

A world of investing.®



Putnam Variable Trust

Annual report

12 | 31 | 17

Putnam VT
Multi-Cap Value Fund

Message from the Trustees

February 8, 2018

Dear Shareholder:

We enter 2018 on the heels of an impressive year for global stock markets. While bond market performance was a bit uneven in 2017, stocks in most regions worldwide delivered solid advances and encountered very little volatility. As seasoned investors, we realize that benign markets like this rarely last long, and we are monitoring risks accordingly.

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.

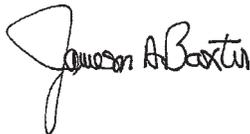
In all environments, we believe investors should remain focused on time-tested strategies: maintain a well-diversified portfolio, think about long-term goals, and speak regularly with your financial advisor. In the following pages, you will find an overview of your fund's performance for the reporting period as well as an outlook for the coming months.

Thank you for investing with Putnam.

Respectfully yours,



Robert L. Reynolds
President and Chief Executive Officer
Putnam Investments



Jameson A. Baxter
Chair, Board of Trustees

Performance summary (as of 12/31/17)

Investment objective

Capital appreciation, and, as a secondary objective, current income

Net asset value December 31, 2017

Class IA: \$18.48

Class IB: \$18.42

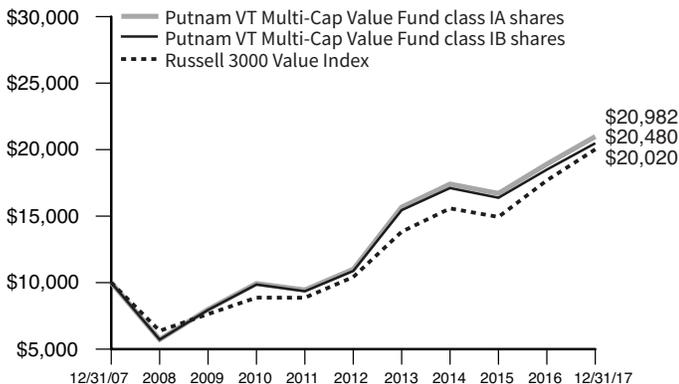
Total return at net asset value

(as of 12/31/17)	Class IA shares*	Class IB shares*	Russell 3000 Value Index
1 year	10.94%	10.71%	13.19%
5 years	90.67	88.32	92.13
Annualized	13.78	13.50	13.95
10 years	109.82	104.80	100.20
Annualized	7.69	7.43	7.19
Life	315.32	300.74	283.71
Annualized	10.20	9.93	9.60

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

* Class inception date: May 1, 2003.

Cumulative total returns of a \$10,000 investment in class IA and class IB shares at net asset value — since 12/31/07

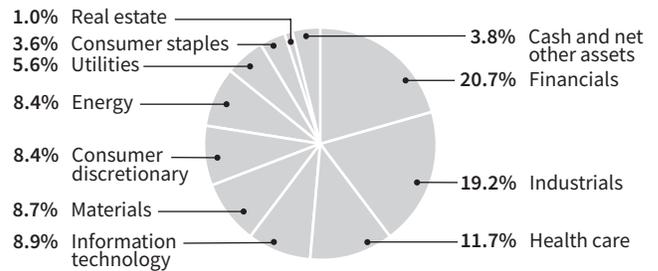


The Russell 3000 Value Index is an unmanaged index of those companies in the broad-market Russell 3000 Index chosen for their value orientation.

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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

What factors influenced the U.S. equity markets during the 12-month reporting period ended December 31, 2017?

Investor optimism about tax reform, which was signed into law on December 22, 2017; solid U.S. economic growth; and strong corporate earnings contributed to a favorable environment for equities during the period. Led by better-than-expected results in the information technology sector, major equity indexes continued to test new highs with low volatility during the period — posting their best calendar year since 2013.

One persistent theme that defined the stock market in 2017 was the outperformance of growth stocks over value stocks — a reversal of what we saw in 2016. While it is not unusual for these two investing styles to diverge, it suggests that growth-related factors, such as earnings momentum and improving business fundamentals, drove stock performance, rather than valuations. Investors also saw a reversal of stock leadership by market capitalization. After leading performance in 2016, small- and mid-cap stocks underperformed large caps in 2017.

How did Putnam VT Multi-Cap Value Fund perform during the 12-month reporting period?

The fund's class IA shares returned 10.94% for the period, while the benchmark, the Russell 3000 Value Index, delivered a return of 13.19%. Stock selection delivered mixed results, but overall was a detractor for the fund's performance relative to the benchmark. Unfavorable stock selection in the health-care, financials, materials, and consumer staples sectors weighed on results. However, stock selection within the industrials, utilities, and information technology sectors helped to offset some of that underperformance for the period. Given the strength of the equity rally, holding modest transactional cash in the portfolio and not being fully invested also detracted from fund performance relative to the benchmark.

Sector allocation results were positive for the 12-month period. Below-benchmark weightings in the energy, telecommunication services, and real estate sectors, as well as greater-than-benchmark weightings in the materials and health-care sectors were beneficial for performance.

What is your outlook for the coming months?

The nearly decade-long U.S. equity rally is now the second-longest bull market in history. In my view, several positive developments are supporting the market's bullish sentiment. In a testament to improving business fundamentals, earnings growth showed considerable improvement in 2017. Also, global economies have demonstrated a greater level of positive synchronization than at almost any time since the Great Recession of the late 2000s. Finally, the backdrop of low interest rates and low inflation has historically been favorable for stocks.

However, given the length of the record-breaking equity rally, there are potential risks that could disrupt stock market momentum. I believe that elevated stock valuations, geopolitical developments, and questions about the ability of the Trump administration to deliver on its business-friendly agenda could contribute to a change in sentiment. Another key question is the impact of the Federal

Reserve's decade-long accommodative policy of keeping interest rates below what might have been normal for this stage of the cycle. It remains to be seen if holding interest rates at super-low levels for so long is creating distortions in the economy and the stock market.

Value investing was out of favor and underperformed more speculative strategies in 2017. This approach, in my view, requires more patience than investing in the trendier momentum stocks that have dominated the rally thus far. I believe value strategies offer a lower-risk approach to investing and may return to favor when investors refocus on valuations and how much they are willing to pay for growth.

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: Investments in small and/or midsize companies increase the risk of greater price fluctuations. Value stocks may fail to rebound, and the market may not favor value-style investing. Stock prices may fall or fail to rise over time for several reasons, including general financial market conditions, changing market perceptions, changes in government intervention in the financial markets, and factors related to a specific issuer or industry. These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings. You can lose money by investing in the fund.

Your fund's manager



Portfolio Manager **Katherine Collins, CFA, MTS**, is Head of Sustainable Investing. She joined Putnam in 2017 and has been in the investment industry since 1990.

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

Shareholders were informed through a supplement to the fund's prospectus that Putnam Management has recommended, and the fund's Board of Trustees has approved, changes to the fund's investment strategy in order to incorporate sustainability criteria. In connection with these changes, the fund's name will change to Putnam VT Sustainable Future Fund. Putnam Management anticipates that the changes will be effective on or about April 30, 2018. See the prospectus supplement for more information.

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 7/1/17 to 12/31/17. 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 12/31/16	0.79%	1.04%
Annualized expense ratio for the six-month period ended 12/31/17*	0.77%	1.02%

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 12/31/17		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 12/31/17	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$4.00	\$5.29	\$3.92	\$5.19
Ending value (after expenses)	\$1,059.00	\$1,058.00	\$1,021.32	\$1,020.06

*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 12/31/17. 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 Multi-Cap Value Fund

Opinion on the Financial Statements

We have audited the accompanying statement of assets and liabilities, including the portfolio, of Putnam VT Multi-Cap Value Fund (one of the funds constituting Putnam Variable Trust, referred to hereafter as the “Fund”) as of December 31, 2017, the related statement of operations for the year ended December 31, 2017, the statement of changes in net assets for each of the two years in the period ended December 31, 2017, including the related notes, and the financial highlights for each of the five years in the period ended December 31, 2017 (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, 2017, 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, 2017 and the financial highlights for each of the five years in the period ended December 31, 2017 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, 2017 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 8, 2018

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 determined the specific year we began serving as auditor.

The fund's portfolio 12/31/17

COMMON STOCKS (96.2%)*	Shares	Value
Aerospace and defense (6.2%)		
Harris Corp.	5,380	\$762,077
L3 Technologies, Inc.	2,889	571,589
Northrop Grumman Corp.	3,155	968,301
		2,301,967
Airlines (0.7%)		
American Airlines Group, Inc.	5,340	277,840
		277,840
Auto components (0.5%)		
Goodyear Tire & Rubber Co. (The)	5,230	168,981
		168,981
Banks (13.0%)		
Bank of America Corp.	43,720	1,290,614
Citigroup, Inc.	9,690	721,033
East West Bancorp, Inc.	9,090	552,945
First Republic Bank	9,560	828,278
KeyCorp	29,150	587,956
Old National Bancorp	15,550	271,348
PacWest Bancorp	7,830	394,632
Regions Financial Corp.	11,350	196,128
		4,842,934
Building products (2.2%)		
Johnson Controls International PLC	15,492	590,400
Owens Corning	2,677	246,123
		836,523
Capital markets (5.2%)		
E*Trade Financial Corp. †	17,040	844,673
Goldman Sachs Group, Inc. (The)	2,170	552,829
Invesco, Ltd.	15,050	549,927
		1,947,429
Chemicals (3.7%)		
Celanese Corp. Ser. A	2,290	245,213
CF Industries Holdings, Inc.	5,820	247,583
Olin Corp.	10,650	378,927
W.R. Grace & Co.	7,330	514,053
		1,385,776
Construction materials (0.5%)		
Summit Materials, Inc. Class A †	6,033	189,687
		189,687
Containers and packaging (2.7%)		
Ball Corp.	17,500	662,375
Graphic Packaging Holding Co.	22,840	352,878
		1,015,253
Electric utilities (1.8%)		
Exelon Corp.	17,334	683,133
		683,133
Electrical equipment (2.2%)		
AMETEK, Inc.	11,152	808,185
		808,185
Energy equipment and services (0.3%)		
Transocean, Ltd. (Switzerland) †	10,190	108,829
		108,829
Equity real estate investment trusts (REITs) (1.0%)		
Host Hotels & Resorts, Inc. ^R	19,660	390,251
		390,251
Food products (3.2%)		
J.M. Smucker Co. (The)	2,590	321,782
Kraft Heinz Co. (The)	4,800	373,248
Pinnacle Foods, Inc.	8,751	520,422
		1,215,452
Health-care equipment and supplies (6.8%)		
Becton Dickinson and Co.	3,227	690,772
Boston Scientific Corp. †	31,200	773,448

COMMON STOCKS (96.2%)* cont.	Shares	Value
Health-care equipment and supplies cont.		
Danaher Corp.	8,020	\$744,416
Dentsply Sirona, Inc.	4,980	327,833
		2,536,469
Hotels, restaurants, and leisure (3.6%)		
Aramark	3,580	153,009
Hilton Worldwide Holdings, Inc.	3,410	272,323
Penn National Gaming, Inc. † ^S	7,790	244,061
Wynn Resorts, Ltd.	4,040	681,104
		1,350,497
Household durables (0.9%)		
PulteGroup, Inc.	9,950	330,838
		330,838
Independent power and renewable electricity producers (1.0%)		
NRG Energy, Inc.	12,585	358,421
		358,421
Insurance (2.7%)		
American International Group, Inc.	5,560	331,265
Assured Guaranty, Ltd.	6,730	227,945
Hartford Financial Services Group, Inc. (The)	8,036	452,266
		1,011,476
IT Services (5.6%)		
DXC Technology Co.	15,410	1,462,409
Fidelity National Information Services, Inc.	6,600	620,994
		2,083,403
Leisure products (0.9%)		
Brunswick Corp.	4,250	234,685
Hasbro, Inc.	1,130	102,706
		337,391
Life sciences tools and services (0.8%)		
Agilent Technologies, Inc.	4,514	302,303
		302,303
Machinery (3.8%)		
Dover Corp.	1,230	124,218
Milacron Holdings Corp. †	8,510	162,881
Oshkosh Corp.	1,490	135,426
Snap-On, Inc. ^S	5,640	983,052
		1,405,577
Metals and mining (1.7%)		
Alcoa Corp. †	8,190	441,195
United States Steel Corp.	5,600	197,064
		638,259
Multi-utilities (2.8%)		
Ameren Corp.	10,550	622,345
CMS Energy Corp.	8,710	411,983
		1,034,328
Oil, gas, and consumable fuels (8.1%)		
Anadarko Petroleum Corp.	4,750	254,790
Apache Corp.	4,960	209,411
ConocoPhillips	14,820	813,470
Devon Energy Corp.	3,120	129,168
EnCana Corp. (Canada)	38,680	515,604
EOG Resources, Inc.	6,170	665,805
EQT Corp.	1,710	97,333
Marathon Oil Corp.	18,940	320,654
		3,006,235
Personal products (0.3%)		
Avon Products, Inc. (United Kingdom) †	53,756	115,575
		115,575
Pharmaceuticals (4.1%)		
Allergan PLC	3,570	583,981
Jazz Pharmaceuticals PLC †	6,190	833,484
Medicines Co. (The) † ^S	4,140	113,188
		1,530,653

COMMON STOCKS (96.2%)* cont.	Shares	Value
Road and rail (4.1%)		
Norfolk Southern Corp.	2,750	\$398,475
Union Pacific Corp.	8,334	1,117,589
		1,516,064
Semiconductors and semiconductor equipment (1.3%)		
Lam Research Corp.	2,680	493,308
		493,308
Software (0.5%)		
Micro Focus International PLC ADR (United Kingdom) †	5,490	184,409
		184,409
Specialty retail (2.5%)		
Gap, Inc. (The)	5,640	192,098
Michaels Cos., Inc. (The) †	9,580	231,740
Tiffany & Co.	2,470	256,757
TJX Cos., Inc. (The) ‡	3,278	250,636
		931,231
Technology hardware, storage, and peripherals (1.5%)		
Xerox Corp.	19,365	564,488
		564,488
Total common stocks (cost \$26,417,167)		\$35,903,165

SHORT-TERM INVESTMENTS (7.3%)*	Principal amount/ shares	Value
Putnam Cash Collateral Pool, LLC 1.55% †	Shares 1,270,150	\$1,270,150
Putnam Short Term Investment Fund 1.45% ‡	Shares 1,405,081	1,405,081
U.S. Treasury Bills 1.073%, 1/18/18 #	\$41,000	40,973
U.S. Treasury Bills 1.130%, 1/11/18	6,000	5,998
Total short-term investments (cost \$2,722,209)		\$2,722,202
Total investments (cost \$29,139,376)		\$38,625,367

Key to holding's abbreviations

ADR American Depositary Receipts: represents ownership of foreign securities on deposit with a custodian bank

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, 2017 through December 31, 2017 (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*.

* Percentages indicated are based on net assets of \$37,326,388.

† This security is non-income-producing.

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 \$39,976 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

‡ 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.

‡ 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.

§ 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.

FUTURES

CONTRACTS OUTSTANDING at 12/31/17	Number of contracts	Notional amount	Value	Expiration date	Unrealized appreciation/ (depreciation)
S&P 500 Index					
E-Mini (Long)	3	\$401,042	\$401,400	Mar-18	\$2,895
S&P Mid Cap 400					
Index E-Mini (Long)	1	190,057	190,240	Mar-18	1,493
Unrealized appreciation					4,388
Unrealized (depreciation)					—
Total					\$4,388

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*:			
Consumer discretionary	\$3,118,938	\$—	\$—
Consumer staples	1,331,027	—	—
Energy	3,115,064	—	—
Financials	7,801,839	—	—
Health care	4,369,425	—	—
Industrials	7,146,156	—	—
Information technology	3,325,608	—	—
Materials	3,228,975	—	—
Real Estate	390,251	—	—
Utilities	2,075,882	—	—
Total common stocks	35,903,165	—	—
Short-term investments	1,405,081	1,317,121	—
Totals by level	\$37,308,246	\$1,317,121	\$—

Other financial instruments:	Valuation inputs		
	Level 1	Level 2	Level 3
Futures contracts	\$4,388	\$—	\$—
Totals by level	\$4,388	\$—	\$—

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

During the reporting period, transfers within the fair value hierarchy, if any (other than certain transfers involving non-U.S. equity securities as described in Note 1), did not represent, in the aggregate, more than 1% of the fund's net assets measured as of the end of the period. Transfers are accounted for using the end of period pricing valuation method.

Statement of assets and liabilities

12/31/17

Assets

Investment in securities, at value, including \$1,235,121 of securities on loan (Note 1):	
Unaffiliated issuers (identified cost \$26,464,145)	\$35,950,136
Affiliated issuers (identified cost \$2,675,231) (Notes 1 and 5)	2,675,231
Dividends, interest and other receivables	54,231
Receivable for shares of the fund sold	24,083
Total assets	38,703,681

Liabilities

Payable to custodian	7
Payable for shares of the fund repurchased	4,232
Payable for compensation of Manager (Note 2)	17,429
Payable for custodian fees (Note 2)	3,845
Payable for investor servicing fees (Note 2)	496
Payable for Trustee compensation and expenses (Note 2)	41,531
Payable for administrative services (Note 2)	384
Payable for distribution fees (Note 2)	1,985
Payable for variation margin on futures contracts (Note 1)	2,615
Collateral on securities loaned, at value (Note 1)	1,270,150
Other accrued expenses	34,619
Total liabilities	1,377,293
Net assets	\$37,326,388

Represented by

Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$26,745,849
Undistributed net investment income (Note 1)	242,206
Accumulated net realized gain on investments (Note 1)	847,954
Net unrealized appreciation of investments	9,490,379
Total — Representing net assets applicable to capital shares outstanding	\$37,326,388

Computation of net asset value Class IA

Net assets	\$27,976,439
Number of shares outstanding	1,513,618
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$18.48

Computation of net asset value Class IB

Net assets	\$9,349,949
Number of shares outstanding	507,730
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$18.42

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

Statement of operations

Year ended 12/31/17

Investment income

Dividends (net of foreign tax of \$396)	\$582,053
Interest (including interest income of \$13,730 from investments in affiliated issuers) (Note 5)	13,821
Securities lending (net of expenses) (Notes 1 and 5)	4,980
Total investment income	600,854

Expenses

Compensation of Manager (Note 2)	212,338
Investor servicing fees (Note 2)	26,823
Custodian fees (Note 2)	9,178
Trustee compensation and expenses (Note 2)	797
Distribution fees (Note 2)	24,679
Administrative services (Note 2)	1,150
Auditing and tax fees	29,951
Other	17,273

Total expenses **322,189**

Expense reduction (Note 2) (4,950)

Net expenses **317,239**

Net investment income **283,615**

Net realized gain on securities from unaffiliated issuers (Notes 1 and 3) 937,772

Net realized gain on futures contracts (Note 1) 27,464

Net unrealized appreciation of securities in unaffiliated issuers during the year 2,703,556

Net unrealized appreciation of futures contracts during the year 4,388

Net gain on investments **3,673,180**

Net increase in net assets resulting from operations **\$3,956,795**

Statement of changes in net assets

	Year ended 12/31/17	Year ended 12/31/16
Increase (decrease) in net assets		
Operations:		
Net investment income	\$283,615	\$455,645
Net realized gain on investments	965,236	1,670,245
Net unrealized appreciation of investments	2,707,944	2,358,752
Net increase in net assets resulting from operations	3,956,795	4,484,642
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(299,953)	(248,185)
Class IB	(80,525)	(64,004)
Net realized short-term gain on investments		
Class IA	—	(193,983)
Class IB	—	(70,769)
From net realized long-term gain on investments		
Class IA	(1,295,544)	(2,909,751)
Class IB	(450,939)	(1,061,534)
Increase (decrease) from capital share transactions (Note 4)	(3,240,864)	3,716,979
Total increase (decrease) in net assets	(1,411,030)	3,653,395
Net assets:		
Beginning of year	38,737,418	35,084,023
End of year (including undistributed net investment income of \$242,206 and \$416,772, respectively)	\$37,326,388	\$38,737,418

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	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}	Ratio of net investment income (loss) to average net assets (%)	Portfolio turnover (%)
Class IA													
12/31/17	\$17.62	.14	1.72	1.86	(.19)	(.81)	(1.00)	\$18.48	10.94	\$27,976	.78	.81	61
12/31/16	17.85	.22	1.90	2.12	(.17)	(2.18)	(2.35)	17.62	13.23	28,724	.79 ^e	1.32 ^e	84
12/31/15	21.87	.25	(.84)	(.59)	(.23)	(3.20)	(3.43)	17.85	(4.06)	25,790	.77	1.30	82
12/31/14	19.87	.24	1.95	2.19	(.19)	—	(.19)	21.87	11.08	29,925	.79	1.15	78
12/31/13	14.16	.17	5.78	5.95	(.24)	—	(.24)	19.87	42.43	31,051	.81	1.01	85
Class IB													
12/31/17	\$17.56	.10	1.72	1.82	(.15)	(.81)	(.96)	\$18.42	10.71	\$9,350	1.03	.55	61
12/31/16	17.79	.18	1.89	2.07	(.12)	(2.18)	(2.30)	17.56	12.93	10,013	1.04 ^e	1.07 ^e	84
12/31/15	21.79	.20	(.83)	(.63)	(.17)	(3.20)	(3.37)	17.79	(4.27)	9,294	1.02	1.03	82
12/31/14	19.81	.18	1.94	2.12	(.14)	—	(.14)	21.79	10.76	11,892	1.04	.90	78
12/31/13	14.12	.13	5.76	5.89	(.20)	—	(.20)	19.81	42.07	13,370	1.06	.77	85

^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 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.

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

Notes to financial statements 12/31/17

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, 2017 through December 31, 2017.

Putnam VT Multi-Cap Value 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 and, as a secondary objective, current income. The fund invests mainly in common stocks of U.S. companies of any size, with a focus on value stocks. Value stocks are issued by companies that Putnam Management believes are currently undervalued by the market. If Putnam Management is correct and other investors ultimately recognize the value of the company, the price of its stock may rise. 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 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.

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.

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 \$1,270,150 and the value of securities loaned amounted to \$1,235,121.

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 plus a \$25,000 flat fee 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.

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 and from nontaxable dividends. 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 \$77,703 to decrease undistributed net investment income and \$77,703 to increase 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	\$9,482,855
Unrealized depreciation	(296,973)
Net unrealized appreciation	9,185,882
Undistributed ordinary income	242,206
Undistributed long-term gain	1,152,451
Cost for federal income tax purposes	\$29,443,873

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 41.3% 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 0.554% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2019, to waive fees 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 plans, 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	\$19,911
Class IB	6,912
Total	\$26,823

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 \$22 under the expense offset arrangements and by \$4,928 under the brokerage/service arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$28, 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 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)	\$22,424,379	\$27,464,340
U.S. government securities (Long-term)	—	—
Total	\$22,424,379	\$27,464,340

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.

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 12/31/17		Year ended 12/31/16		Year ended 12/31/17		Year ended 12/31/16	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	75,847	\$1,357,647	232,384	\$3,928,265	33,801	\$592,255	63,619	\$1,048,932
Shares issued in connection with reinvestment of distributions	92,225	1,595,497	209,757	3,351,918	30,774	531,464	74,957	1,196,307
	168,072	2,953,144	442,141	7,280,183	64,575	1,123,719	138,576	2,245,239
Shares repurchased	(285,019)	(5,060,060)	(256,498)	(4,300,864)	(127,225)	(2,257,667)	(90,756)	(1,507,579)
Net increase (decrease)	(116,947)	\$(2,106,916)	185,643	\$2,979,319	(62,650)	\$(1,133,948)	47,820	\$737,660

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 12/31/16	Purchase cost	Sale proceeds	Investment income	Shares outstanding and fair value as of 12/31/17
Short-term investments					
Putnam Cash Collateral Pool, LLC*	\$901,779	\$32,277,309	\$31,908,938	\$24,481	\$1,270,150
Putnam Short Term Investment Fund**	1,378,540	11,524,721	11,498,180	13,730	1,405,081
Total Short-term investments	\$2,280,319	\$43,802,030	\$43,407,118	\$38,211	\$2,675,231

* 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:

Futures contracts (number of contracts)	1
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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
Equity contracts	Receivables, Net assets — Unrealized appreciation	\$4,388*	Payables, Net assets — Unrealized depreciation	\$—
Total		\$4,388		\$—

*Includes cumulative appreciation/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	Futures	Total
Equity contracts	\$27,464	\$27,464
Total	\$27,464	\$27,464

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	Futures	Total
Equity contracts	\$4,388	\$4,388
Total	\$4,388	\$4,388

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.

	Merrill Lynch, Pierce, Fenner & Smith, Inc.	Total
Assets:		
Futures contracts [§]	\$—	\$—
Total Assets	\$—	\$—
Liabilities:		
Futures contracts [§]	2,615	2,615
Total Liabilities	\$2,615	\$2,615
Total Financial and Derivative Net Assets	\$(2,615)	\$(2,615)
Total collateral received (pledged)†##	\$—	
Net amount	\$(2,615)	
Controlled collateral received (including TBA commitments)**	\$—	\$—
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.

##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 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 \$39,976.

Note 9 — Strategy and name change

Shareholders were informed through a supplement to the fund's prospectus that Putnam Management has recommended, and the fund's Board of Trustees has approved, changes to the fund's investment strategy in order to incorporate sustainability criteria. In connection with these changes, the fund's name will

change to Putnam VT Sustainable Future Fund. Putnam Management anticipates that the changes will be effective on or about April 30, 2018. See the prospectus supplement for more information.

Federal tax information (Unaudited)

Pursuant to §852 of the Internal Revenue Code, as amended, the fund hereby designates \$1,325,077 as a capital gain dividend with respect to the taxable year ended December 31, 2017, or, if subsequently determined to be different, the net capital gain of such year.

The fund designated 100.00% 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 Ahamed 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> . Director of Aspen Insurance Co., a New York Stock Exchange company, and Chair of the Aspen Board's Investment Committee. 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 American India Foundation and of the Rubin Museum. From 1992 to 2007, was Chairman and CEO of MacKay Shields, a multi-product investment management firm.	RAGE Frameworks, Inc., a private software company; 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 Board member of The Denver Foundation. Former Chair and current Board member of Girls Incorporated of Metro Denver. 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	
Jameson A. Baxter Born 1943 Trustee since 1994, Vice Chair from 2005 to 2011, and Chair since 2011	President of Baxter Associates, Inc., a private investment firm. Chair of Mutual Fund Directors Forum. Chair Emeritus of the Board of Trustees of Mount Holyoke College. Director of the Adirondack Land Trust and Trustee of the Nature Conservancy's Adirondack Chapter.	None	
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.	Reach Out and Read of Greater New York, an organization dedicated to promoting childhood literacy; 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). Until 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. Prior to 2007, served as the Director of the Center for Energy and Environmental Policy Research at MIT. Prior to 1998, served as Head of the Department of Economics at MIT.	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 and Vice Chair since 2016	Founder and former Chairman of Boston Options Exchange, an electronic marketplace for the trading of derivative securities. Vice Chairman Emeritus of the Board of Trustees of Beth Israel Deaconess Hospital in Boston, Massachusetts. 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	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	

Name Year of birth Position held	Principal occupations during past five years	Other directorships	
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	
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	
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*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 One Post Office Square, Boston, MA 02109.

As of December 31, 2017, there were 106 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 One Post Office Square, Boston, MA 02109.

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, 2017, 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. In addition, the fund's Form N-Q may be reviewed and copied at the SEC's Public Reference Room in Washington, D.C. You may call the SEC at 1-800-SEC-0330 for information about the SEC's website or the operation of the Public Reference Room.

Fund information

Investment Manager

Putnam Investment Management, LLC
One Post Office Square
Boston, MA 02109

Investment Sub-Advisor

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

Marketing Services

Putnam Retail Management
One Post Office Square
Boston, MA 02109

Investor Servicing Agent

Putnam Investor Services, Inc.
Mailing address:
P.O. Box 8383
Boston, MA 02266-8383
1-800-225-1581

Custodian

State Street Bank and Trust Company

Legal Counsel

Ropes & Gray LLP

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP

Trustees

Jameson A. Baxter, *Chair*
Kenneth R. Leibler, *Vice 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.