

Putnam Variable Trust

Putnam VT Government Money Market Fund

Semiannual report

6 | 30 | 19

IMPORTANT NOTICE: Delivery of paper fund reports

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

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

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

Message from the Trustees

August 8, 2019

Dear Shareholder:

If there is any lesson to be learned from constantly changing financial markets, it is the importance of positioning your investment portfolio for your long-term goals. We believe that one strategy is to diversify across different asset classes and investment approaches.

We also believe your mutual fund investment offers a number of advantages, including constant monitoring by experienced investment professionals who maintain a long-term perspective. Putnam's portfolio managers and analysts take a research-intensive approach that includes risk management strategies designed to serve you through changing conditions.

Another key strategy, in our view, is seeking the counsel of a financial advisor. For over 80 years, Putnam has recognized the importance of professional investment advice. Your financial advisor can help in many ways, including defining and planning for goals such as retirement, evaluating the level of risk appropriate for you, and reviewing your investments on a regular basis and making adjustments as necessary.

As always, your fund's Board of Trustees remains committed to protecting the interests of Putnam shareholders like you, and we 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

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: *You can lose money by investing in the fund. Although the fund seeks to preserve the value of your investment at \$1.00 per share, it cannot guarantee it will do so. An investment in the fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. The fund's sponsor has no legal obligation to provide financial support to the fund, and you should not expect that the sponsor will provide financial support to the fund at any time.*

The values of money market investments usually rise and fall in response to changes in interest rates. Interest rate risk is generally lowest for investments with short maturities (a significant part of the fund's investments). Changes in the financial condition of an issuer or counterparty, changes in specific economic or political conditions that affect a particular type of issuer, and changes in general economic or political conditions can increase the risk of default by an issuer or counterparty, which can affect a security's or instrument's credit quality or value. Certain securities in which the fund may invest, including securities issued by certain U.S. government agencies and U.S. government sponsored enterprises, are not guaranteed by the U.S. government or supported by the full faith and credit of the United States. Mortgage-backed investments carry the risk that they may increase in value less when interest rates decline and decline in value more when interest rates rise. We may have to invest the proceeds from prepaid investments, including mortgage- and asset-backed investments, in other investments with less attractive terms and yields.

Performance summary (as of 6/30/19)

Investment objective

As high a rate of current income as Putnam Investment Management, LLC, believes is consistent with preservation of capital and maintenance of liquidity

Net asset value June 30, 2019

Class IA: \$1.00	Class IB: \$1.00
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Total return at net asset value

(as of 6/30/19)	Class IA shares*	Class IB shares†	Lipper VP (Underlying Funds) — Money Market Funds
6 months	1.01%	0.88%	0.91%
1 year	1.86	1.61	1.69
5 years	2.96	2.35	2.65
Annualized	0.59	0.47	0.52
10 years	3.08	2.45	2.85
Annualized	0.30	0.24	0.28
Life	156.13	149.17	156.41
Annualized	3.04	2.95	3.05
Current rate (as of 6/30/19)			
Current 7-day yield	2.00%	1.75%	

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

*Class inception date: February 1, 1988.

†Class inception date: April 30, 1998.

The 7-day yield is the most common gauge for measuring money market mutual fund performance. Yield reflects current performance more closely than total return.

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. Performance of class IB shares before their inception is derived from the historical performance of class IA shares, adjusted to reflect the higher operating expenses applicable to such shares. For more recent performance, contact your variable annuity provider who can provide you with performance that reflects the charges and expenses at your contract level.

Portfolio composition

Repurchase agreements	79.3%
U.S. government agency debt	11.4%
U.S. Treasury debt	9.6%
Cash and net other assets	-0.3%

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 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 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.

The cash and net other assets category may show a negative market value percentage as a result of the timing of trade-date versus settlement-date transactions.

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 1/1/19 to 6/30/19. They also show how much a \$1,000 investment would be worth at the close of the period, *assuming actual returns and expenses*. To estimate the ongoing expenses you paid over the period, divide your account value by \$1,000, then multiply the result by the number in the first line for the class of shares you own.

Compare your fund's expenses with those of other funds

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

Expense ratios

	Class IA	Class IB
Total annual operating expenses for the fiscal year ended 12/31/18	0.45%	0.70%
Annualized expense ratio for the six-month period ended 6/30/19	0.46%	0.71%

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.

Expenses per \$1,000

	Expenses and value for a \$1,000 investment, assuming actual returns for the 6 months ended 6/30/19		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 6/30/19	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$2.29	\$3.54	\$2.31	\$3.56
Ending value (after expenses)	\$1,010.10	\$1,008.80	\$1,022.51	\$1,021.27

*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 6/30/19. The expense ratio may differ for each share class.

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

Your fund's managers



Portfolio Manager **Joanne M. Driscoll, CFA**, joined Putnam in 1995 and has been in the investment industry since 1992.



Portfolio Manager **Jonathan M. Topper** has been in the investment industry since he joined Putnam in 1990.

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.

The fund's portfolio 6/30/19 (Unaudited)

REPURCHASE AGREEMENTS (79.2%)*	Principal amount	Value
Interest in \$407,750,000 joint tri-party repurchase agreement dated 6/28/19 with HSBC Bank USA, National Association due 7/1/19 — maturity value of \$23,204,872 for an effective yield of 2.520% (collateralized by various mortgage backed securities with coupon rates ranging from 2.500% to 6.000% and due dates ranging from 4/1/25 to 5/1/49, valued at \$415,992,340)	\$23,200,000	\$23,200,000
Interest in \$362,233,000 joint tri-party repurchase agreement dated 6/28/19 with Citigroup Global Markets, Inc. due 7/1/19 — maturity value of \$23,204,853 for an effective yield of 2.510% (collateralized by various U.S. Treasury notes and bonds with coupon rates ranging from 0.125% to 7.625% and due dates ranging from 9/30/22 to 4/15/23, valued at \$369,490,500)	23,200,000	23,200,000
Interest in \$136,701,000 joint tri-party repurchase agreement dated 6/28/19 with BofA Securities, Inc. due 7/1/19 — maturity value of \$23,431,881 for an effective yield of 2.500% (collateralized by a mortgage backed security with a coupon rate of 4.000% and a due date of 6/20/47, valued at \$139,435,020)	23,427,000	23,427,000
Total repurchase agreements (cost \$69,827,000)		\$69,827,000

U.S. GOVERNMENT AGENCY OBLIGATIONS (11.4%)*	Yield (%)	Maturity date	Principal amount	Value
Federal Farm Credit Banks Funding Corporation discount notes	2.708	11/27/19	\$300,000	\$296,722
Federal Farm Credit Banks Funding Corporation discount notes	2.670	9/3/19	300,000	298,603
Federal Farm Credit Banks Funding Corporation discount notes	2.635	8/6/19	900,000	897,669
Federal Farm Credit Banks Funding Corporation discount notes	2.614	7/8/19	391,000	390,805
Federal Farm Credit Banks Funding Corporation unsec. FRB	2.580	8/19/19	575,000	575,233
Federal Home Loan Banks unsec. bonds	2.561	10/21/19	1,350,000	1,345,580
Federal Home Loan Banks unsec. discount notes	2.481	9/26/19	250,000	248,520
Federal Home Loan Banks unsec. discount notes	2.470	8/2/19	900,000	898,048
Federal Home Loan Banks unsec. discount notes	2.465	7/2/19	473,000	472,968
Federal Home Loan Banks unsec. discount notes	2.191	11/20/19	1,200,000	1,189,729
Federal Home Loan Mortgage Corporation unsec. bonds	2.561	10/25/19	1,350,000	1,345,957

U.S. GOVERNMENT AGENCY OBLIGATIONS (11.4%)* cont.	Yield (%)	Maturity date	Principal amount	Value
Federal Home Loan Mortgage Corporation unsec. discount notes Ser. RB	2.175	11/12/19	\$750,000	\$743,984
Federal National Mortgage Association unsec. bonds	2.561	10/24/19	1,350,000	1,343,371
Total U.S. Government agency obligations (cost \$10,047,189)				\$10,047,189
U.S. TREASURY OBLIGATIONS (9.6%)*	Yield (%)	Maturity date	Principal amount	Value
U.S. Treasury FRN	2.235	4/30/21	\$900,000	\$900,064
U.S. Treasury FRN	2.211	1/31/21	900,000	900,056
U.S. Treasury FRN	2.141	10/31/20	900,000	899,436
U.S. Treasury FRN	2.139	7/31/20	1,000,000	1,000,032
U.S. Treasury FRN	2.129	4/30/20	1,000,000	1,000,025
U.S. Treasury Bills	2.585	8/15/19	900,000	897,171
U.S. Treasury Bills	2.527	9/5/19	900,000	895,949
U.S. Treasury Bills	2.518	8/29/19	1,100,000	1,095,579
U.S. Treasury Bills	2.506	9/12/19	900,000	895,544
Total U.S. treasury obligations (cost \$8,483,856)				\$8,483,856
Total investments (cost \$88,358,045)				\$88,358,045

Key to holding's abbreviations

- FRB** Floating Rate Bonds: the rate shown is the current interest rate at the close of the reporting period. Rates may be subject to a cap or floor. For certain securities, the rate may represent a fixed rate currently in place at the close of the reporting period.
- FRN** Floating Rate Notes: the rate shown is the current interest rate or yield at the close of the reporting period. Rates may be subject to a cap or floor. For certain securities, the rate may represent a fixed rate currently in place at the close of the reporting period.

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, 2019 through June 30, 2019 (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 \$88,182,518.

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

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

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

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

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

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

Investments in securities:	Valuation inputs		
	Level 1	Level 2	Level 3
Repurchase agreements	\$—	\$69,827,000	\$—
U.S. government agency obligations	—	10,047,189	—
U.S. treasury obligations	—	8,483,856	—
Totals by level	\$—	\$88,358,045	\$—

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

Statement of assets and liabilities

6/30/19 (Unaudited)

Assets	
Investment in securities, at value (Note 1):	
Unaffiliated issuers (identified cost \$18,531,045)	\$18,531,045
Repurchase agreements (identified cost \$69,827,000)	69,827,000
Cash	4,930
Interest and other receivables	90,034
Receivable for shares of the fund sold	121,412
Total assets	88,574,421
Liabilities	
Payable for shares of the fund repurchased	209,780
Payable for compensation of Manager (Note 2)	20,522
Payable for custodian fees (Note 2)	9,229
Payable for investor servicing fees (Note 2)	10,420
Payable for Trustee compensation and expenses (Note 2)	89,713
Payable for administrative services (Note 2)	364
Payable for distribution fees (Note 2)	9,033
Payable for auditing and tax fees	21,971
Other accrued expenses	20,871
Total liabilities	391,903
Net assets	\$88,182,518
Represented by	
Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$88,188,838
Total distributable earnings (Note 1)	(6,320)
Total — Representing net assets applicable to capital shares outstanding	\$88,182,518
Computation of net asset value Class IA	
Net assets	\$44,474,332
Number of shares outstanding	44,477,340
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$1.00
Computation of net asset value Class IB	
Net assets	\$43,708,186
Number of shares outstanding	43,711,485
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$1.00

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

Statement of operations

Six months ended 6/30/19 (Unaudited)

Investment income	
Interest	\$1,100,363
Total investment income	1,100,363
Expenses	
Compensation of Manager (Note 2)	125,249
Investor servicing fees (Note 2)	31,436
Custodian fees (Note 2)	4,850
Trustee compensation and expenses (Note 2)	2,282
Distribution fees (Note 2)	54,533
Administrative services (Note 2)	1,173
Auditing and tax fees	21,546
Other	17,426
Total expenses	258,495
Expense reduction (Note 2)	(15)
Net expenses	258,480
Net investment income	841,883
Net increase in net assets resulting from operations	\$841,883

Statement of changes in net assets

	Six months ended 6/30/19*	Year ended 12/31/18
Decrease in net assets		
Operations:		
Net investment income	\$841,883	\$1,223,319
Net increase in net assets resulting from operations	841,883	1,223,319
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(459,494)	(677,635)
Class IB	(386,292)	(546,559)
Decrease from capital share transactions (Note 4)	(5,120,795)	(6,064,124)
Total decrease in net assets	(5,124,698)	(6,064,999)
Net assets:		
Beginning of period	93,307,216	99,372,215
End of period	\$88,182,518	\$93,307,216

* Unaudited.

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)	Net realized gain (loss) on investments	Total from investment operations	From net investment income	Total distributions	Non-recurring payment	Net asset value, end of period	Total return at net asset value (%) ^{a,b}	Net assets, end of period (in thousands)	Ratio of expenses to average net assets (%) ^{a,c}	Ratio of net investment income (loss) to average net assets (%)
Class IA												
6/30/19†	\$1.00	.0100	—	.0100	(.0100)	(.0100)	—	\$1.00	1.01*	\$44,474	.23*	1.00*
12/31/18	1.00	.0142	—	.0142	(.0142)	(.0142)	—	1.00	1.43	48,473	.45	1.41
12/31/17	1.00	.0047	—	.0047	(.0047)	(.0047)	—	1.00	.47	50,212	.45 ^d	.46 ^d
12/31/16	1.00	.0001	(.0001)	— ^e	(.0001)	(.0001)	—	1.00	.01	55,915	.37 ^d	.01 ^d
12/31/15	1.00	.0001	— ^e	.0001	(.0001)	(.0001)	—	1.00	.01	64,790	.19 ^d	.01 ^d
12/31/14	1.00	.0001	—	.0001	(.0001)	(.0001)	.0017 ^f	1.00	.01	75,352	.13 ^d	.01 ^d
Class IB												
6/30/19†	\$1.00	.0087	—	.0087	(.0088)	(.0088)	—	\$1.00	.88*	\$43,708	.35*	.87*
12/31/18	1.00	.0117	—	.0117	(.0117)	(.0117)	—	1.00	1.18	44,834	.70	1.17
12/31/17	1.00	.0025	—	.0025	(.0024)	(.0024)	—	1.00	.24	49,160	.67 ^d	.24 ^d
12/31/16	1.00	.0001	(.0001)	— ^e	(.0001)	(.0001)	—	1.00	.01	54,124	.38 ^d	.01 ^d
12/31/15	1.00	.0001	— ^e	.0001	(.0001)	(.0001)	—	1.00	.01	63,632	.19 ^d	.01 ^d
12/31/14	1.00	.0001	—	.0001	(.0001)	(.0001)	.0016 ^f	1.00	.01	78,635	.13 ^d	.01 ^d

* Not annualized.

† Unaudited.

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

^b Total return assumes dividend reinvestment.

^c Includes amounts paid through expense offset arrangements, if any (Note 2). Also excludes acquired fund fees and expenses, if any.

^d Reflects a voluntary waiver of certain fund expenses in effect during the period relating to the enhancement of certain annualized net yields of the fund. As a result of such waivers, the expenses of each class reflect a reduction of the following amounts as a percentage of average net assets (Note 2):

	12/31/17	12/31/16	12/31/15	12/31/14
Class IA	N/A	0.08%	0.24%	0.32%
Class IB	0.03%	0.32	0.49	0.57

^e Amount represents less than \$0.0001 per share.

^f Reflects a voluntary non-recurring payment from Putnam Investments.

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

Notes to financial statements 6/30/19 (Unaudited)

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, 2019 through June 30, 2019.

Putnam VT Government Money Market 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 as high a rate of current income as Putnam Management believes is consistent with preservation of capital and maintenance of liquidity. The fund invests at least 99.5 percent of the fund’s total assets in cash, U.S. government securities and repurchase agreements that are fully collateralized by U.S. government securities or cash. The fund invests mainly in debt securities that are obligations of the U.S. government, its agencies and instrumentalities and accordingly are backed by the full faith and credit of the United States (e.g., U.S. Treasury bills) or by the credit of a federal agency or government-sponsored entity (e.g., securities issued by Fannie Mae and Freddie Mac). The U.S. government securities in which the fund invests may also include variable and floating rate instruments and when-issued and delayed delivery securities (i.e., payment or delivery of the securities occurs at a future date for a predetermined price). Under normal circumstances, the fund invests at least 80% of the fund’s net assets in U.S. government securities and repurchase agreements that are fully collateralized by U.S. government securities. This policy may be changed only after 60 days’ notice to shareholders. The securities purchased by the fund are subject to quality, maturity, diversification and other requirements pursuant to rules promulgated by the SEC. Putnam Management may consider, among other factors, credit and interest rate risks and characteristics of the issuer or counterparty, as well as general market conditions, 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 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. Shares of each class would receive their pro-rata share of the net assets of the fund, if the fund were liquidated. 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.

The valuation of the fund’s portfolio instruments is determined by means of the amortized cost method (which approximates fair value) as set forth in Rule 2a-7 under the Investment Company Act of 1940. The amortized cost of an instrument is determined by valuing it at its original cost and thereafter amortizing any discount or premium from its face value at a constant rate until maturity and is generally categorized as a Level 2 security.

Joint trading account Pursuant to an exemptive order from the SEC, the fund may transfer uninvested cash balances into a joint trading account along with the cash of other registered investment companies and certain other accounts managed by Putnam Management. These balances may be invested in issues of short-term investments having maturities of up to 90 days.

Repurchase agreements The fund, or any joint trading account, through its custodian, receives delivery of the underlying securities, the fair value of which at the time of purchase is required to be in an amount at least equal to the resale price, including accrued interest. Collateral for certain tri-party repurchase agreements, which totaled \$71,229,332 at the end of the reporting period, is held at the counterparty’s custodian in a segregated account for the benefit of the fund and the counterparty. Putnam Management is responsible for determining that the value of these underlying securities is at all times at least equal to the resale price, including accrued interest. In the event of default or bankruptcy by the other party to the agreement, retention of the collateral may be subject to legal proceedings.

Security transactions and related investment income Security transactions are recorded on the trade date (the date the order to buy or sell is executed). Interest income is recorded on the accrual basis. Premiums and discounts from purchases of short-term investments are amortized/accreted at a constant rate until maturity. Gains or losses on securities sold are determined on the identified cost basis.

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 lend to other Putnam funds that permit such transactions. Interfund lending transactions are subject to each fund’s investment policies and borrowing and lending limits. Interest earned or paid on the interfund lending transaction will be based on the average of certain current market rates. During the reporting period, the fund did not utilize the program.

Lines of credit The fund participates, along with other Putnam funds, in a \$317.5 million unsecured committed line of credit and a \$235.5 million unsecured uncommitted line of credit, both provided by State Street. Borrowings may be made for temporary or emergency purposes, including the funding of shareholder redemption requests and trade settlements. Interest is charged to the fund based on the fund’s borrowing at a rate equal to 1.25% plus the higher of (1) the Federal Funds rate and (2) the overnight LIBOR for the committed line of credit and the Federal Funds rate plus 1.30% for the uncommitted line of credit. A closing fee equal to 0.04% of the committed line of credit and 0.04% of the uncommitted line of credit has been paid by the participating funds. In addition, a commitment fee of 0.21% per annum on any unutilized portion of the committed line of credit is allocated to the participating funds based on their relative net assets and paid quarterly. During the reporting period, the fund had no borrowings against these arrangements.

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

The fund is subject to the provisions of Accounting Standards Codification 740 *Income Taxes* (ASC 740). ASC 740 sets forth a minimum threshold for financial statement recognition of the benefit of a tax position taken or expected to be taken in a tax return. The fund did not have a liability to record for any unrecognized tax

benefits in the accompanying financial statements. No provision has been made for federal taxes on income, capital gains or unrealized appreciation on securities held nor for excise tax on income and capital gains. Each of the fund's federal tax returns for the prior three fiscal years remains subject to examination by the Internal Revenue Service.

Under the Regulated Investment Company Modernization Act of 2010, the fund will be permitted to carry forward capital losses incurred for an unlimited period and the carry forwards will retain their character as either short-term or long-term capital losses. At December 31, 2018, the fund had the following capital loss carryovers available, to the extent allowed by the Code, to offset future net capital gain, if any:

Loss carryover		
Short-term	Long-term	Total
\$—	\$3,278	\$3,278

The aggregate identified cost on a financial reporting and tax basis is the same.

Distributions to shareholders Income dividends are recorded daily by the fund and are paid monthly. Distributions from capital gains, if any, are 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. Dividend sources are estimated at the time of declaration. Actual results may vary. Any non-taxable return of capital cannot be determined until final tax calculations are completed after the end of the fund's fiscal year. 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.

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 37.2% 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:

- 0.440% of the first \$5 billion,
- 0.390% of the next \$5 billion,
- 0.340% of the next \$10 billion,
- 0.290% of the next \$10 billion,
- 0.240% of the next \$50 billion,
- 0.220% of the next \$50 billion,
- 0.210% of the next \$100 billion and
- 0.205% 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 0.139% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2021, 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 0.25% of the average net assets of the portion of the fund managed by PIL.

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

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

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

Class IA	\$16,042
Class IB	15,394
Total	\$31,436

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 \$15 under the expense offset arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$63, 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 (including maturities) of investment securities (all short-term obligations) aggregated \$8,074,991,631 and \$8,081,651,000, respectively. 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 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			
	Six months ended 6/30/19		Year ended 12/31/18		Six months ended 6/30/19		Year ended 12/31/18	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	9,433,097	\$9,433,097	24,174,459	\$24,174,459	5,766,229	\$5,766,229	11,498,242	\$11,498,242
Shares issued in connection with reinvestment of distributions	459,494	459,494	677,635	677,635	386,292	386,292	546,559	546,559
	9,892,591	9,892,591	24,852,094	24,852,094	6,152,521	6,152,521	12,044,801	12,044,801
Shares repurchased	(13,889,672)	(13,889,672)	(26,590,539)	(26,590,539)	(7,276,235)	(7,276,235)	(16,370,480)	(16,370,480)
Net decrease	(3,997,081)	\$(3,997,081)	(1,738,445)	\$(1,738,445)	(1,123,714)	\$(1,123,714)	(4,325,679)	\$(4,325,679)

Note 5 — 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.

Note 6 — 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.

	BofA Securities, Inc.	Citigroup Global Markets, Inc.	HSBC Bank USA, National Association	Total
Assets:				
Repurchase agreements**	\$23,427,000	\$23,200,000	\$23,200,000	\$69,827,000
Total Assets	\$23,427,000	\$23,200,000	\$23,200,000	\$69,827,000
Total Financial and Derivative Net Assets	\$23,427,000	\$23,200,000	\$23,200,000	\$69,827,000
Total collateral received (pledged)†##	\$23,427,000	\$23,200,000	\$23,200,000	
Net amount	\$—	\$—	\$—	
<i>Controlled collateral received (including TBA commitments)**</i>	\$—	\$—	\$—	\$—
<i>Uncontrolled collateral received</i>	\$23,895,540	\$23,664,822	\$23,668,969	\$71,229,332
<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.

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

Trustee approval of management contract

General conclusions

The Board of Trustees of The Putnam Funds oversees the management of each fund and, as required by law, determines annually whether to approve the continuance of your fund's management contract with Putnam Investment Management, LLC ("Putnam Management") and the sub-management contract with respect to your fund between Putnam Management and its affiliate, Putnam Investments Limited ("PIL"). The Board, with the assistance of its Contract Committee, requests and evaluates all information it deems reasonably necessary under the circumstances in connection with its annual contract review. The Contract Committee consists solely of Trustees who are not "interested persons" (as this term is defined in the Investment Company Act of 1940, as amended (the "1940 Act")) of The Putnam Funds ("Independent Trustees").

At the outset of the review process, members of the Board's independent staff and independent legal counsel discussed with representatives of Putnam Management the annual contract review materials furnished to the Contract Committee during the course of the previous year's review, identifying possible changes in these materials that might be necessary or desirable for the coming year. Following these discussions and in consultation with the Contract Committee, the Independent Trustees' independent legal counsel requested that Putnam Management and its affiliates furnish specified information, together with any additional information that Putnam Management considered relevant, to the Contract Committee. Over the course of several months ending in June 2019, the Contract Committee met on a number of occasions with representatives of Putnam Management, and separately in executive session, to consider the information that Putnam Management provided. Throughout this process, the Contract Committee was assisted by the members of the Board's independent staff and by independent legal counsel for The Putnam Funds and the Independent Trustees.

In May 2019, the Contract Committee met in executive session to discuss and consider its recommendations with respect to the continuance of the contracts. At the Trustees' June 2019 meeting, the Contract Committee met in executive session with the other Independent Trustees to review a summary of the key financial, performance and other data that the Contract Committee considered in the course of its review. The Contract Committee then presented its written report, which summarized the key factors that the Committee had considered and set forth its recommendations. The Contract Committee recommended, and the Independent Trustees approved, the continuance of your fund's management and sub-management contracts, effective July 1, 2019. (Because PIL is an affiliate of Putnam Management and Putnam Management remains fully responsible for all services provided by PIL, the Trustees have not attempted to evaluate PIL as a separate entity, and all subsequent references to Putnam Management below should be deemed to include reference to PIL as necessary or appropriate in the context.)

The Independent Trustees' approval was based on the following conclusions:

- That the fee schedule in effect for your fund represented reasonable compensation in light of the nature and quality of the services being provided to the fund, the fees paid by competitive funds, the costs incurred by Putnam Management in providing services to the fund, and the application of certain reductions and waivers noted below; and

- That the fee schedule in effect for your fund represented an appropriate sharing between fund shareholders and Putnam Management of such economies of scale as may exist in the management of the fund at current asset levels.

These conclusions were based on a comprehensive consideration of all information provided to the Trustees and were not the result of any single factor. Some of the factors that figured particularly in the Trustees' deliberations and how the Trustees considered these factors are described below, although individual Trustees may have evaluated the information presented differently, giving different weights to various factors. It is also important to recognize that the management arrangements for your fund and the other Putnam funds are the result of many years of review and discussion between the Independent Trustees and Putnam Management, that some aspects of the arrangements may receive greater scrutiny in some years than others, and that the Trustees' conclusions may be based, in part, on their consideration of fee arrangements in previous years. For example, with some minor exceptions, the funds' current fee arrangements under the management contracts were first implemented at the beginning of 2010 following extensive review by the Contract Committee and discussions with representatives of Putnam Management, as well as approval by shareholders.

Management fee schedules and total expenses

The Trustees reviewed the management fee schedules in effect for all Putnam funds, including fee levels and breakpoints. The Trustees also reviewed the total expenses of each Putnam fund, recognizing that in most cases management fees represented the major, but not the sole, determinant of total costs to fund shareholders. (Two funds have implemented so-called "all-in" management fees covering substantially all routine fund operating costs.)

In reviewing fees and expenses, the Trustees generally focus their attention on material changes in circumstances — for example, changes in assets under management, changes in a fund's investment strategy, changes in Putnam Management's operating costs or profitability, or changes in competitive practices in the mutual fund industry — that suggest that consideration of fee changes might be warranted. The Trustees concluded that the circumstances did not indicate that changes to the management fee structure for your fund would be appropriate at this time.

Under its management contract, your fund has the benefit of breakpoints in its management fee schedule that provide shareholders with economies of scale in the form of reduced fee rates as assets under management in the Putnam family of funds increase. The Trustees concluded that the fee schedule in effect for your fund represented an appropriate sharing of economies of scale between fund shareholders and Putnam Management.

As in the past, the Trustees also focused on the competitiveness of each fund's total expense ratio. In order to support the effort to have fund expenses meet competitive standards, the Trustees and Putnam Management and the funds' investor servicing agent, Putnam Investor Services, Inc. ("PSERV"), have implemented expense limitations that were in effect during your fund's fiscal year ending in 2018. These expense limitations were: (i) a contractual expense limitation applicable to all open-end funds of 25 basis points on investor servicing fees and expenses and (ii) a contractual expense limitation applicable to specified open-end funds, including your fund, of 20 basis points on so-called "other expenses" (i.e., all expenses exclusive of management fees, distribution fees, investor servicing fees, investment-related expenses, interest, taxes, brokerage

commissions, acquired fund fees and expenses and extraordinary expenses). These expense limitations attempt to maintain competitive expense levels for the funds. Most funds, including your fund, had sufficiently low expenses that these expense limitations were not operative during their fiscal years ending in 2018. Putnam Management and PSERV have agreed to maintain these expense limitations until at least April 30, 2021. The support of Putnam Management and PSERV for these expense limitation arrangements was an important factor in the Trustees' decision to approve the continuance of your fund's management and sub-management contracts.

The Trustees reviewed comparative fee and expense information for a custom group of competitive funds selected by Broadridge Financial Solutions, Inc. ("Broadridge"). This comparative information included your fund's percentile ranking for effective management fees and total expenses (excluding any applicable 12b-1 fees), which provides a general indication of your fund's relative standing. In the custom peer group, your fund ranked in the second quintile in effective management fees (determined for your fund and the other funds in the custom peer group based on fund asset size and the applicable contractual management fee schedule) and in the second quintile in total expenses (excluding any applicable 12b-1 fees) as of December 31, 2018. The first quintile represents the least expensive funds and the fifth quintile the most expensive funds. The fee and expense data reported by Broadridge as of December 31, 2018 reflected the most recent fiscal year-end data available in Broadridge's database at that time.

In connection with their review of fund management fees and total expenses, the Trustees also reviewed the costs of the services provided and the profits realized by Putnam Management and its affiliates from their contractual relationships with the funds. This information included trends in revenues, expenses and profitability of Putnam Management and its affiliates relating to the investment management, investor servicing and distribution services provided to the funds. In this regard, the Trustees also reviewed an analysis of Putnam Management's revenues, expenses and profitability, allocated on a fund-by-fund basis, with respect to the funds' management, distribution, and investor servicing contracts. For each fund, the analysis presented information about revenues, expenses and profitability for each of the agreements separately and for the agreements taken together on a combined basis. The Trustees concluded that, at current asset levels, the fee schedules in place represented reasonable compensation for the services being provided and represented an appropriate sharing between fund shareholders and Putnam Management of such economies of scale as may exist in the management of the Putnam funds at that time.

The information examined by the Trustees in connection with their annual contract review for the Putnam funds included information regarding fees charged by Putnam Management and its affiliates to institutional clients, including defined benefit pension and profit-sharing plans and sub-advised mutual funds. This information included, in cases where an institutional product's investment strategy corresponds with a fund's strategy, comparisons of those fees with fees charged to the Putnam funds, as well as an assessment of the differences in the services provided to these different types of clients as compared to the services provided to the Putnam funds. The Trustees observed that the differences in fee rates between these clients and the Putnam funds are by no means uniform when examined by individual asset sectors, suggesting that differences in the pricing of investment management services to these types of clients may reflect, among other things, historical competitive forces operating in separate markets. The Trustees considered the fact that in many cases

fee rates across different asset classes are higher on average for mutual funds than for institutional clients, and the Trustees also considered the differences between the services that Putnam Management provides to the Putnam funds and those that it provides to its other clients. The Trustees did not rely on these comparisons to any significant extent in concluding that the management fees paid by your fund are reasonable.

Investment performance

The quality of the investment process provided by Putnam Management represented a major factor in the Trustees' evaluation of the quality of services provided by Putnam Management under your fund's management contract. The Trustees were assisted in their review of the Putnam funds' investment process and performance by the work of the investment oversight committees of the Trustees and the full Board of Trustees, which meet on a regular basis with the funds' portfolio teams and with the Chief Investment Officers and other senior members of Putnam Management's Investment Division throughout the year. The Trustees concluded that Putnam Management generally provides a high-quality investment process — based on the experience and skills of the individuals assigned to the management of fund portfolios, the resources made available to them, and in general Putnam Management's ability to attract and retain high-quality personnel — but also recognized that this does not guarantee favorable investment results for every fund in every time period.

The Trustees considered that, after a strong start to the year, 2018 was a mixed year for The Putnam Funds, with the Putnam open-end Funds' performance, on an asset-weighted basis, ranking in the 54th percentile of their Lipper Inc. ("Lipper") peers (excluding those Putnam funds that are evaluated based on their total returns versus selected investment benchmarks). The Trustees also noted that The Putnam Funds were ranked by the Barron's/Lipper Fund Families survey as the 41st-best performing mutual fund complex out of 57 complexes for the one-year period ended December 31, 2018 and the 29th-best performing mutual fund complex out of 55 complexes for the five-year period ended December 31, 2018. The Trustees observed that The Putnam Funds' performance over the longer-term continued to be strong, ranking 6th out of 49 mutual fund complexes in the survey over the ten-year period ended 2018. In addition, the Trustees noted that 22 of the funds were four- or five-star rated by Morningstar Inc. at the end of 2018. They also noted, however, the disappointing investment performance of some funds for periods ended December 31, 2018 and considered information provided by Putnam Management regarding the factors contributing to the underperformance and actions being taken to improve the performance of these particular funds. The Trustees indicated their intention to continue to monitor closely the performance of those funds, including the effectiveness of any efforts Putnam Management has undertaken to address underperformance and whether additional actions to address areas of underperformance are warranted.

For purposes of the Trustees' evaluation of the Putnam Funds' investment performance, the Trustees generally focus on a competitive industry ranking of each fund's total net return over a one-year, three-year and five-year period. For a number of Putnam funds with relatively unique investment mandates for which Putnam Management informed the Trustees that meaningful competitive performance rankings are not considered to be available, the Trustees evaluated performance based on their total gross and net returns and comparisons of those returns with the returns of selected investment benchmarks. In the case of your fund, the Trustees considered that its class IA share cumulative total return performance at net asset value was in the following quartiles of its Lipper peer group (Lipper VP (Underlying Funds) — Money Market Funds) for

the one-year, three-year and five-year periods ended December 31, 2018 (the first quartile representing the best-performing funds and the fourth quartile the worst-performing funds):

One-year period	Three-year period	Five-year period
2nd	2nd	2nd

Over the one-year, three-year and five-year periods ended December 31, 2018, there were 63, 61 and 61 funds, respectively, in your fund’s Lipper peer group. (When considering performance information, shareholders should be mindful that past performance is not a guarantee of future results.)

The Trustees considered Putnam Management’s continued efforts to support fund performance through initiatives including structuring compensation for portfolio managers and research analysts to enhance accountability for fund performance, emphasizing accountability in the portfolio management process, and affirming its commitment to a fundamental-driven approach to investing. The Trustees noted further that Putnam Management had made selective hires in 2018 to strengthen its investment team.

Brokerage and soft-dollar allocations; investor servicing

The Trustees considered various potential benefits that Putnam Management may receive in connection with the services it provides under the management contract with your fund. These include benefits related to brokerage allocation and the use of soft dollars, whereby a portion of the commissions paid by a fund for brokerage may be used to acquire research services that are expected to be useful to Putnam Management in managing the assets of the fund and of other clients. Subject to

policies established by the Trustees, soft dollars generated by these means are used predominantly to acquire brokerage and research services (including third-party research and market data) that enhance Putnam Management’s investment capabilities and supplement Putnam Management’s internal research efforts. However, the Trustees noted that a portion of available soft dollars continues to be used to pay fund expenses. The Trustees indicated their continued intent to monitor regulatory and industry developments in this area with the assistance of their Brokerage Committee. The Trustees also indicated their continued intent to monitor the allocation of the Putnam funds’ brokerage in order to ensure that the principle of seeking best price and execution remains paramount in the portfolio trading process.

Putnam Management may also receive benefits from payments that the funds make to Putnam Management’s affiliates for investor or distribution services. In conjunction with the annual review of your fund’s management and sub-management contracts, the Trustees reviewed your fund’s investor servicing agreement with PSERV and its distributor’s contracts and distribution plans with Putnam Retail Management Limited Partnership (“PRM”), both of which are affiliates of Putnam Management. The Trustees concluded that the fees payable by the funds to PSERV and PRM, as applicable, for such services are fair and reasonable in relation to the nature and quality of such services, the fees paid by competitive funds, and the costs incurred by PSERV and PRM, as applicable, in providing such services. Furthermore, the Trustees were of the view that the services provided were required for the operation of the funds, and that they were of a quality at least equal to those provided by other providers.

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, 2019, 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-Advisor

Putnam Investments Limited
16 St James's Street
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Marketing Services

Putnam Retail Management
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Investor Servicing Agent

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Custodian

State Street Bank and Trust Company

Legal Counsel

Ropes & Gray LLP

Trustees

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

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