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Putnam Variable Trust

Putnam VT Research Fund

Annual report

12 | 31 | 21

Message from the Trustees

February 8, 2022

Dear Shareholder:

In 2021, most areas of the stock market had another above-average year as corporate earnings rose amid rapid gross domestic product growth. Bonds, on the other hand, had a subpar year, with inflation causing concern. Financial markets are now adjusting to a shift in monetary policy, as the U.S. Federal Reserve reduces its bond-purchasing program and considers raising interest rates.

In 2022, the evolving Covid-19 pandemic remains challenging. Still, companies have learned to adapt to unexpected hurdles. Trends in consumer spending, employment, and credit conditions have been encouraging. We believe economic conditions may remain supportive for financial markets this year.

As the economy shifts gears, Putnam's investment professionals will be actively managing your fund and monitoring risks, as the firm has done for more than 80 years.

Thank you for investing with Putnam.

Respectfully yours,



Robert L. Reynolds
President and Chief Executive Officer
Putnam Investments



Kenneth R. Leibler
Chair, Board of Trustees

Performance summary (as of 12/31/21)

Investment objective

Capital appreciation

Net asset value December 31, 2021

Class IA: \$35.41

Class IB: \$35.22

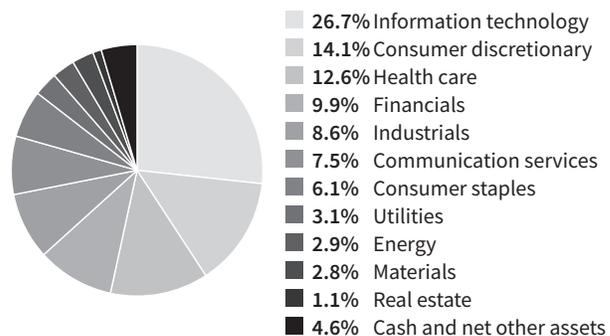
Total return at net asset value (as of 12/31/21)

	Class IA shares (9/30/98)	Class IB shares (9/30/98)	S&P 500 Index
1 year	24.44%	24.13%	28.71%
5 years	136.08	133.11	133.41
Annualized	18.74	18.44	18.47
10 years	367.89	356.34	362.57
Annualized	16.68	16.39	16.55
Life	574.01	537.44	625.36
Annualized	8.55	8.29	8.90

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

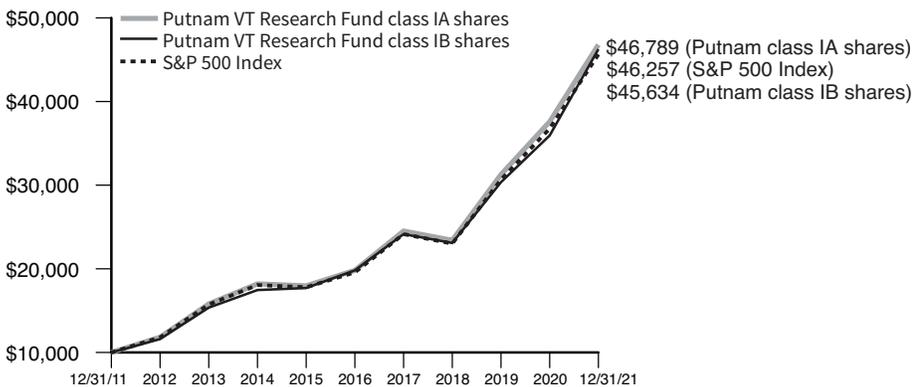
Recent performance may have benefited from one or more legal settlements.

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.

Cumulative total returns of a \$10,000 investment in class IA and class IB shares at net asset value — since 12/31/11



The S&P 500® Index is an unmanaged index of common stock performance.

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.

Report from your fund's managers

Can you describe the investing environment for the 12-month reporting period ended December 31, 2021?

At the start of the period, record monetary and fiscal stimulus and signs of global economic recovery were supportive of stocks. Volatility returned in February following concerns over global vaccine shortages, a sell-off in technology stocks, and a surge in new Covid-19 cases. In March, U.S. President Biden's \$1.9 trillion pandemic relief package helped lift investor sentiment. Stronger-than-expected corporate earnings further renewed investor confidence.

In the summer of 2021, many countries began moving past their peak number of Covid cases. Consumer spending increased, employment improved, economies reopened, and global demand surged. In October, U.S. inflation remained elevated, peaking to its highest level since November 1990. The following month, the U.S. Federal Reserve announced it would begin tapering its monthly asset-purchase program and could raise interest rates as soon as 2022. The global spread of a new Covid variant, Omicron, also rattled markets. Countries reinstated lockdowns and banned cross-border travel. Despite new risks, stocks were buoyed by strong corporate earnings. The S&P 500 Index, a broad measure of U.S. stocks, returned 28.71% for the 12-month period.

How did Putnam VT Research Fund perform for the reporting period?

The fund's class I shares posted a return of 24.44%, underperforming the benchmark S&P 500 Index for the 12-month reporting period.

What were some holdings that helped fund performance relative to the benchmark during the reporting period?

Cenovus Energy, which is not held in the benchmark, was the fund's top performer. This Canadian oil sands operator closed on its acquisition of Husky Energy in January 2021. Investors were impressed with the deal, which management projected would add \$1.2 billion in cost and capital synergy savings and be immediately accretive to shareholders. Alternative asset manager KKR, another out-of-benchmark holding, also aided fund results. KKR added \$90 billion to its assets under management following the acquisition of Global Atlantic Financial Group, a retirement and life insurance provider. A secular shift toward alternative investments also provided a tailwind for the stock. Our decision not to own the U.S. telecommunications provider Verizon Communications also was additive to results. Verizon had to delay the rollout of a new 5G service due to its potential interference with airplane safety systems, which dampened investor interest, and the stock declined.

What were some holdings that detracted from fund performance relative to the benchmark during the reporting period?

Fidelity National Information Services, a U.S.-based global payment processing provider, was the fund's top detractor. Despite posting solid revenues and earnings, FIS faced increased competition from

several smaller financial technology companies. These new market entrants grew faster than legacy merchant acquirers, which put downward pressure on FIS' stock price. Our investment in U.S. digital entertainment firm Activision Blizzard also faced setbacks during the period. Shares of the stock declined following allegations of workplace misconduct, which led to a series of investigations. We decided to sell the stock before period-end. An underweight position in technology giant Apple, which performed well over the period, also detracted from results.

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

In 2021, the U.S. economy weathered many obstacles, including the discovery of Covid-19 variants, rising inflation, changes in monetary policy, and uneven global growth. Companies have adapted to the challenges of pandemic-driven restrictions, resulting in record earnings growth. Vaccination rates have increased worldwide, and the potential for herd immunity remains promising, in our view. For equities, we have an overall optimistic outlook, based on continued strong corporate earnings. Ongoing supply chain disruptions, raw material cost inflation, and labor market shortages could be headwinds, in our view.

Our analyst team uses bottom-up research to select individual stocks that have the potential for capital appreciation. Our stock selection process assigns risks to individual companies, offering more downside protection from broader, macroeconomic risks, in our view. We believe active management of the fund also provides us with the flexibility to capitalize on new investment opportunities as they arise.

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

Consider these risks before investing: Growth stocks may be more susceptible to earnings disappointments, and value stocks may fail to rebound. The value of investments in the fund's portfolio may fall or fail to rise over extended periods of time for a variety of reasons, including general economic, political, or financial market conditions; investor sentiment and market perceptions; government actions; geopolitical events or changes; and factors related to a specific issuer, geography, industry, or sector. These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings.

Our investment techniques, analyses, and judgments may not produce the outcome we intend. The investments we select for the fund may not perform as well as other securities that we do not select for the fund. We, or the fund's other service providers, may experience disruptions or operating errors that could have a negative effect on the fund. You can lose money by investing in the fund.

Your fund's managers



Portfolio Manager **Kathryn B. Lakin** is Director of Equity Research. She joined Putnam in 2012 and has been in the investment industry since 2008.

Jacquelyne J. Cavanaugh; Andrew N. O'Brien, CFA; William C. Rives, CFA; and Walter D. Scully, CPA, are also Portfolio Managers of the fund.

Your fund's managers 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 7/1/21 to 12/31/21. 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
Net expenses for the fiscal year ended 12/31/20*	0.82%	1.07%
Total annual operating expenses for the fiscal year ended 12/31/20	0.83%	1.08%
Annualized expense ratio for the six-month period ended 12/31/21†	0.71%	0.96%

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.

*Reflects Putnam Management's contractual obligation to limit certain fund expenses through 4/30/22.

†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 12/31/21		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 12/31/21	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$3.74	\$5.05	\$3.62	\$4.89
Ending value (after expenses)	\$1,088.90	\$1,087.40	\$1,021.63	\$1,020.37

*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 12/31/21. 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 (184); and then dividing that result by the number of days in the year (365). 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 (184); and then dividing that result by the number of days in the year (365).

Report of Independent Registered Public Accounting Firm

To the Board of Trustees of Putnam Variable Trust and Shareholders of
Putnam VT Research Fund:

Opinion on the Financial Statements

We have audited the accompanying statement of assets and liabilities, including the fund's portfolio, of Putnam VT Research Fund (one of the funds constituting Putnam Variable Trust, referred to hereafter as the "Fund") as of December 31, 2021, the related statement of operations for the year ended December 31, 2021, the statement of changes in net assets for each of the two years in the period ended December 31, 2021, including the related notes, and the financial highlights for each of the five years in the period ended December 31, 2021 (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, 2021, 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, 2021 and the financial highlights for each of the five years in the period ended December 31, 2021 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, 2021 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, 2022

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

The fund's portfolio 12/31/21

COMMON STOCKS (95.4%)*	Shares	Value
Aerospace and defense (2.0%)		
Boeing Co. (The) †	521	\$104,888
CAE, Inc. (Canada) †	3,551	89,579
General Dynamics Corp.	554	115,492
Northrop Grumman Corp.	1,571	608,087
Raytheon Technologies Corp.	6,499	559,304
		1,477,350
Airlines (0.2%)		
Southwest Airlines Co. †	3,245	139,016
		139,016
Automobiles (1.9%)		
General Motors Co. †	2,496	146,340
Tesla, Inc. †	1,200	1,268,136
		1,414,476
Banks (2.7%)		
Bank of America Corp.	15,168	674,824
Citigroup, Inc.	19,584	1,182,678
Silergate Capital Corp. Class A †	855	126,711
		1,984,213
Beverages (2.1%)		
Coca-Cola Co. (The)	8,058	477,114
Constellation Brands, Inc. Class A	271	68,013
PepsiCo, Inc.	5,619	976,076
		1,521,203
Biotechnology (2.4%)		
AbbVie, Inc.	6,161	834,199
Amgen, Inc.	696	156,579
Biogen, Inc. †	237	56,861
Ginkgo Bioworks Holdings, Inc. † ^S	4,296	35,700
Moderna, Inc. †	502	127,498
Regeneron Pharmaceuticals, Inc. †	798	503,953
		1,714,790
Building products (1.0%)		
Fortune Brands Home & Security, Inc.	472	50,457
Johnson Controls International PLC	8,572	696,989
		747,446
Capital markets (3.8%)		
Apollo Global Management, Inc.	7,127	516,209
Goldman Sachs Group, Inc. (The)	2,534	969,382
KKR & Co., Inc.	9,003	670,724
Morgan Stanley	3,097	304,002
Quilter PLC (United Kingdom)	132,689	266,708
		2,727,025
Chemicals (1.9%)		
Albemarle Corp.	180	42,079
Corteva, Inc.	6,227	294,413
Diversey Holdings, Ltd. †	3,581	47,663
Dow, Inc.	1,189	67,440
Eastman Chemical Co.	674	81,493
Ecolab, Inc.	482	113,072
Linde PLC	700	242,501
PPG Industries, Inc.	683	117,777
Sherwin-Williams Co. (The)	987	347,582
		1,354,020
Containers and packaging (0.6%)		
Avery Dennison Corp.	1,355	293,452
Ball Corp.	1,160	111,673
		405,125

COMMON STOCKS (95.4%)* cont.	Shares	Value
Electric utilities (2.8%)		
Exelon Corp.	9,376	\$541,558
NextEra Energy, Inc.	5,375	501,810
NRG Energy, Inc. ^S	22,347	962,709
		2,006,077
Electrical equipment (1.0%)		
Eaton Corp. PLC	2,432	420,298
Emerson Electric Co.	3,213	298,713
		719,011
Electronic equipment, instruments, and components (0.4%)		
Vontier Corp.	8,731	268,304
		268,304
Entertainment (0.6%)		
Sea, Ltd. ADR (Singapore) †	612	136,911
Walt Disney Co. (The) †	1,732	268,269
		405,180
Equity real estate investment trusts (REITs) (1.1%)		
Gaming and Leisure Properties, Inc. ^R	12,727	619,296
Vornado Realty Trust ^R	4,382	183,431
		802,727
Food and staples retail (1.4%)		
BJ's Wholesale Club Holdings, Inc. †	777	52,036
Costco Wholesale Corp.	612	347,432
Walmart, Inc.	4,393	635,623
		1,035,091
Food products (0.2%)		
McCormick & Co., Inc. (non-voting shares)	1,776	171,579
		171,579
Health-care equipment and supplies (3.0%)		
Abbott Laboratories	3,930	553,108
Baxter International, Inc.	2,945	252,799
Boston Scientific Corp. †	8,796	373,654
Cooper Cos., Inc. (The)	297	124,425
DexCom, Inc. †	268	143,903
Edwards Lifesciences Corp. †	1,490	193,030
Intuitive Surgical, Inc. †	770	276,661
Medtronic PLC	1,277	132,106
Zimmer Biomet Holdings, Inc.	1,070	135,933
		2,185,619
Health-care providers and services (2.6%)		
Anthem, Inc.	620	287,395
Cigna Corp.	1,212	278,312
CVS Health Corp.	2,126	219,318
McKesson Corp.	557	138,453
UnitedHealth Group, Inc.	1,971	989,718
		1,913,196
Hotels, restaurants, and leisure (1.8%)		
Aramark	3,625	133,581
Booking Holdings, Inc. †	162	388,675
Chipotle Mexican Grill, Inc. †	161	281,468
Hilton Worldwide Holdings, Inc. †	2,355	367,356
Penn National Gaming, Inc. †	2,744	142,276
		1,313,356
Household durables (0.7%)		
PulteGroup, Inc.	8,627	493,119
		493,119
Household products (1.7%)		
Procter & Gamble Co. (The)	7,768	1,270,689
		1,270,689
Industrial conglomerates (0.9%)		
General Electric Co.	1,726	163,055
Honeywell International, Inc.	2,236	466,228
		629,283

COMMON STOCKS (95.4%)* cont.	Shares	Value
Insurance (3.3%)		
Alia Group, Ltd. (Hong Kong)	15,600	\$157,270
American International Group, Inc.	10,866	617,841
Assured Guaranty, Ltd.	14,419	723,834
AXA SA (France)	14,597	435,160
Prudential PLC (United Kingdom)	26,282	453,391
		2,387,496
Interactive media and services (6.9%)		
Alphabet, Inc. Class A †	1,275	3,693,726
Meta Platforms, Inc. Class A †	3,878	1,304,365
		4,998,091
Internet and direct marketing retail (5.0%)		
Amazon.com, Inc. †	1,089	3,631,096
		3,631,096
IT Services (5.6%)		
Fidelity National Information Services, Inc.	10,201	1,113,439
Mastercard, Inc. Class A	4,285	1,539,686
PayPal Holdings, Inc. †	3,706	698,877
Visa, Inc. Class A	3,159	684,587
		4,036,589
Life sciences tools and services (2.1%)		
Bio-Rad Laboratories, Inc. Class A †	363	274,272
Danaher Corp.	1,805	593,863
Thermo Fisher Scientific, Inc.	1,016	677,916
		1,546,051
Machinery (1.4%)		
Deere & Co.	713	244,481
Ingersoll Rand, Inc.	3,496	216,298
Otis Worldwide Corp.	6,365	554,201
		1,014,980
Metals and mining (0.4%)		
Alamos Gold, Inc. Class A (Canada)	18,531	142,503
Anglo American PLC (United Kingdom)	2,469	100,792
Newmont Corp.	712	44,158
		287,453
Multi-utilities (0.3%)		
Ameren Corp.	2,430	216,294
		216,294
Multiline retail (0.7%)		
Target Corp.	2,184	505,465
		505,465
Oil, gas, and consumable fuels (2.9%)		
Capricorn Energy PLC (United Kingdom)	21,542	54,905
Cenovus Energy, Inc. (Canada)	51,516	631,656
ConocoPhillips	2,205	159,157
Exxon Mobil Corp.	13,879	849,256
Royal Dutch Shell PLC Class A (United Kingdom)	10,606	232,822
TotalEnergies SE (France)	3,439	174,740
		2,102,536
Personal products (0.3%)		
Olaplex Holdings, Inc. †	8,629	251,363
		251,363
Pharmaceuticals (2.5%)		
Bristol-Myers Squibb Co.	2,165	134,988
Eli Lilly and Co.	1,253	346,104
Johnson & Johnson	3,146	538,186
Merck & Co., Inc.	3,407	261,112
Pfizer, Inc.	9,018	532,513
		1,812,903
Road and rail (1.8%)		
CSX Corp.	5,768	216,877
Union Pacific Corp.	4,370	1,100,934
		1,317,811

COMMON STOCKS (95.4%)* cont.	Shares	Value	
Semiconductors and semiconductor equipment (4.4%)			
Advanced Micro Devices, Inc. †	7,050	\$1,014,495	
NVIDIA Corp.	6,218	1,828,776	
Qualcomm, Inc.	1,773	324,229	
		3,167,500	
Software (12.7%)			
Adobe, Inc. †	1,601	907,862	
Intuit, Inc.	1,955	1,257,495	
Microsoft Corp.	14,063	4,729,668	
Oracle Corp.	9,433	822,652	
Salesforce.com, Inc. †	3,465	880,560	
Unity Software, Inc. †	4,421	632,159	
		9,230,396	
Specialty retail (3.3%)			
Bath & Body Works, Inc.	1,341	93,588	
Burlington Stores, Inc. †	355	103,486	
CarMax, Inc. †	1,754	228,423	
Home Depot, Inc. (The)	3,766	1,562,928	
O'Reilly Automotive, Inc. †	345	243,649	
TJX Cos., Inc. (The)	1,530	116,158	
Warby Parker, Inc. Class A †	1,704	79,338	
		2,427,570	
Technology hardware, storage, and peripherals (3.8%)			
Apple, Inc.	15,508	2,753,756	
		2,753,756	
Textiles, apparel, and luxury goods (0.6%)			
Levi Strauss & Co. Class A	3,877	97,041	
Lululemon Athletica, Inc. (Canada) †	223	87,293	
Nike, Inc. Class B	1,622	270,339	
		454,673	
Tobacco (0.2%)			
Altria Group, Inc.	3,415	161,837	
		161,837	
Trading companies and distributors (0.3%)			
United Rentals, Inc. †	698	231,938	
		231,938	
Wireless telecommunication services (0.1%)			
T-Mobile US, Inc. †	555	64,369	
		64,369	
Total common stocks (cost \$47,392,550)		\$69,298,062	
UNITS (0.1%)*			
GoGreen Investments Corp. †	7,909	\$79,960	
Total units (cost \$79,090)		\$79,960	
		Principal amount/ shares	
SHORT-TERM INVESTMENTS (5.7%)*			
Putnam Cash Collateral Pool, LLC 0.12% ^d	Shares	875,550	\$875,550
Putnam Short Term Investment Fund Class P 0.13% ^L	Shares	3,101,912	3,101,912
U.S. Treasury Bills 0.040%, 2/24/22 #		\$200,000	199,992
Total short-term investments (cost \$4,177,450)			\$4,177,454
Total investments (cost \$51,649,090)			\$73,555,476

Key to holding's abbreviations

ADR American Depository 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, 2021 through December 31, 2021 (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 \$72,664,047.

† 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 \$96,000 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.

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

At the close of the reporting period, the fund maintained liquid assets totaling \$39,653 to cover certain derivative contracts.

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.

FORWARD CURRENCY CONTRACTS at 12/31/21 (aggregate face value \$7,956,002)

Counterparty	Currency	Contract type*	Delivery date	Value	Aggregate face value	Unrealized appreciation/ (depreciation)
Bank of America N.A.						
	Canadian Dollar	Buy	1/19/22	\$134,786	\$133,146	\$1,640
	Canadian Dollar	Sell	1/19/22	134,786	135,575	789
	Singapore Dollar	Buy	2/16/22	268,110	264,357	3,753
Barclays Bank PLC						
	British Pound	Sell	3/16/22	784,685	772,010	(12,675)
	Euro	Sell	3/16/22	280,482	279,550	(932)
Citibank, N.A.						
	British Pound	Buy	3/16/22	225,433	221,844	3,589
	Canadian Dollar	Sell	1/19/22	224,986	226,275	1,289
	Danish Krone	Sell	3/16/22	202,921	202,307	(614)
	Euro	Sell	3/16/22	104,212	103,861	(351)
Goldman Sachs International						
	British Pound	Sell	3/16/22	838,811	825,331	(13,480)
	Canadian Dollar	Buy	1/19/22	236,212	237,567	(1,355)
	Canadian Dollar	Sell	1/19/22	236,212	233,336	(2,876)
HSBC Bank USA, National Association						
	British Pound	Buy	3/16/22	230,169	226,507	3,662
	Euro	Sell	3/16/22	111,167	110,796	(371)
JPMorgan Chase Bank N.A.						
	British Pound	Buy	3/16/22	160,076	157,535	2,541
	Canadian Dollar	Sell	1/19/22	504,045	506,982	2,937
	Singapore Dollar	Sell	2/16/22	400,161	401,955	1,794
Morgan Stanley & Co. International PLC						
	Canadian Dollar	Buy	1/19/22	106,643	107,254	(611)
	Canadian Dollar	Sell	1/19/22	106,643	105,343	(1,300)
	Danish Krone	Buy	3/16/22	203,335	201,582	1,753
	Euro	Sell	3/16/22	104,326	103,996	(330)
NatWest Markets PLC						
	Canadian Dollar	Sell	1/19/22	152,020	153,082	1,062
State Street Bank and Trust Co.						
	British Pound	Buy	3/16/22	321,235	316,119	5,116
	Canadian Dollar	Buy	1/19/22	185,143	186,219	(1,076)
	Canadian Dollar	Sell	1/19/22	185,143	187,212	2,069
	Hong Kong Dollar	Sell	2/16/22	119,380	119,591	211

FORWARD CURRENCY CONTRACTS at 12/31/21 (aggregate face value \$7,956,002) cont.

Counterparty	Currency	Contract type*	Delivery date	Value	Aggregate face value	Unrealized appreciation/ (depreciation)
UBSAG						
	British Pound	Buy	3/16/22	\$228,275	\$224,595	\$3,680
	Canadian Dollar	Buy	1/19/22	140,004	138,303	1,701
	Canadian Dollar	Sell	1/19/22	140,004	140,804	800
	Euro	Buy	3/16/22	46,633	46,482	151
	Swedish Krona	Sell	3/16/22	72,042	72,140	98
WestPac Banking Corp.						
	British Pound	Sell	3/16/22	548,833	540,091	(8,742)
	Canadian Dollar	Buy	1/19/22	114,311	112,919	1,392
	Canadian Dollar	Sell	1/19/22	114,311	114,964	653
	Euro	Buy	3/16/22	46,519	46,372	147
Unrealized appreciation						40,827
Unrealized (depreciation)						(44,713)
Total						\$(3,886)

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

FUTURES CONTRACTS OUTSTANDING at 12/31/21	Number of contracts	Notional amount	Value	Expiration date	Unrealized appreciation
S&P 500 Index E-Mini (Long)	8	\$1,906,472	\$1,903,400	Mar-22	\$23,572
Unrealized appreciation					23,572
Unrealized (depreciation)					—
Total					\$23,572

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:

	Valuation inputs		
	Level 1	Level 2	Level 3
Investments in securities:			
Common stocks*:			
Communication services	\$5,467,640	\$—	\$—
Consumer discretionary	10,239,755	—	—
Consumer staples	4,411,762	—	—
Energy	2,102,536	—	—
Financials	6,941,464	157,270	—
Health care	9,172,559	—	—
Industrials	6,276,835	—	—
Information technology	19,456,545	—	—
Materials	2,046,598	—	—
Real estate	802,727	—	—
Utilities	2,222,371	—	—
Total common stocks	69,140,792	157,270	—
Units	79,960	—	—
Short-term investments	—	4,177,454	—
Totals by level	\$69,220,752	\$4,334,724	\$—
	Valuation inputs		
	Level 1	Level 2	Level 3
Other financial instruments:			
Forward currency contracts	\$—	\$(3,886)	\$—
Futures contracts	23,572	—	—
Totals by level	\$23,572	\$(3,886)	\$—

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

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

Statement of assets and liabilities

12/31/21

Assets	
Investment in securities, at value, including \$854,406 of securities on loan (Note 1):	
Unaffiliated issuers (identified cost \$47,671,628)	\$69,578,014
Affiliated issuers (identified cost \$3,977,462) (Notes 1 and 5)	3,977,462
Foreign currency (cost \$149) (Note 1)	150
Dividends, interest and other receivables	60,562
Receivable for shares of the fund sold	167,325
Unrealized appreciation on forward currency contracts (Note 1)	40,827
Total assets	73,824,340
Liabilities	
Payable for investments purchased	6,190
Payable for shares of the fund repurchased	83,210
Payable for compensation of Manager (Note 2)	32,678
Payable for custodian fees (Note 2)	4,438
Payable for investor servicing fees (Note 2)	8,352
Payable for Trustee compensation and expenses (Note 2)	50,603
Payable for administrative services (Note 2)	775
Payable for distribution fees (Note 2)	9,526
Payable for variation margin on futures contracts (Note 1)	5,516
Unrealized depreciation on forward currency contracts (Note 1)	44,713
Collateral on securities loaned, at value (Note 1)	875,550
Other accrued expenses	38,742
Total liabilities	1,160,293
Net assets	\$72,664,047
Represented by	
Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$46,150,559
Total distributable earnings (Note 1)	26,513,488
Total — Representing net assets applicable to capital shares outstanding	\$72,664,047
Computation of net asset value Class IA	
Net assets	\$26,877,255
Number of shares outstanding	758,953
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$35.41
Computation of net asset value Class IB	
Net assets	\$45,786,792
Number of shares outstanding	1,299,901
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$35.22

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

Statement of operations

Year ended 12/31/21

Investment income

Dividends (net of foreign tax of \$8,405)	\$795,579
Interest (including interest income of \$2,069 from investments in affiliated issuers) (Note 5)	2,163
Securities lending (net of expenses) (Notes 1 and 5)	3,235
Total investment income	800,977

Expenses

Compensation of Manager (Note 2)	340,618
Investor servicing fees (Note 2)	44,056
Custodian fees (Note 2)	19,027
Trustee compensation and expenses (Note 2)	2,387
Distribution fees (Note 2)	94,318
Administrative services (Note 2)	1,662
Auditing and tax fees	29,643
Other	19,959
Total expenses	551,670
Expense reduction (Note 2)	(66)
Net expenses	551,604
Net investment income	249,373

Realized and unrealized gain (loss)

Net realized gain on:

Securities from unaffiliated issuers (Notes 1 and 3)	4,087,786
Foreign currency transactions (Note 1)	503
Forward currency contracts (Note 1)	101,788
Futures contracts (Note 1)	272,937
Written options (Note 1)	1,095
Total net realized gain	4,464,109

Change in net unrealized appreciation (depreciation) on:

Securities from unaffiliated issuers	8,607,507
Assets and liabilities in foreign currencies	(68)
Forward currency contracts	25,076
Futures contracts	19,364
Total change in net unrealized appreciation	8,651,879

Net gain on investments	13,115,988
Net increase in net assets resulting from operations	\$13,365,361

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

Statement of changes in net assets

	Year ended 12/31/21	Year ended 12/31/20
Increase in net assets		
Operations:		
Net investment income	\$249,373	\$263,785
Net realized gain on investments and foreign currency transactions	4,464,109	3,930,373
Change in net unrealized appreciation of investments and assets and liabilities in foreign currencies	8,651,879	4,572,568
Net increase in net assets resulting from operations	13,365,361	8,766,726
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(70,905)	(168,223)
Class IB	(32,902)	(147,353)
Net realized short-term gain on investments		
Class IA	(552,465)	(632,192)
Class IB	(745,788)	(793,832)
From net realized long-term gain on investments		
Class IA	(1,196,515)	(1,608,292)
Class IB	(1,615,208)	(2,019,501)
Increase from capital share transactions (Note 4)	11,300,267	1,165,289
Total increase in net assets	20,451,845	4,562,622
Net assets:		
Beginning of year	52,212,202	47,649,580
End of year	\$72,664,047	\$52,212,202

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

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

Period ended	INVESTMENT OPERATIONS:				LESS DISTRIBUTIONS:				RATIOS AND SUPPLEMENTAL DATA:					
	Net asset value, beginning of period	Net investment income (loss) ^a	Net realized and unrealized gain (loss) on investments	Total from investment operations	From net investment income	From net realized gain on investments	Total distributions	Non-recurring reimbursements	Net asset value, end of period	Total return at net asset value (%) ^{b,c}	Net assets, end of period (in thousands)	Ratio of expenses to average net assets (%) ^{b,d}	Ratio of net investment income (loss) to average net assets (%)	Portfolio turnover (%)
Class IA														
12/31/21	\$30.80	.18	6.90	7.08	(.10)	(2.37)	(2.47)	—	\$35.41	24.44	\$26,877	.73	.55	45
12/31/20	29.95	.19	4.21	4.40	(.25)	(3.30)	(3.55)	—	30.80	20.23	23,098	.82 ^e	.72 ^e	74
12/31/19	25.60	.28	7.65	7.93	(.41)	(3.17)	(3.58)	—	29.95	33.59	21,027	.78	1.03	77
12/31/18	26.81	.24	(1.45)	(1.21)	—	—	—	—	25.60	(4.51)	18,198	.81	.88	76
12/31/17	21.87	.20	4.95 ^f	5.15	(.21)	—	(.21)	— ^{g,h}	26.81	23.70 ^f	22,460	.81	.83	94
Class IB														
12/31/21	\$30.66	.10	6.86	6.96	(.03)	(2.37)	(2.40)	—	\$35.22	24.13	\$45,787	.98	.29	45
12/31/20	29.81	.13	4.19	4.32	(.17)	(3.30)	(3.47)	—	30.66	19.92	29,115	1.07 ^e	.47 ^e	74
12/31/19	25.49	.21	7.61	7.82	(.33)	(3.17)	(3.50)	—	29.81	33.24	26,622	1.03	.78	77
12/31/18	26.75	.17	(1.43)	(1.26)	—	—	—	—	25.49	(4.71)	23,104	1.06	.63	76
12/31/17	21.83	.14	4.93 ^f	5.07	(.15)	—	(.15)	— ^{g,h}	26.75	23.34 ^f	27,580	1.06	.58	94

^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 0.01% as a percentage of average net assets.

^f Reflects a non-recurring litigation payment received by the fund from Household International which amounted to the following amounts per share outstanding on May 8, 2017:

	Per share
Class IA	\$0.33
Class IB	0.33

This payment resulted in an increase to total returns of 1.52% for the period ended December 31, 2017.

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

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

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

Notes to financial statements 12/31/21

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, 2021 through December 31, 2021.

Putnam VT Research Fund (the fund) is a diversified series of Putnam Variable Trust (the Trust), a Massachusetts business trust registered under the Investment Company Act of 1940, as amended, as an open-end management investment company. The goal of the fund is to seek capital appreciation. The fund invests mainly in common stocks (growth or value stocks or both) of large U.S. companies that Putnam Management believes have favorable investment potential. For example, the fund may purchase stocks of companies with stock prices that reflect a value lower than that which Putnam Management places on the company. Putnam Management may also consider other factors that Putnam Management believes will cause the stock price to rise and may consider, among other factors, a company’s valuation, financial strength, growth potential, competitive position in its industry, projected future earnings, cash flows and dividends when deciding whether to buy or sell investments.

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

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

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

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

Note 1 — Significant accounting policies

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

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

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

determinations, evaluating the effectiveness of the pricing policies of the fund and reporting to the Pricing Committee.

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

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

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

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

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, if any, and including amortization and accretion of premiums and discounts on debt securities, 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.

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

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

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

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

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

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

Futures contracts The fund uses futures contracts to equitize cash.

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

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

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

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

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

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

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

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

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

At the close of the reporting period, the fund had a net liability position of \$38,356 on open derivative contracts subject to the Master Agreements. There was no collateral pledged by the fund at period end for these agreements.

Securities lending The fund may lend securities, through its agent, to qualified borrowers in order to earn additional income. The loans are collateralized by cash in an amount at least equal to the fair value of the securities loaned. The fair value of securities loaned is determined daily and any additional required collateral is allocated to the fund on the next business day. The remaining maturities of the securities lending transactions are considered overnight and continuous. The risk of borrower default will be borne by the fund's agent; the fund will bear the risk of loss with respect to the investment of the cash collateral. Income from securities lending, net of expenses, is included in investment income on the Statement of operations. Cash collateral is invested in Putnam Cash Collateral Pool, LLC, a limited liability company managed by an affiliate of Putnam Management. Investments in Putnam Cash Collateral Pool, LLC are valued at its closing net asset value each business day. There are no management fees charged to Putnam Cash Collateral Pool, LLC. At the close of the reporting period, the fund received cash collateral of \$875,550 and the value of securities loaned amounted to \$854,406.

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 Bank Funding Rate for the committed line of credit and 1.30% plus the higher of (1) the Federal Funds rate and (2) the Overnight Bank Funding Rate for the uncommitted line of credit. A closing fee equal to 0.04% of the committed line of credit and 0.04% of the uncommitted line of credit has been paid by the participating funds. In addition, a commitment fee of 0.21% per annum on any unutilized portion of the committed line of credit is allocated to the participating funds based on their relative net assets and paid quarterly. During the reporting period, the fund had no borrowings against these arrangements.

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

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

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

Distributions to shareholders Distributions to shareholders from net investment income are recorded by the fund on the ex-dividend date. Distributions from capital gains, if any, are recorded on the ex-dividend date and paid at least annually. The amount and character of income and gains to be distributed are determined in accordance with income tax regulations, which may differ from generally accepted accounting principles. These differences include temporary and/or permanent differences from losses on wash sale transactions, from foreign currency gains and losses, from unrealized gains and losses on certain futures contracts, from realized gains and losses on passive foreign investment companies 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 \$151,952 to increase undistributed net investment income and \$151,952 to decrease accumulated net realized gain.

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

Unrealized appreciation	\$22,997,141
Unrealized depreciation	(1,239,239)
Net unrealized appreciation	21,757,902
Undistributed ordinary income	376,411
Undistributed short-term gain	1,435,827
Undistributed long-term gain	2,943,295
Cost for federal income tax purposes	\$51,817,260

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 29.5% 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 0.540% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2023, to waive fees and/or reimburse the fund's expenses to the extent necessary to limit the cumulative expenses of the fund, exclusive of brokerage, interest, taxes, investment-related expenses, extraordinary expenses, acquired fund fees and expenses and payments under the fund's investor servicing contract, investment management contract and distribution plan, on a fiscal year-to-date basis to an annual rate of 0.20% of the fund's average net assets over such fiscal year-to-date period. During the reporting period, the fund's expenses were not reduced as a result of this limit.

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

The Putnam Advisory Company, LLC (PAC), an affiliate of Putnam Management, is authorized by the Trustees to manage a separate portion of the assets of the fund, as designated from time to time by Putnam Management or PIL. PAC did not manage any portion of the assets of the fund during the reporting period. If Putnam Management or PIL were to engage the services of PAC, Putnam Management or PIL, as applicable, would pay a quarterly sub-advisory fee to PAC for its services at the annual rate of 0.35% of the average net assets of the portion of the fund's assets for which PAC is engaged as sub-adviser.

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	\$17,671
Class IB	26,385
Total	\$44,056

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. For the reporting period, the fund's expenses were reduced by \$66 under the expense offset arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$43, 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)	\$32,730,028	\$26,945,304
U.S. government securities (Long-term)	—	—
Total	\$32,730,028	\$26,945,304

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 12/31/21		Year ended 12/31/20		Year ended 12/31/21		Year ended 12/31/20	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	57,889	\$1,924,814	39,218	\$1,065,478	461,688	\$15,050,902	109,500	\$2,954,668
Shares issued in connection with reinvestment of distributions	60,886	1,819,885	114,700	2,408,707	80,386	2,393,898	141,321	2,960,686
	118,775	3,744,699	153,918	3,474,185	542,074	17,444,800	250,821	5,915,354
Shares repurchased	(109,722)	(3,618,526)	(106,148)	(2,892,212)	(191,744)	(6,270,706)	(194,376)	(5,332,038)
Net increase	9,053	\$126,173	47,770	\$581,973	350,330	\$11,174,094	56,445	\$583,316

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 12/31/20	Purchase cost	Sale proceeds	Investment income	Shares outstanding and fair value as of 12/31/21
Short-term investments					
Putnam Cash Collateral Pool, LLC*	\$205,775	\$5,497,314	\$4,827,539	\$339	\$875,550
Putnam Short Term Investment Fund**	56,330	10,868,105	7,822,523	2,069	3,101,912
Total Short-term investments	\$262,105	\$16,365,419	\$12,650,062	\$2,408	\$3,977,462

*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.

Beginning in January 2020, global financial markets have experienced, and may continue to experience, significant volatility resulting from the spread of a virus known as Covid-19. The outbreak of Covid-19 has resulted in travel and border restrictions, quarantines, supply chain disruptions, lower consumer demand, and general market uncertainty. The effects of Covid-19 have adversely affected, and may continue to adversely affect, the global economy, the economies of certain nations, and individual issuers, all of which may negatively impact the fund's performance.

Note 7 — Summary of derivative activity

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

Purchased equity option contracts (contract amount)	\$—*
Written equity option contracts (contract amount)	\$—*
Futures contracts (number of contracts)	7
Forward currency contracts (contract amount)	\$6,900,000

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

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

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

Derivatives not accounted for as hedging instruments under ASC 815	Asset derivatives		Liability derivatives	
	Statement of assets and liabilities location	Fair value	Statement of assets and liabilities location	Fair value
Foreign exchange contracts	Receivables	\$40,827	Payables	\$44,713
Equity contracts	Receivables, Net assets — Unrealized appreciation	23,572*	Payables	—
Total		\$64,399		\$44,713

*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	Options	Futures	Forward currency contracts	Total
Foreign exchange contracts	\$—	\$—	\$101,788	\$101,788
Equity contracts	(4,119)	272,937	—	\$268,818
Total	\$(4,119)	\$272,937	\$101,788	\$370,606

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	Forward currency contracts	Total
Foreign exchange contracts	\$—	\$25,076	\$25,076
Equity contracts	19,364	—	\$19,364
Total	\$19,364	\$25,076	\$44,440

Note 8 — Offsetting of financial and derivative assets and liabilities

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

	Bank of America N.A.	Barclays Bank PLC	BofA Securities, Inc.	Citibank, N.A.	Goldman Sachs International	HSBC Bank USA, National Association
Assets:						
Futures contracts [§]	\$—	\$—	\$—	\$—	\$—	\$—
Forward currency contracts [#]	6,182	—	—	4,878	—	3,662
Total Assets	\$6,182	\$—	\$—	\$4,878	\$—	\$3,662
Liabilities:						
Futures contracts [§]	—	—	5,516	—	—	—
Forward currency contracts [#]	—	13,607	—	965	17,711	371
Total Liabilities	\$—	\$13,607	\$5,516	\$965	\$17,711	\$371
Total Financial and Derivative Net Assets	\$6,182	\$(13,607)	\$(5,516)	\$3,913	\$(17,711)	\$3,291
Total collateral received (pledged) ^{†##}	\$—	\$—	\$—	\$—	\$—	\$—
Net amount	\$6,182	\$(13,607)	\$(5,516)	\$3,913	\$(17,711)	\$3,291
<i>Controlled collateral received (including TBA commitments)**</i>	\$—	\$—	\$—	\$—	\$—	\$—
<i>Uncontrolled collateral received</i>	\$—	\$—	\$—	\$—	\$—	\$—
<i>Collateral (pledged) (including TBA commitments)**</i>	\$—	\$—	\$—	\$—	\$—	\$—

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

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

Covered by master netting agreement (Note 1).

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

§ Includes current day's variation margin only as reported on the Statement of assets and liabilities, which is not collateralized. Cumulative appreciation/(depreciation) for futures contracts is represented in the tables listed after the fund's portfolio. Collateral pledged for initial margin on futures contracts, which is not included in the table above, amounted to \$96,000.

JP Morgan Chase Bank N.A.	Morgan Stanley & Co. International PLC	NatWest Markets PLC	State Street Bank and Trust Co.	UBS AG	WestPac Banking Corp.	Total
\$—	\$—	\$—	\$—	\$—	\$—	\$—
7,272	1,753	1,062	7,396	6,430	2,192	40,827
\$7,272	\$1,753	\$1,062	\$7,396	\$6,430	\$2,192	\$40,827
—	—	—	—	—	—	5,516
—	2,241	—	1,076	—	8,742	44,713
\$—	\$2,241	\$—	\$1,076	\$—	\$8,742	\$50,229
\$7,272	\$(488)	\$1,062	\$6,320	\$6,430	\$(6,550)	\$(9,402)
\$—	\$—	\$—	\$—	\$—	\$—	\$—
\$7,272	\$(488)	\$1,062	\$6,320	\$6,430	\$(6,550)	\$—
\$—	\$—	\$—	\$—	\$—	\$—	\$—
\$—	\$—	\$—	\$—	\$—	\$—	\$—
\$—	\$—	\$—	\$—	\$—	\$—	\$—

Federal tax information (Unaudited)

Pursuant to §852 of the Internal Revenue Code, as amended, the fund hereby designates \$3,256,100 as a capital gain dividend with respect to the taxable year ended December 31, 2021, or, if subsequently determined to be different, the net capital gain of such year.

The fund designated 45.14% 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			Author; won Pulitzer Prize for <i>Lords of Finance: The Bankers Who Broke the World</i> .	Chairman of the Sun Valley Writers Conference, a literary not-for-profit organization, and a Trustee of the Journal of Philosophy.	
Ravi Akhoury Born 1947 Trustee since 2009			Private investor	Director of English Helper, Inc., a private software company; Trustee of the Rubin Museum, serving on the Investment Committee; and previously a Director of RAGE Frameworks, Inc.	
Barbara M. Baumann Born 1955 Trustee since 2010			President of Cross Creek Energy Corporation, a strategic consultant to domestic energy firms and direct investor in energy projects.	Director of Devon Energy Corporation, a publicly traded independent natural gas and oil exploration and production company; Director of National Fuel Gas Company, a publicly traded energy company that engages in the production, gathering, transportation, distribution, and marketing of natural gas; Senior Advisor to the energy private equity firm First Reserve; Director of Ascent Resources, LLC, a private independent exploration and production company; Director of Texas American Resources Company II, a private, independent oil and gas exploration and production company; member of the Finance Committee of the Children's Hospital of Colorado; member of the Investment Committee of the Board of The Denver Foundation; and previously a Director of publicly traded companies Buckeye Partners LP, UNS Energy Corporation, CVR Energy Company, and SM Energy Corporation.	
Katinka Domotorffy Born 1975 Trustee since 2012			Voting member of the Investment Committees of the Anne Ray Foundation and Margaret A. Cargill Foundation, part of the Margaret A. Cargill Philanthropies.	Director of the Great Lakes Science Center and of 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, the 10th president of Vassar College.	Director of Yale-NUS College and Trustee of Yale University.	
Paul L. Joskow Born 1947 Trustee since 1997			The Elizabeth and James Killian Professor of Economics, Emeritus at the Massachusetts Institute of Technology (MIT). From 2008 to 2017, the 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.	Vice Chair of the Board of Directors of the Whitehead Institute for Biomedical Research, a non-profit biomedical research institute; a Director of Exelon Corporation, an energy company focused on power services; and a member Emeritus of the Board of Advisors of the Boston Symphony Orchestra.	
Kenneth R. Leibler Born 1949 Trustee since 2006 Vice Chair from 2016 to 2018, and Chair since 2018			Vice Chairman Emeritus of the Board of Trustees of Beth Israel Deaconess Hospital in Boston. Member of the Investment Committee of the Boston Arts Academy Foundation.	Director of Eversource Corporation, which operates New England's largest energy delivery system; previously the Chairman of the Boston Options Exchange, an electronic market place for the trading of listed derivatives securities; previously the Chairman and Chief Executive Officer of the Boston Stock Exchange; and previously the President and Chief Operating Officer of the American Stock Exchange.	
George Putnam, III Born 1951 Trustee since 1984			Chairman of New Generation Research, Inc., a publisher of financial advisory and other research services, and President of New Generation Advisors, LLC, a registered investment adviser to private funds.	Director of The Boston Family Office, LLC, a registered investment adviser; a Trustee of the Gloucester Marine Genomics Institute; previously a Trustee of the Marine Biological Laboratory; and previously a Trustee of Epiphany School.	

Name Year of birth Position held	Principal occupations during past five years	Other directorships	
Manoj P. Singh Born 1952 Trustee since 2017	Until 2015, Chief Operating Officer and Global Managing Director at Deloitte Touche Tohmatsu, Ltd., a global professional services organization, serving 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 working in the fields of health, social and environmental policy, and international development; Trustee of Carnegie Mellon University; 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; and Director of DXC Technology, a global IT services and consulting company.	
Mona K. Sutphen Born 1967 Trustee since 2020	Senior Advisor at The Vistria Group, a private investment firm focused on middle-market companies in the healthcare, education, and financial services industries. From 2014 to 2018, Partner at Macro Advisory Partners, a global consulting firm.	Director of Unitek Learning, a private nursing and medical services education provider in the United States; Director of Pattern Energy Group LP, a private renewable energy company; previous Director of Pattern Energy, a publicly traded renewable energy company; Board Member, International Rescue Committee; Co-Chair of the Board of Human Rights First; Trustee of Mount Holyoke College; and member of the Advisory Board for the Center on Global Energy Policy at Columbia University's School of International and Public Affairs.	

Interested Trustee

Robert L. Reynolds* Born 1952 Trustee since 2008 and President and Chief Executive Officer of Putnam Investments since 2008	President and Chief Executive Officer of Putnam Investments; member of Putnam Investments' Board of Directors; and Chair of Great-West Lifeco U.S. LLC. Prior to 2019, also 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. LLC, a holding company that owns Putnam Investments and Great-West Financial, and a member of Great-West Financial's Board of Directors.	Director of the Concord Museum; Director of the Dana-Farber Cancer Institute; Director of the U.S. Ski & Snowboard Association Foundation; Chairman of the Boston Advisory Board of the American Ireland Fund; National Council Co-Chairman of the American Enterprise Institute; Executive Committee Member of the Greater Boston Chamber of Commerce; member of the U.S. Chamber of Commerce, Center for Capital Markets Competitiveness; Chairman of the Massachusetts High Technology Council; member of the Chief Executives Club of Boston; member of the Massachusetts General Hospital President's Council; and previously the Chairman of the Massachusetts Competitive Partnership.	
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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 100 Federal Street, Boston, MA 02110.

As of December 31, 2021, there were 100 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:

James F. Clark (Born 1974)

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

Nancy E. Florek (Born 1957)

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

Michael J. Higgins (Born 1976)

Vice President, Treasurer, and Clerk
Since 2010

Jonathan S. Horwitz (Born 1955)

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

Richard T. Kircher (Born 1962)

Vice President and BSA Compliance Officer
Since 2019
Assistant Director, Operational Compliance,
Putnam Investments and Putnam
Retail Management

Martin Lemaire (Born 1984)

Vice President and Derivatives Risk Manager
Since 2022
Risk Manager and Risk Analyst,
Putnam Investments

Susan G. Malloy (Born 1957)

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

Alan G. McCormack (Born 1964)

Vice President and Derivatives Risk Manager
Since 2022
Head of Quantitative Equities and Risk,
Putnam Investments

Denere P. Poulack (Born 1968)

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

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

Stephen J. Tate (Born 1974)

Vice President and Chief Legal Officer
Since 2021
General Counsel, Putnam Investments, Putnam
Management, and Putnam Retail Management

Mark C. Trenchard (Born 1962)

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

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

Other important information

Proxy voting

Putnam is committed to managing our mutual funds in the best interests of our shareholders. The Putnam funds' proxy voting guidelines and procedures, as well as information regarding how your fund voted proxies relating to portfolio securities during the 12-month period ended June 30, 2021, are available in the Individual Investors section of putnam.com and on the Securities and Exchange Commission's (SEC) website at 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

The 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-PORT within 60 days of the end of such fiscal quarter. Shareholders may obtain the fund's Form N-PORT from the SEC's website at www.sec.gov.

Prior to its use of Form N-PORT, the fund filed its complete schedule of its portfolio holdings with the SEC on Form N-Q, which is available online at www.sec.gov.

Fund information

Investment Manager

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

Investment Sub-Advisors

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

The Putnam Advisory Company, LLC
100 Federal Street
Boston, MA 02110

Marketing Services

Putnam Retail Management
Limited Partnership
100 Federal Street
Boston, MA 02110

Investor Servicing Agent

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

Custodian

State Street Bank and Trust Company

Legal Counsel

Ropes & Gray LLP

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP

Trustees

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

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.