or other entity with which the fund has unsettled or open transactions will default. Investments in foreign securities involve certain risks, including those related to economic instability, unfavorable political developments, and currency fluctuations.

Note 7 — Summary of derivative activity

The volume of activity for the reporting period for any derivative type that was held during the period is listed below and was based on an average of the holdings at the end of each fiscal quarter:

Purchased equity option contracts (contract amount)	\$—*
Written equity option contracts (contract amount)	\$—*
Futures contracts (number of contracts)	20
Forward currency contracts (contract amount)	\$18,600,000
Warrants (number of warrants)	53,000

*For the reporting period there were no holdings at the end of each fiscal quarter and the transactions were considered minimal.

Note 3 — Purchases and sales of securities

During the reporting period, the cost of purchases and the proceeds from sales, excluding short-term investments, were as follows:

	Cost of purchases	Proceeds from sales
Investments in securities (Long-term)	\$452,290,953	\$544,316,233
U.S. government securities (Long-term)	—	—
Total	\$452,290,953	\$544,316,233

The fund may purchase or sell investments from or to other Putnam funds in the ordinary course of business, which can reduce the fund's transaction costs, at prices determined in accordance with SEC requirements and policies approved by the Trustees. During the reporting period, purchases or sales of long-term securities from or to other Putnam funds, if any, did not represent more than 5% of the fund's total cost of purchases and/or total proceeds from sales.

The following is a summary of the fair value of derivative instruments as of the close of the reporting period:

Fair value of derivative instruments as of the close of the reporting period

Derivatives not accounted for as hedging instruments under ASC 815	Asset derivatives		Liability derivatives	
	Statement of assets and liabilities location	Fair value	Statement of assets and liabilities location	Fair value
Foreign exchange contracts	Receivables	\$17,098	Payables	\$—
Equity contracts	Investments, Receivables, Net assets — Unrealized appreciation	—	Payables, Net assets — Unrealized depreciation	654,919*
Total		\$17,098		\$654,919

*Includes cumulative depreciation of futures contracts as reported in the fund's portfolio. Only current day's variation margin is reported within the Statement of assets and liabilities.

The following is a summary of realized and change in unrealized gains or losses of derivative instruments in the Statement of operations for the reporting period (Note 1):

Amount of realized gain or (loss) on derivatives recognized in net gain or (loss) on investments

Derivatives not accounted for as hedging instruments under ASC 815	Warrants	Options	Futures	Forward currency contracts	Total
Foreign exchange contracts	\$—	\$—	\$—	\$978,179	\$978,179
Equity contracts	—	(273,637)	(951,201)	—	(1,224,838)
Total	\$—	\$(273,637)	\$(951,201)	\$978,179	\$(246,659)

Change in unrealized appreciation or (depreciation) on derivatives recognized in net gain or (loss) on investments

Derivatives not accounted for as hedging instruments under ASC 815	Warrants	Futures	Forward currency contracts	Total
Foreign exchange contracts	\$—	\$—	\$173,948	\$173,948
Equity contracts	—	(652,661)	—	(652,661)
Total	\$—	\$(652,661)	\$173,948	\$(478,713)

Note 8 — Offsetting of financial and derivative assets and liabilities

The following table summarizes any derivatives, repurchase agreements and reverse repurchase agreements, at the end of the reporting period, that are subject to an enforceable master netting agreement or similar agreement. For securities lending transactions or borrowing transactions associated with securities sold short, if any, see Note 1. For financial reporting purposes, the fund does not offset financial assets and financial liabilities that are subject to the master netting agreements in the Statement of assets and liabilities.

	Bank of America N.A.	Merrill Lynch, Pierce, Fenner & Smith, Inc.	Total
Assets:			
Futures contracts [§]	\$—	\$87,360	\$87,360
Forward currency contracts [#]	17,098	—	17,098
Total Assets	\$17,098	\$87,360	\$104,458
Liabilities:			
Futures contracts [§]	—	—	—
Forward currency contracts [#]	—	—	—
Total Liabilities	\$—	\$—	\$—
Total Financial and Derivative Net Assets	\$17,098	\$87,360	\$104,458
Total collateral received (pledged) ^{†##}	\$17,098	\$—	
Net amount	\$—	\$87,360	
Controlled collateral received (including TBA commitments) ^{**}	\$124,015	\$—	\$124,015
Uncontrolled collateral received	\$—	\$—	\$—
Collateral (pledged) (including TBA commitments) ^{**}	\$—	\$—	\$—

** Included with Investments in securities on the Statement of assets and liabilities.

† Additional collateral may be required from certain brokers based on individual agreements.

Covered by master netting agreement (Note 1).

Any over-collateralization of total financial and derivative net assets is not shown. Collateral may include amounts related to unsettled agreements.







§ Includes current day's variation margin only as reported on the Statement of assets and liabilities, which is not collateralized. Cumulative appreciation/(depreciation) for futures contracts is represented in the tables listed after the fund's portfolio. Collateral pledged for initial margin on futures contracts, which is not included in the table above, amounted to \$691,354.

Federal tax information (Unaudited)

Pursuant to §852 of the Internal Revenue Code, as amended, the fund hereby designates \$120,589,774 as a capital gain dividend with respect to the taxable year ended December 31, 2018, or, if subsequently determined to be different, the net capital gain of such year.

The fund designated 100% of ordinary income distributions as qualifying for the dividends received deduction for corporations.

About the Trustees

Name Year of birth Position held	Principal occupations during past five years	Other directorships	
Independent Trustees			
Liaquat Ahmed Born 1952 Trustee since 2012	Pulitzer Prize-winning author of <i>Lords of Finance: The Bankers Who Broke the World</i> , whose articles on economics have appeared in such publications as the <i>New York Times</i> , <i>Foreign Affairs</i> , and the <i>Financial Times</i> . Trustee of the Brookings Institution.	The Rohatyn Group, an emerging-market fund complex that manages money for institutions	
Ravi Akhoury Born 1947 Trustee since 2009	Trustee of the Rubin Museum. From 1992 to 2007, was Chairman and CEO of MacKay Shields, a multi-product investment management firm.	English Helper, Inc., a private software company	
Barbara M. Baumann Born 1955 Trustee since 2010	President and Owner of Cross Creek Energy Corporation, a strategic consultant to domestic energy firms and direct investor in energy projects. Current Treasurer of the Board and Chair of the Finance Committee, The Denver Foundation. Member of the Finance Committee, the Children's Hospital of Colorado.	Buckeye Partners, L.P., a publicly traded master limited partnership focused on pipeline transport, storage, and distribution of petroleum products; Devon Energy Corporation, a leading independent natural gas and oil exploration and production company	
Katinka Domotorffy Born 1975 Trustee since 2012	Voting member of the Investment Committees of the Anne Ray Charitable Trust and Margaret A. Cargill Foundation, part of the Margaret A. Cargill Philanthropies. Until 2011, Partner, Chief Investment Officer, and Global Head of Quantitative Investment Strategies at Goldman Sachs Asset Management.	Great Lakes Science Center; College Now Greater Cleveland	
Catharine Bond Hill Born 1954 Trustee since 2017	Managing Director of Ithaca S+R, a not-for-profit service that helps the academic community navigate economic and technological change. From 2006 to 2016, served as the 10th President of Vassar College. Prior to 2006, was Provost of Williams College.	Director of Yale-NUS College; Alumni Fellow to the Yale Corporation	
Dr. Paul L. Joskow Born 1947 Trustee since 1997	Elizabeth and James Killian Professor of Economics, Emeritus at the Massachusetts Institute of Technology (MIT). Head of the MIT Department of Economics from 1994 to 1998 and Director of the MIT Center for Energy and Environmental Policy Research from 1999 through 2007. From 2008 to 2017, President of the Alfred P. Sloan Foundation, a philanthropic institution focused primarily on research and education issues related to science, technology, and economic performance.	Yale University; Exelon Corporation, an energy company focused on power services; Boston Symphony Orchestra; Prior to April 2013, served as Director of TransCanada Corporation and TransCanada Pipelines Ltd., energy companies focused on natural gas transmission, oil pipelines and power services	
Kenneth R. Leibler Born 1949 Trustee since 2006 Vice Chair from 2016 to 2018, and Chair since 2018	Founder and former Chairman of Boston Options Exchange, an electronic marketplace for the trading of derivative securities. Vice Chair Emeritus of the Board of Trustees of Beth Israel Deaconess Hospital in Boston, Massachusetts, and former Director of Beth Israel Deaconess Care Organization. Until November 2010, Director of Ruder Finn Group, a global communications and advertising firm.	Eversource Corporation, which operates New England's largest energy delivery system	
Robert E. Patterson Born 1945 Trustee since 1984	Until 2017, Co-Chairman of Cabot Properties, Inc., a private equity firm investing in commercial real estate, and Chairman or Co-Chairman of the Investment Committees for various Cabot Funds. Past Chairman and Trustee of the Joslin Diabetes Center.	None	
George Putnam, III Born 1951 Trustee since 1984	Chairman of New Generation Research, Inc., a publisher of financial advisory and other research services. Founder and President of New Generation Advisors, LLC, a registered investment advisor to private funds. Director of The Boston Family Office, LLC, a registered investment advisor.	None	

Name Year of birth Position held	Principal occupations during past five years	Other directorships
Manoj P. Singh Born 1952 Trustee since 2017	Until 2015, Chief Operating Officer and Global Managing Director at Deloitte Touche Tohmatsu, Ltd., a global professional services organization. Served on the Deloitte U.S. Board of Directors and the boards of Deloitte member firms in China, Mexico, and Southeast Asia.	Director of Abt Associates, a global research firm focused on health, social and environmental policy, and international development. Trustee of Carnegie Mellon University. Trustee of Rubin Museum of Art. Director of Pratham USA, an organization dedicated to children's education in India. Member of the Advisory Board of Altimetrik, a business transformation and technology solutions firm. Director of DXC Technology, a global IT services and consulting company



Interested Trustee		
Robert L. Reynolds* Born 1952 Trustee since 2008 and President of the Putnam Funds since 2009	President and Chief Executive Officer of Putnam Investments since 2008 and, since 2014, President and Chief Executive Officer of Great-West Financial, a financial services company that provides retirement savings plans, life insurance, and annuity and executive benefits products, and of Great-West Lifeco U.S. Inc., a holding company that owns Putnam Investments and Great-West Financial. Prior to joining Putnam Investments, served as Vice Chairman and Chief Operating Officer of Fidelity Investments from 2000 to 2007.	None



*Mr. Reynolds is an "interested person" (as defined in the Investment Company Act of 1940) of the fund and Putnam Investments. He is President and Chief Executive Officer of Putnam Investments, as well as the President of your fund and each of the other Putnam funds.

The address of each Trustee is 100 Federal Street, Boston, MA 02110.

As of December 31, 2018, there were 99 Putnam funds. All Trustees serve as Trustees of all Putnam funds.

Each Trustee serves for an indefinite term, until his or her resignation, retirement at age 75, removal, or death.

Officers

In addition to Robert L. Reynolds, the other officers of the fund are shown below:

Jonathan S. Horwitz *(Born 1955)*

Executive Vice President, Principal Executive Officer, and Compliance Liaison
Since 2004

Robert T. Burns *(Born 1961)*

Vice President and Chief Legal Officer
Since 2011
General Counsel, Putnam Investments, Putnam Management, and Putnam Retail Management

James F. Clark *(Born 1974)*

Vice President and Chief Compliance Officer
Since 2016
Chief Compliance Officer, Putnam Investments and Putnam Management

Michael J. Higgins *(Born 1976)*

Vice President, Treasurer, and Clerk
Since 2010

Janet C. Smith *(Born 1965)*

Vice President, Principal Financial Officer, Principal Accounting Officer, and Assistant Treasurer
Since 2007
Head of Fund Administration Services, Putnam Investments and Putnam Management

Susan G. Malloy *(Born 1957)*

Vice President and Assistant Treasurer
Since 2007
Head of Accounting, Middle Office, & Control Services, Putnam Investments and Putnam Management

Mark C. Trenchard *(Born 1962)*

Vice President and BSA Compliance Officer
Since 2002
Director of Operational Compliance, Putnam Investments and Putnam Retail Management

Nancy E. Florek *(Born 1957)*

Vice President, Director of Proxy Voting and Corporate Governance, Assistant Clerk, and Assistant Treasurer
Since 2000

Denere P. Poulack *(Born 1968)*

Assistant Vice President, Assistant Clerk, and Assistant Treasurer
Since 2004

The principal occupations of the officers for the past five years have been with the employers as shown above, although in some cases they have held different positions with such employers. The address of each officer is 100 Federal Street, Boston, MA 02110.

Other important information

Proxy voting

Putnam is committed to managing our mutual funds in the best interests of our shareholders. The Putnam funds' proxy voting guidelines and procedures, as well as information regarding how your fund voted proxies relating to portfolio securities during the 12-month period ended June 30, 2018, are available in the Individual Investors section of putnam.com and on the Securities and Exchange Commission's (SEC) website, www.sec.gov. If you have questions about finding forms on the SEC's website, you may call the SEC at 1-800-SEC-0330. You may also obtain the Putnam funds' proxy voting guidelines and procedures at no charge by calling Putnam's Shareholder Services at 1-800-225-1581.

Fund portfolio holdings

Each Putnam VT fund will file a complete schedule of its portfolio holdings with the SEC for the first and third quarters of each fiscal year on Form N-Q. Shareholders may obtain the fund's Form N-Q on the SEC's website at www.sec.gov.

Fund information

Investment Manager

Putnam Investment Management, LLC
100 Federal Street
Boston, MA 02110

Investment Sub-Advisor

Putnam Investments Limited
16 St James's Street
London, England SW1A 1ER

Marketing Services

Putnam Retail Management
100 Federal Street
Boston, MA 02110

Investor Servicing Agent

Putnam Investments
Mailing address:
P.O. Box 219697
Kansas City, MO 64121-9697
1-800-225-1581

Custodian

State Street Bank and Trust Company

Legal Counsel

Ropes & Gray LLP

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP

Trustees

Kenneth R. Leibler, Chair
Liaquat Ahamed
Ravi Akhoury
Barbara M. Baumann
Katinka Domotorffy
Catharine Bond Hill
Paul L. Joskow
Robert E. Patterson
George Putnam, III
Robert L. Reynolds
Manoj P. Singh

The fund's Statement of Additional Information contains additional information about the fund's Trustees and is available without charge upon request by calling 1-800-225-1581.

