

A world of investing.®



Putnam Variable Trust

Annual report

12 | 31 | 16

Putnam VT
Equity Income Fund

Message from the Trustees

Dear Shareholder:

With 2017 under way, investor sentiment generally brightened at the prospect of moving beyond the challenges of the past year, when politics tested markets. Fortunately, market turbulence in the aftermath of key political events was in many cases followed by impressive rebounds, and annual performance in most global financial markets exceeded expectations.

Of course, uncertainties and macroeconomic risks do not simply disappear with the close of the calendar year. Conditions in the bond market have changed given the shift in the potential for inflation. As such, we believe investors should continue to focus on time-tested strategies: maintain a well-diversified portfolio, keep a long-term view, and do not overreact to short-term market fluctuations. To help ensure that your portfolio is aligned with your individual goals, time horizon, and tolerance for risk, we also believe it is a good idea to speak regularly with your financial advisor.

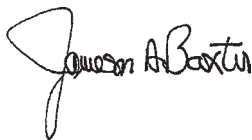
In today's environment, we favor the investment approach practiced at Putnam — active strategies based on fundamental research. Putnam portfolio managers, backed by a network of global analysts, bring years of experience to navigating changing market conditions and pursuing investment opportunities. In the following pages, you will find an overview of your fund's performance for the reporting period ended December 31, 2016, as well as an outlook for the coming months.

As always, 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

February 9, 2017

Performance summary (as of 12/31/16)

Investment objective

Capital growth and current income

Net asset value December 31, 2016

Class IA: \$23.80

Class IB: \$23.59

Total return at net asset value

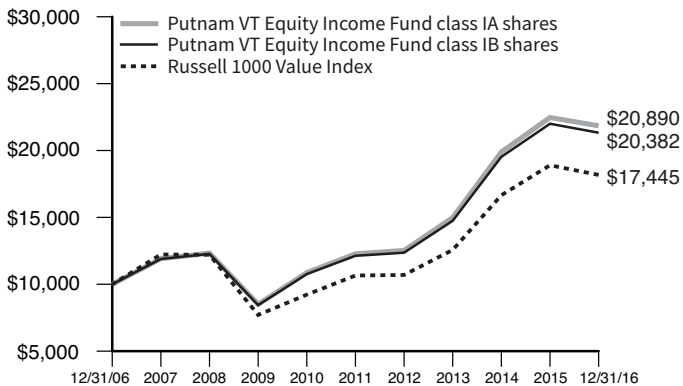
(as of 12/31/16)*	Class IA shares†	Class IB shares†	Russell 1000 Value Index
1 year	13.96%	13.64%	17.34%
5 years	98.68	96.11	99.38
Annualized	14.72	14.42	14.80
10 years	108.90	103.82	74.45
Annualized	7.65	7.38	5.72
Life	258.71	246.88	234.10
Annualized	9.80	9.53	9.23

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

* Recent performance may have benefited from one or more legal settlements.

† 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 12/31/06

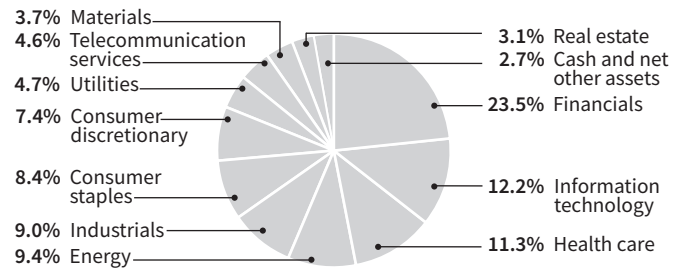


The Russell 1000 Value Index is an unmanaged index of those companies in the large-cap Russell 1000 Index chosen for their value orientation.

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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 managers

Darren, how was the investing environment during the 12-month reporting period ended December 31, 2016?

U.S. stocks ended the period with solid gains despite many challenges for financial markets throughout the year. January and February 2016 marked the worst-ever start to a year in terms of stock performance, as investors' concern escalated over China's slowing economy, and oil and commodity prices plummeted even further than they already had in 2015. We saw a tremendous amount of volatility, but I don't believe conditions were nearly as bad as were being priced into the market.

After a low point in mid-February, stocks staged a remarkable rebound. As recession fears subsided and oil prices stabilized, turbulence eased and the S&P 500 Index gained 6.78% in March, marking its best monthly return in five months and the start of a relatively calm few months for the markets. In late June, market volatility spiked again, largely in response to the decision by United Kingdom voters to leave the European Union [Brexit]. U.S. stock prices plummeted by more than 5% in the two days after the Brexit vote, followed by a dramatic three-day recovery.

U.S. stocks continued to advance, but performance was weaker in early fall, as uncertainty surrounding the November U.S. presidential election and the likelihood of a Federal Reserve interest-rate hike weighed on investor sentiment. Donald Trump's largely unexpected win initially sent stocks tumbling, but markets recovered quickly and stocks surged for the remaining weeks of 2016, with major U.S. indexes setting new record highs multiple times.

How did Putnam VT Equity Income Fund perform during the reporting period?

The fund delivered a solid positive return for the period, but underperformed its benchmark, the Russell 1000 Value Index.

What are some stocks that detracted from fund performance relative to the benchmark during the reporting period?

The fund's investment in drug company Eli Lilly was the biggest detractor from performance. The decline in Lilly's stock price was due largely to the announcement in November 2016 that Solanezumab, one of the company's key products, had failed in a large clinical trial.

Another disappointing holding was the stock of Coty, a beauty products company. Coty has struggled with its acquisition of the beauty brands of Procter & Gamble, a deal we believe will be beneficial for Coty's profitability over time. Fund holding CVS Health also dampened fund returns for the annual period. The company lowered its growth outlook for 2017 after losing a number of key contracts to competitors.

Could you provide some examples of stocks that helped performance during the reporting period?

One strong-performing holding was media and entertainment company Time Warner, whose stock surged for the year, due in large part to the announcement in October 2016 that it plans to merge with AT&T.

Throughout the fund's previous fiscal year, many of the weakest-performing fund holdings were stocks of companies in the energy sector, as oil prices plummeted to historic lows. During this annual reporting period, however, we saw a sharp reversal in that trend. Stocks in the energy sector rebounded from extraordinarily cheap levels. Two beneficiaries were among the top contributors to fund performance — Royal Dutch Shell, which we sold during the period, and Marathon Oil.

As the fund begins a new fiscal year, what is your outlook?

Stocks surged in the final months of the period following the outcome of the U.S. presidential election. In our view, the rally was the result of investor anticipation that the new administration will be good for businesses, due to an agenda focused on corporate tax cuts, looser regulations, and infrastructure spending.

Although the recent rally has been a pleasant surprise for stocks, I believe the market may have gotten ahead of itself, and at the close of the period, stocks in many sectors had become quite expensive, in my view. I believe our focus on fundamental research and bottom-up stock selection will be critical as we see more differentiation between winners and losers in the market in the months ahead.

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: Value stocks may fail to rebound, and the market may not favor value-style investing. Income provided by the fund may be reduced by changes in the dividend policies of, and the capital resources available at, the companies in which the fund invests. Stock prices may fall or fail to rise over time for several reasons, including general financial market conditions and factors related to a specific company or industry. You can lose money by investing in the fund.

Your fund's managers



Portfolio Manager **Darren A. Jaroch**, CFA, joined Putnam in 1999 and has been in the investment industry since 1996.

In addition to Darren, your fund is managed by Assistant Portfolio Manager **Walter D. Scully**, CPA. He has been in the investment industry since he joined Putnam in 1996.

Your fund's managers may also manage 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 7/1/16 to 12/31/16. 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 12/31/15	0.58%	0.83%
Annualized expense ratio for the six-month period ended 12/31/16*	0.59%	0.84%

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 12/31/16		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 12/31/16	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$3.11	\$4.43	\$3.00	\$4.27
Ending value (after expenses)	\$1,099.30	\$1,097.70	\$1,022.17	\$1,020.91

*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 12/31/16. 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 Equity Income Fund:

In our opinion, the accompanying statement of assets and liabilities, including the portfolio, and the related statements of operations and of changes in net assets and the financial highlights present fairly, in all material respects, the financial position of Putnam VT Equity Income Fund (the “Fund”) as of December 31, 2016, the results of its operations, the changes in its net assets and the financial highlights for each of the periods indicated, in conformity with accounting principles generally accepted in the United States of America. These financial statements and financial highlights (hereafter referred to as “financial statements”) are the responsibility of the Fund’s management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits, which included confirmation of investments as of December 31, 2016 by correspondence with the custodian, brokers, transfer agent, and the application of alternative auditing procedures where securities purchased had not been received, provide a reasonable basis for our opinion.

PricewaterhouseCoopers LLP
Boston, Massachusetts
February 9, 2017

The fund's portfolio 12/31/16

COMMON STOCKS (95.3%)*	Shares	Value
Aerospace and defense (4.4%)		
L-3 Communications Holdings, Inc.	22,441	\$3,413,501
Northrop Grumman Corp.	62,150	14,454,847
Raytheon Co.	26,600	3,777,200
		21,645,548
Airlines (0.9%)		
Southwest Airlines Co.	93,180	4,644,091
		4,644,091
Auto components (0.7%)		
Delphi Automotive PLC (United Kingdom)	50,590	3,407,237
		3,407,237
Automobiles (0.8%)		
General Motors Co.	108,980	3,796,863
		3,796,863
Banks (11.7%)		
Bank of America Corp.	529,540	11,702,834
Citigroup, Inc.	217,415	12,920,973
JPMorgan Chase & Co.	162,910	14,057,504
KeyCorp	175,230	3,201,452
Regions Financial Corp.	343,310	4,929,932
Wells Fargo & Co.	193,782	10,679,326
		57,492,021
Beverages (2.0%)		
Coca-Cola European Partners PLC (United Kingdom) [§]	43,050	1,351,770
Dr. Pepper Snapple Group, Inc.	50,760	4,602,409
PepsiCo, Inc.	39,710	4,154,857
		10,109,036
Building products (0.8%)		
Johnson Controls International PLC	102,027	4,202,492
		4,202,492
Capital markets (4.2%)		
Charles Schwab Corp. (The)	174,630	6,892,646
Goldman Sachs Group, Inc. (The)	16,560	3,965,292
Invesco, Ltd.	57,160	1,734,234
KKR & Co. LP	211,570	3,256,062
State Street Corp.	62,980	4,894,806
		20,743,040
Chemicals (2.4%)		
Air Products & Chemicals, Inc.	30,630	4,405,207
Dow Chemical Co. (The)	81,009	4,635,335
E. I. du Pont de Nemours & Co.	40,346	2,961,396
		12,001,938
Communications equipment (0.8%)		
Cisco Systems, Inc.	136,460	4,123,821
		4,123,821
Consumer finance (0.8%)		
Capital One Financial Corp.	44,930	3,919,693
Oportun Financial Corp. (acquired 6/23/15, cost \$223,215) (Private) † Δ Δ ^F	78,321	200,893
		4,120,586
Containers and packaging (1.2%)		
Ball Corp.	40,370	3,030,576
Sealed Air Corp.	67,000	3,037,780
		6,068,356
Diversified financial services (0.9%)		
Berkshire Hathaway, Inc. Class B †	26,110	4,255,408
		4,255,408
Diversified telecommunication services (3.9%)		
AT&T, Inc.	257,470	10,950,199
CenturyLink, Inc.	55,890	1,329,064
Frontier Communications Corp. [§]	497,020	1,679,928
Verizon Communications, Inc.	98,520	5,258,998
		19,218,189

COMMON STOCKS (95.3%)* cont.	Shares	Value
Electric utilities (3.8%)		
American Electric Power Co., Inc.	43,930	\$2,765,833
Edison International	51,310	3,693,807
Exelon Corp.	93,930	3,333,576
NextEra Energy, Inc.	26,940	3,218,252
PG&E Corp.	46,450	2,822,767
PPL Corp.	86,988	2,961,941
		18,796,176
Energy equipment and services (0.6%)		
Halliburton Co.	29,200	1,579,428
National Oilwell Varco, Inc.	37,100	1,389,024
		2,968,452
Equity real estate investment trusts (REITs) (2.9%)		
American Tower Corp. ^R	21,410	2,262,609
Boston Properties, Inc. ^R	30,170	3,794,783
Equity Lifestyle Properties, Inc. ^R	56,770	4,093,117
Federal Realty Investment Trust ^R	14,550	2,067,701
Gaming and Leisure Properties, Inc. ^R	64,420	1,972,540
		14,190,750
Food and staples retail (0.7%)		
CVS Health Corp.	41,810	3,299,227
		3,299,227
Food products (1.7%)		
JM Smucker Co. (The)	32,555	4,168,993
Kraft Heinz Co. (The)	50,900	4,444,588
		8,613,581
Health-care equipment and supplies (2.1%)		
Becton Dickinson and Co.	22,710	3,759,641
Danaher Corp.	42,780	3,329,995
Medtronic PLC	47,076	3,353,223
		10,442,859
Health-care providers and services (1.0%)		
Cigna Corp.	38,560	5,143,518
		5,143,518
Hotels, restaurants, and leisure (0.9%)		
Hilton Worldwide Holdings, Inc.	171,157	4,655,470
		4,655,470
Household durables (0.3%)		
PulteGroup, Inc.	90,450	1,662,471
		1,662,471
Independent power and renewable electricity producers (0.7%)		
Calpine Corp. †	156,968	1,794,144
NRG Energy, Inc.	121,250	1,486,525
		3,280,669
Industrial conglomerates (1.3%)		
General Electric Co.	122,720	3,877,952
Honeywell International, Inc.	20,050	2,322,793
		6,200,745
Insurance (3.9%)		
American International Group, Inc.	100,570	6,568,227
Assured Guaranty, Ltd.	133,570	5,044,939
Chubb, Ltd.	28,750	3,798,450
Hartford Financial Services Group, Inc. (The)	81,560	3,886,334
		19,297,950
Internet software and services (1.4%)		
Alphabet, Inc. Class C †	9,185	7,089,167
		7,089,167
IT Services (1.5%)		
Computer Sciences Corp.	52,230	3,103,507
CSRA, Inc.	52,230	1,663,003
Fidelity National Information Services, Inc.	38,440	2,907,602
		7,674,112
Life sciences tools and services (0.8%)		
Agilent Technologies, Inc.	83,080	3,785,125
		3,785,125

COMMON STOCKS (95.3%)* cont.	Shares	Value
Machinery (0.2%)		
Fortive Corp.	20,860	\$1,118,722
		1,118,722
Media (4.7%)		
CBS Corp. Class B (non-voting shares)	52,530	3,341,959
Charter Communications, Inc. Class A †	11,390	3,279,409
Comcast Corp. Class A	148,240	10,235,972
Liberty Global PLC Ser. C (United Kingdom) †	64,310	1,910,007
Time Warner, Inc.	45,430	4,385,358
		23,152,705
Metals and mining (—%)		
ArcelorMittal ADR (France) † ⁵	22,171	161,848
		161,848
Mortgage real estate investment trusts (REITs) (0.6%)		
MFA Financial, Inc. ^R	378,511	2,888,039
		2,888,039
Multi-utilities (0.2%)		
Ameren Corp.	19,710	1,033,987
		1,033,987
Oil, gas, and consumable fuels (8.8%)		
Anadarko Petroleum Corp.	64,699	4,511,461
Cheniere Energy, Inc. †	32,700	1,354,761
ConocoPhillips	85,360	4,279,950
EOG Resources, Inc.	45,510	4,601,061
Exxon Mobil Corp.	123,990	11,191,337
Marathon Oil Corp.	470,400	8,142,624
QEP Resources, Inc. †	81,860	1,507,043
Total SA (France)	63,050	3,218,559
Valero Energy Corp.	70,370	4,807,678
		43,614,474
Personal products (1.5%)		
Coty, Inc. Class A	197,631	3,618,624
Edgewell Personal Care Co. †	54,900	4,007,151
		7,625,775
Pharmaceuticals (7.2%)		
AstraZeneca PLC ADR (United Kingdom)	172,630	4,716,252
Eli Lilly & Co.	154,780	11,384,069
Johnson & Johnson	92,590	10,667,294
Merck & Co., Inc.	85,980	5,061,643
Pfizer, Inc.	118,739	3,856,643
		35,685,901
Road and rail (0.9%)		
Union Pacific Corp.	44,470	4,610,650
		4,610,650
Semiconductors and semiconductor equipment (3.7%)		
Intel Corp.	153,710	5,575,062
NXP Semiconductor NV †	47,070	4,613,331
QUALCOMM, Inc.	45,070	2,938,564
Texas Instruments, Inc.	62,340	4,548,950
Versum Materials, Inc. †	15,315	429,892
		18,105,799
Software (3.4%)		
Dell Technologies, Inc. - VMware, Inc. Class V †	17,640	969,671
Microsoft Corp.	232,040	14,418,963
Symantec Corp.	63,140	1,508,415
		16,897,049
Technology hardware, storage, and peripherals (1.3%)		
Apple, Inc.	56,140	6,502,135
		6,502,135
Thriffs and mortgage finance (0.8%)		
Radian Group, Inc.	209,392	3,764,868
		3,764,868

COMMON STOCKS (95.3%)* cont.	Shares	Value
Tobacco (2.4%)		
Altria Group, Inc.	77,970	\$5,272,331
Philip Morris International, Inc.	71,230	6,516,833
		11,789,164
Wireless telecommunication services (0.5%)		
Vodafone Group PLC ADR (United Kingdom)	102,107	2,494,474
		2,494,474
Total common stocks (cost \$357,724,320)		\$472,374,488
CONVERTIBLE PREFERRED STOCKS (1.7%)*	Shares	Value
Allergan PLC Ser. A, 5.50% cv. pfd.	1,090	\$831,081
American Tower Corp. \$5.50 cv. pfd. ^R	10,225	1,059,566
Arconic, Inc. \$2.688 cv. pfd. †	67,083	2,022,552
Frontier Communications Corp. Ser. A, \$11.125 cum. cv. pfd.	13,316	942,939
Mandatory Exchangeable Trust 144A \$5.75 cv. pfd.	23,720	2,591,410
Oportun Financial Corp. Ser. A-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$610) (Private) † Δ Δ ^F	214	549
Oportun Financial Corp. Ser. B-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$11,658) (Private) † Δ Δ ^F	3,701	10,492
Oportun Financial Corp. Ser. C-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$27,379) (Private) † Δ Δ ^F	5,379	24,641
Oportun Financial Corp. Ser. D-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$39,712) (Private) † Δ Δ ^F	7,802	35,741
Oportun Financial Corp. Ser. E-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$22,267) (Private) † Δ Δ ^F	4,056	20,041
Oportun Financial Corp. Ser. F, 8.00% cv. pfd. (acquired 6/23/15, cost \$67,223) (Private) † Δ Δ ^F	8,753	60,501
Oportun Financial Corp. Ser. F-1, 8.00% cv. pfd. (acquired 6/23/15, cost \$188,556) (Private) † Δ Δ ^F	66,160	169,700
Oportun Financial Corp. Ser. G, 8.00% cv. pfd. (acquired 6/23/15, cost \$238,428) (Private) † Δ Δ ^F	83,659	214,585
Oportun Financial Corp. Ser. H, 8.00% cv. pfd. (acquired 2/6/15, cost \$732,781) (Private) † Δ Δ ^F	257,360	659,503
Total convertible preferred stocks (cost \$10,371,510)		\$8,643,301
CONVERTIBLE BONDS AND NOTES (0.4%)*	Principal amount	Value
MGIC Investment Corp. cv. sr. unsec. notes 5.00%, 5/1/17	\$1,768,000	\$1,800,045
Total convertible bonds and notes (cost \$1,776,297)		\$1,800,045
SHORT-TERM INVESTMENTS (3.2%)	Shares	Value
Putnam Cash Collateral Pool, LLC 0.91% ^d	2,962,875	\$2,962,875
Putnam Short Term Investment Fund 0.69% ^L	12,831,177	12,831,177
Total short-term investments (cost \$15,794,052)		\$15,794,052
Total investments (cost \$385,666,179)		\$498,611,886
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, 2016 through December 31, 2016 (the reporting period). Within the following notes to the portfolio, references to "ASC 820" represent Accounting Standards Codification 820 <i>Fair Value Measurements and Disclosures</i> and references to "OTC", if any, represent over-the-counter.		
* Percentages indicated are based on net assets of \$495,749,177.		
† 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 \$1,396,646, or 0.3% of net assets.

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 may be classified as Level 2 or Level 3 for ASC 820 based on the securities' valuation inputs. At the close of the reporting period, fair value pricing was also used for certain foreign securities in the portfolio (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).

Debt obligations are considered secured unless otherwise indicated.

144A after the name of an issuer represents securities exempt from registration under Rule 144A under the Securities Act of 1933, as amended. These securities may be resold in transactions exempt from registration, normally to qualified institutional buyers.

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*:			
Consumer discretionary	\$36,674,746	\$—	\$—
Consumer staples	41,436,783	—	—
Energy	43,364,367	3,218,559	—
Financials	112,361,019	—	200,893
Health care	55,057,403	—	—
Industrials	42,422,248	—	—
Information technology	60,392,083	—	—
Materials	18,232,142	—	—
Real estate	14,190,750	—	—
Telecommunication services	21,712,663	—	—
Utilities	23,110,832	—	—
Total common stocks	468,955,036	3,218,559	200,893
Convertible bonds and notes	—	1,800,045	—
Convertible preferred stocks	2,022,552	5,424,996	1,195,753
Short-term investments	12,831,177	2,962,875	—
Totals by level	\$483,808,765	\$13,406,475	\$1,396,646

* 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.

At the start and close of the reporting period, Level 3 investments in securities represented less than 1% of the fund's net assets and were not considered a significant portion of the fund's portfolio.

Statement of assets and liabilities

12/31/16

Assets

Investment in securities, at value, including \$2,872,324 of securities on loan (Note 1):	
Unaffiliated issuers (identified cost \$369,872,127)	\$482,817,834
Affiliated issuers (identified cost \$15,794,052) (Notes 1 and 5)	15,794,052
Dividends, interest and other receivables	1,038,585
Receivable for shares of the fund sold	388,651
Receivable for investments sold	227,243
Total assets	500,266,365

Liabilities

Payable for shares of the fund repurchased	913,466
Payable for compensation of Manager (Note 2)	201,719
Payable for custodian fees (Note 2)	10,012
Payable for investor servicing fees (Note 2)	84,557
Payable for Trustee compensation and expenses (Note 2)	184,372
Payable for administrative services (Note 2)	5,101
Payable for distribution fees (Note 2)	67,410
Collateral on securities loaned, at value (Note 1)	2,962,875
Other accrued expenses	87,676
Total liabilities	4,517,188
Net assets	\$495,749,177

Represented by

Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$360,326,605
Undistributed net investment income (Note 1)	8,834,670
Accumulated net realized gain on investments and foreign currency transactions (Note 1)	13,641,747
Net unrealized appreciation of investments and assets and liabilities in foreign currencies	112,946,155
Total — Representing net assets applicable to capital shares outstanding	\$495,749,177

Computation of net asset value Class IA

Net assets	\$179,949,839
Number of shares outstanding	7,562,401
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$23.80

Computation of net asset value Class IB

Net assets	\$315,799,338
Number of shares outstanding	13,385,343
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$23.59

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

Statement of operations

Year ended 12/31/16

Investment income

Dividends (net of foreign tax of \$60,591)	\$11,867,562
Interest (including interest income of \$51,780 from investments in affiliated issuers) (Note 5)	138,391
Securities lending (net of expenses) (Notes 1 and 5)	259,259
Total investment income	12,265,212

Expenses

Compensation of Manager (Note 2)	2,242,531
Investor servicing fees (Note 2)	329,671
Custodian fees (Note 2)	13,990
Trustee compensation and expenses (Note 2)	30,142
Distribution fees (Note 2)	740,449
Administrative services (Note 2)	14,043
Other	145,133
Fees waived and reimbursed by Manager (Note 2)	(5,726)

Total expenses **3,510,233**

Expense reduction (Note 2) (7,354)

Net expenses **3,502,879**

Net investment income **8,762,333**

Net realized gain on investments (Notes 1 and 3) 15,094,614

Net realized loss on foreign currency transactions (Note 1) (1,078)

Net unrealized appreciation of assets and liabilities in foreign currencies during the year 460

Net unrealized appreciation of investments during the year 37,752,937

Net gain on investments **52,846,933**

Net increase in net assets resulting from operations **\$61,609,266**

Statement of changes in net assets

	Year ended 12/31/16	Year ended 12/31/15
Increase (decrease) in net assets		
Operations		
Net investment income	\$8,762,333	\$9,391,666
Net realized gain on investments and foreign currency transactions	15,093,536	28,798,325
Net unrealized appreciation (depreciation) of investments and assets and liabilities in foreign currencies	37,753,397	(52,171,776)
Net increase (decrease) in net assets resulting from operations	61,609,266	(13,981,785)
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(3,730,983)	(3,676,383)
Class IB	(5,509,380)	(4,623,024)
From net realized long-term gain on investments		
Class IA	(3,103,792)	—
Class IB	(5,186,880)	—
Increase (decrease) from capital share transactions (Note 4)	(18,988,496)	1,446,310
Total increase (decrease) in net assets	25,089,735	(20,834,882)
Net assets		
Beginning of year	470,659,442	491,494,324
End of year (including undistributed net investment income of \$8,834,670 and \$8,987,079, respectively)	\$495,749,177	\$470,659,442

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													
12/31/16	\$21.73	.44	2.48	2.92	(.46)	(.39)	(.85)	\$23.80	13.96	\$179,950	.59 ^e	2.01 ^e	16
12/31/15	22.76	.46	(1.07)	(.61)	(.42)	—	(.42)	21.73	(2.79)	180,032	.58	2.06	22
12/31/14	20.55	.39	2.23	2.62	(.41)	—	(.41)	22.76	12.97	202,797	.61	1.81	31
12/31/13	15.83	.39	4.72	5.11	(.39)	—	(.39)	20.55	32.72	204,742	.63	2.12	37
12/31/12	13.56	.37	2.27	2.64	(.37)	—	(.37)	15.83	19.62	181,642	.64	2.50	51
Class IB													
12/31/16	\$21.55	.38	2.46	2.84	(.41)	(.39)	(.80)	23.59	13.64	\$315,799	.84 ^e	1.77 ^e	16
12/31/15	22.58	.41	(1.08)	(.67)	(.36)	—	(.36)	21.55	(3.04)	290,628	.83	1.83	22
12/31/14	20.40	.33	2.21	2.54	(.36)	—	(.36)	22.58	12.66	288,698	.86	1.56	31
12/31/13	15.72	.34	4.69	5.03	(.35)	—	(.35)	20.40	32.41	266,168	.88	1.87	37
12/31/12	13.47	.33	2.25	2.58	(.33)	—	(.33)	15.72	19.30	205,628	.89	2.25	51

^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 (Note 2).

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

Notes to financial statements 12/31/16

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, 2016 through December 31, 2016.

Putnam VT Equity Income 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 growth and current income. The fund invests mainly in common stocks of midsize and large U.S. companies, with a focus on value stocks that offer the potential for capital growth, current income, or both. Under normal circumstances, Putnam Management invests at least 80% of the fund’s net assets in common stocks and other equity investments that offer the potential for current income. This policy may be changed only after 60 days’ notice to shareholders. 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 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.

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. At the close of the reporting period, fair value pricing was used for certain foreign securities in the portfolio. Securities quoted in foreign currencies, if any, are translated into U.S. dollars at the current exchange rate. Short-term securities with remaining maturities of 60 days or less are valued using an independent pricing service approved by the Trustees, and are classified as Level 2 securities.

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 closed forward currency contracts, 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 open forward currency contracts and assets and liabilities other than investments at the period end, resulting from changes in the exchange rate.

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 \$2,962,875 and the value of securities loaned amounted to \$2,872,324.

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 the higher of (1) the Federal Funds rate and (2) the overnight LIBOR plus 1.25% 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.

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, non-taxable dividends and from partnership income. 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 \$325,621 to increase undistributed net investment income, \$212 to decrease paid-in capital and \$325,409 to decrease accumulated net realized gain.

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	\$131,624,505
Unrealized depreciation	(20,011,641)
Net unrealized appreciation	111,612,864
Undistributed ordinary income	8,847,172
Undistributed long-term gain	14,974,591
Cost for federal income tax purposes	\$386,999,022

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 26.0% 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:

0.630%	of the first \$5 billion,
0.580%	of the next \$5 billion,
0.530%	of the next \$10 billion,
0.480%	of the next \$10 billion,
0.430%	of the next \$50 billion,
0.410%	of the next \$50 billion,
0.400%	of the next \$100 billion and
0.395%	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 0.476% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2018, 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 Management may from time to time voluntarily undertake to waive fees and/or reimburse certain fund expenses. Any such waiver or reimbursement would be voluntary and may be modified or discontinued by Putnam Management at any

time without notice. For the reporting period, Putnam Management voluntarily waived \$5,726.

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	\$122,404
Class IB	207,267
Total	\$329,671

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 \$73 under the expense offset arrangements and by \$7,281 under the brokerage/service arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$370, 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.

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 12/31/16		Year ended 12/31/15		Year ended 12/31/16		Year ended 12/31/15	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	271,613	\$5,853,115	537,636	\$12,062,886	1,431,898	\$30,535,590	2,377,351	\$52,943,696
Shares issued in connection with reinvestment of distributions	296,264	6,221,552	150,748	3,441,583	512,764	10,696,260	203,837	4,623,024
	567,877	12,074,667	688,384	15,504,469	1,944,662	41,231,850	2,581,188	57,566,720
Shares repurchased	(1,288,895)	(28,111,288)	(1,314,787)	(29,559,457)	(2,042,474)	(44,183,725)	(1,883,705)	(42,065,422)
Net increase (decrease)	(721,018)	\$(16,036,621)	(626,403)	\$(14,054,988)	(97,812)	\$(2,951,875)	697,483	\$15,501,298

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 at the beginning of the reporting period	Purchase cost	Sale proceeds	Investment income	Fair value at the end of the reporting period
Putnam Cash Collateral Pool, LLC*	\$10,137,525	\$177,375,865	\$184,550,515	\$92,382	\$2,962,875
Putnam Short Term Investment Fund**	12,519,428	76,264,526	75,952,777	51,780	12,831,177
Totals	\$22,656,953	\$253,640,391	\$260,503,292	\$144,162	\$15,794,052

* No management fees are charged to Putnam Cash Collateral Pool, LLC (See Note 1).

** Management fees charged to Putnam Short Term Investment Fund have been waived by Putnam Management.

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)	\$73,438,378	\$93,601,213
U.S. government securities (Long-term)	—	—
Total	\$73,438,378	\$93,601,213

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 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 — New pronouncements









In October 2016, the SEC adopted amendments to rules under the Investment Company Act of 1940 (“final rules”) intended to modernize the reporting and disclosure of information by registered investment companies. The final rules amend Regulation S-X and require funds to provide standardized, enhanced derivative disclosure in fund financial statements in a format designed for individual investors. The amendments to Regulation S-X also update the disclosures for other investments and investments in and advances to affiliates and amend the rules regarding the general form and content of fund financial statements. The compliance date for the amendments to Regulation S-X is August 1, 2017. Putnam Management is currently evaluating the amendments and their impact, if any, on the fund’s financial statements.




Federal tax information (Unaudited)

Pursuant to §852 of the Internal Revenue Code, as amended, the fund hereby designates \$16,714,899 as a capital gain dividend with respect to the taxable year ended December 31, 2016, or, if subsequently determined to be different, the net capital gain of such year.


The fund designated 96.82% 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			
LiaquatAhamed 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	
Robert J. Darretta Born 1946 Trustee since 2007	From 2009 until 2012, served as Health Care Industry Advisor to Permira, a global private equity firm. Until April 2007, was Vice Chairman of the Board of Directors of Johnson & Johnson. Served as Johnson & Johnson's Chief Financial Officer for a decade.	UnitedHealth Group, a diversified health-care 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.	Reach Out and Read of Greater New York, an organization dedicated to promoting childhood literacy; Great Lakes Science Center; College Now Greater Cleveland	
John A. Hill Born 1942 Trustee since 1985 and Chairman from 2000 to 2011	Founder and Vice-Chairman of First Reserve Corporation, the leading private equity buyout firm focused on the worldwide energy industry. Trustee and Chairman of the Board of Trustees of Sarah Lawrence College. Member of the Advisory Board of the Millstein Center for Global Markets and Corporate Ownership at The Columbia University Law School.	None	
Paul L. Joskow Born 1947 Trustee since 1997	Economist and President of the Alfred P. Sloan Foundation, a philanthropic institution focused primarily on research and education on issues related to science, technology, and economic performance. Elizabeth and James Killian Professor of Economics, Emeritus at the Massachusetts Institute of Technology (MIT). Prior to 2007, served as the Director of the Center for Energy and Environmental Policy Research 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	

Name Year of birth Position held	Principal occupations during past five years	Other directorships	
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	
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	
W. Thomas Stephens Born 1942 Trustee from 1997 to 2008 and since 2009	Retired as Chairman and Chief Executive Officer of Boise Cascade, LLC, a paper, forest products, and timberland assets company, in December 2008. Prior to 2010, Director of Boise Inc., a manufacturer of paper and packaging products.	Prior to April 2014, served as Director of TransCanada Pipelines Ltd., an energy infrastructure 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, 2016, there were 114 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
Director of Fund Administration Services, Putnam Investments and Putnam Management

Susan G. Malloy (Born 1957)
Vice President and Assistant Treasurer
Since 2007
Director of Accounting & 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 Associate Treasurer
Since 2000

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, 2016, 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
57-59 St James's Street
London, England SW1A 1LD

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
Robert J. Darretta
Katinka Domotorffy
John A. Hill
Paul L. Joskow
Robert E. Patterson
George Putnam, III
Robert L. Reynolds
W. Thomas Stephens

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.

