

# Putnam Variable Trust

## Putnam VT Mortgage Securities 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 9, 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

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*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:** Funds that invest in government securities are not guaranteed. Mortgage- and asset-backed securities are subject to prepayment risk, which means that they may increase in value less than other bonds when interest rates decline and decline in value more than other bonds when interest rates rise. The fund may have to invest the proceeds from prepaid investments, including mortgage- and asset-backed investments, in other investments with less attractive terms and yields. The fund's investments in mortgage-backed securities and asset-backed securities, and in certain other securities and derivatives, may be or become illiquid. The fund's exposure to privately issued mortgage-backed securities and mortgage-backed securities issued or guaranteed by the U.S. government or its agencies or instrumentalities may make the fund's net asset value more susceptible to economic, market, political and other developments affecting the housing or real estate markets. Bond investments are subject to interest-rate risk (the risk of bond prices falling if interest rates rise) and credit risk (the risk of an issuer defaulting on interest or principal payments). Interest-rate risk is generally greater for longer-term bonds, and credit risk is generally greater for below-investment-grade bonds. Default risk is generally higher for non-qualified mortgages. Risks associated with derivatives include increased investment exposure (which may be considered leverage) and, in the case of over-the-counter instruments, the potential inability to terminate or sell derivatives positions and the potential failure of the other party to the instrument to meet its obligations. Unlike bonds, funds that invest in bonds have fees and expenses. 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 (such as a region of the United States), industry, or sector, such as the housing or real estate markets. These and other factors may lead to increased volatility and reduced liquidity in the fund's portfolio holdings or in relevant markets. You can lose money by investing in the fund.

## Performance summary (as of 6/30/19)

### Investment objective

As high a level of current income as Putnam Investment Management, LLC, believes is consistent with preservation of capital

### Net asset value June 30, 2019

Class IA: \$9.64

Class IB: \$9.62

### Total return at net asset value

(as of 6/30/19)	Class IA shares*	Class IB shares*	Bloomberg Barclays U.S. MBS Index	Bloomberg Barclays Government Bond-Bloomberg Barclays U.S. MBS Linked Benchmark <sup>†</sup>
6 months	7.34%	7.18%	4.17%	4.17%
1 year	6.53	6.14	6.22	6.22
5 years	10.11	8.67	13.46	11.73
Annualized	1.95	1.68	2.56	2.24
10 years	43.10	39.36	37.48	32.44
Annualized	3.65	3.37	3.23	2.85
Life	150.15	138.52	151.98	138.22
Annualized	4.84	4.58	4.87	4.57

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

\*Class inception date: February 1, 2000.

Before April 30, 2018, the fund was managed with a materially different investment strategy and may have achieved materially different performance results under its current investment strategy from that shown for periods before this date.

†The Bloomberg Barclays Government Bond-Bloomberg Barclays U.S. MBS Linked Benchmark represents performance of the Bloomberg Barclays Government Bond Index from inception date of the fund, February 1, 2000, through April 29, 2018, and performance of the Bloomberg Barclays U.S. MBS Index from April 30, 2018 through the current period.

The Bloomberg Barclays U.S. MBS Index is an unmanaged index of agency mortgage-backed pass-through securities (both fixed rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

The Bloomberg Barclays Government Bond Index is an unmanaged index of U.S. Treasury and agency securities.

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

### Portfolio composition

Agency pass-through	82.2%
Commercial MBS	42.6%
Agency collateralized mortgage obligations	40.0%
Non-agency residential MBS	19.3%
Asset-backed securities	1.5%
Cash and net other assets	9.9%

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, and rounding. Allocations may not total 100% because the table includes the notional value of certain derivatives (the economic value for purposes of calculating periodic payment obligations), in addition to the market value of securities. Holdings and allocations may vary over time.

### Credit quality

A-1+	3.8%
A-1	7.7%
AAA	112.4%
AA	8.3%
A	1.5%
BBB	7.2%
BB	3.9%
B	5.6%
CCC and below	3.0%
Not rated	-53.4%

Credit qualities are shown as a percentage of net assets. A bond rated BBB or higher (A-3 or higher, for short-term debt) is considered investment grade. This chart reflects the highest security rating provided by one or more of Standard & Poor's, Moody's, and Fitch. To-be-announced (TBA) mortgage commitments, if any, are included based on their issuer ratings. Ratings may vary over time.

Cash, derivative instruments, and net other assets are shown in the not-rated category. Payables and receivables for TBA mortgage commitments are included in the not-rated category and may result in negative weights. The fund itself has not been rated by an independent rating agency.

## 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. In the most recent six-month period, your fund's expenses were limited; had expenses not been limited, they would have been higher. 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
Net expenses for the fiscal year ended 12/31/18*†	0.50%	0.75%
Total annual operating expenses for the fiscal year ended 12/31/18†	0.73%	0.98%
Annualized expense ratio for the six-month period ended 6/30/19	0.50%	0.75%

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 4/30/20.

†Restated to reflect current fees.

### 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*†	\$2.57	\$3.85	\$2.51	\$3.76
Ending value (after expenses)	\$1,073.40	\$1,071.80	\$1,022.32	\$1,021.08

\*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 **Michael V. Salm** is Co-Head of Fixed Income. He joined Putnam in 1997 and has been in the investment industry since 1989.

Brett S. Kozlowski, CFA, and Jatin Misra, Ph.D., CFA, 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.

## ABOUT DERIVATIVES

Derivatives are an increasingly common type of investment instrument, the performance of which is *derived* from an underlying security, index, currency, or other area of the capital markets. Derivatives employed by the fund's managers generally serve one of two main purposes: to implement a strategy that may be difficult or more expensive to invest in through traditional securities, or to hedge unwanted risk associated with a particular position.

For example, the fund's managers might use currency forward contracts to capitalize on an anticipated change in exchange rates between two currencies. This approach would require a significantly smaller outlay of capital than purchasing traditional bonds denominated in the underlying currencies. In another example, the managers may identify a bond that they believe is undervalued relative to its risk of default, but may seek to reduce the interest-rate risk of that bond by using interest-rate swaps, a derivative through which two parties "swap" payments based on the movement of certain rates. In other examples, the managers may use options and futures contracts to hedge against a variety of risks by establishing a combination of long and short exposures to specific equity markets or sectors.

Like any other investment, derivatives may not appreciate in value and may lose money. Derivatives may amplify traditional investment risks through the creation of leverage and may be less liquid than traditional securities. And because derivatives typically represent contractual agreements between two financial institutions, derivatives entail "counterparty risk," which is the risk that the other party is unable or unwilling to pay. Putnam monitors the counterparty risks we assume. For example, Putnam often enters into collateral agreements that require the counterparties to post collateral on a regular basis to cover their obligations to the fund. Counterparty risk for exchange-traded futures and centrally cleared swaps is mitigated by the daily exchange of margin and other safeguards against default through their respective clearinghouses.

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

### U.S. GOVERNMENT AND AGENCY

#### MORTGAGE OBLIGATIONS (120.5%)\*

#### U.S. Government Guaranteed Mortgage Obligations (42.9%)

	Principal amount	Value
Government National Mortgage Association		
Pass-Through Certificates		
6.50%, with due dates from 4/15/28 to 7/20/36	\$35,605	\$40,907
6.00%, with due dates from 4/15/28 to 11/20/38	91,919	104,268
5.50%, 4/20/38	134,265	150,473
5.00%, TBA, 7/1/49	1,000,000	1,045,313
5.00%, 6/20/49	25,000	26,151
4.70%, 8/20/67	108,555	121,039
4.50%, TBA, 7/1/49	3,000,000	3,127,266
4.50%, with due dates from 2/20/34 to 5/20/48	1,599,012	1,700,329
4.00%, TBA, 7/1/49	3,000,000	3,110,156
4.00%, with due dates from 4/20/45 to 10/20/45	2,760,142	2,890,453
3.50%, TBA, 7/1/49	5,000,000	5,164,844
3.50%, with due dates from 1/20/45 to 5/20/45	1,662,857	1,722,152
3.00%, TBA, 7/1/49	5,000,000	5,108,594

24,311,945

#### U.S. Government Agency Mortgage Obligations (77.6%)

Federal Home Loan Mortgage Corporation		
Pass-Through Certificates		
7.50%, with due dates from 9/1/30 to 7/1/31	11,730	13,532
7.00%, with due dates from 11/1/26 to 4/1/32	105,989	121,297
5.50%, 12/1/33	15,984	17,731
4.50%, with due dates from 7/1/44 to 8/1/44	154,325	164,827
4.00%, with due dates from 12/1/44 to 9/1/45	927,591	973,231

Federal National Mortgage Association		
Pass-Through Certificates		
7.50%, with due dates from 9/1/30 to 11/1/30	9,176	10,492
7.00%, with due dates from 12/1/28 to 12/1/35	361,158	411,346
6.50%, 9/1/36	7,413	8,554
6.00%, 1/1/38	99,863	114,975
5.50%, 1/1/38	412,092	456,850
5.00%, 2/1/39	10,135	11,013
4.50%, with due dates from 7/1/44 to 5/1/45	220,121	234,470
4.00%, 3/1/46	305,542	323,161
3.50%, with due dates from 6/1/56 to 1/1/57	1,550,698	1,606,929
3.50%, with due dates from 5/1/45 to 1/1/47	1,980,350	2,050,409

Uniform Mortgage Backed Securities		
4.50%, TBA, 7/1/49	1,000,000	1,044,922
4.00%, TBA, 7/1/49	1,000,000	1,033,516
3.50%, TBA, 7/1/49	3,000,000	3,067,266
3.00%, TBA, 8/1/49	15,000,000	15,115,430
3.00%, TBA, 7/1/49	15,000,000	15,127,734
2.50%, TBA, 8/1/49	1,000,000	991,719
2.50%, TBA, 7/1/49	1,000,000	993,125

43,892,529

**Total U.S. government and agency mortgage obligations (cost \$68,157,457) \$68,204,474**

#### U.S. TREASURY OBLIGATIONS (0.4%)\*

	Principal amount	Value
U.S. Treasury Notes 2.125%, 2/29/24 <sup>i</sup>	\$240,000	\$245,674

**Total U.S. treasury obligations (cost \$245,674) \$245,674**

#### MORTGAGE-BACKED SECURITIES (64.6%)\*

#### Agency collateralized mortgage obligations (38.9%)

Federal Home Loan Mortgage Corporation		
IFB Ser. 3408, Class EK, ((-4.024 x 1 Month US LIBOR) + 25.79%), 16.159%, 4/15/37	\$23,963	\$38,144

#### MORTGAGE-BACKED

#### SECURITIES (64.6%)\* cont.

	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Federal Home Loan Mortgage Corporation		
IFB Ser. 3072, Class SM, ((-3.667 x 1 Month US LIBOR) + 23.80%), 15.018%, 11/15/35	\$33,808	\$52,200
IFB Ser. 3065, Class DC, ((-3 x 1 Month US LIBOR) + 19.86%), 12.677%, 3/15/35	166,250	217,986
IFB Ser. 2990, Class LB, ((-2.556 x 1 Month US LIBOR) + 16.95%), 10.826%, 6/15/34	26,327	30,781
Structured Agency Credit Risk Debt FRN Ser. 14-HQ3, Class M3, (1 Month US LIBOR + 4.75%), 7.154%, 10/25/24	278,428	302,299
Structured Agency Credit Risk Debt Notes FRB Ser. 14-DN4, Class M3, (1 Month US LIBOR + 4.55%), 6.954%, 10/25/24	170,310	183,231
Ser. 4122, Class TI, IO, 4.50%, 10/15/42	255,488	43,691
Ser. 4018, Class DI, IO, 4.50%, 7/15/41	317,805	35,758
Ser. 4546, Class PI, IO, 4.00%, 12/15/45	526,805	83,991
Ser. 4530, Class HI, IO, 4.00%, 11/15/45	320,243	48,633
Ser. 4500, Class GI, IO, 4.00%, 8/15/45	439,774	71,991
Ser. 4425, IO, 4.00%, 1/15/45	441,427	67,574
Ser. 4425, Class EI, IO, 4.00%, 1/15/45	636,069	97,140
Ser. 4452, Class QI, IO, 4.00%, 11/15/44	383,983	78,781
Ser. 4213, Class GI, IO, 4.00%, 11/15/41	904,666	84,560
Ser. 4019, Class JI, IO, 4.00%, 5/15/41	456,935	49,911
Ser. 3996, Class IK, IO, 4.00%, 3/15/39	345,855	14,043
IFB Ser. 4136, Class ES, IO, ((-1 x 1 Month US LIBOR) + 6.25%), 3.856%, 11/15/42	301,565	29,607
IFB Ser. 4436, Class SC, IO, ((-1 x 1 Month US LIBOR) + 6.15%), 3.756%, 2/15/45	923,513	157,600
Ser. 4621, Class QI, IO, 3.50%, 10/15/46	821,005	110,089
Ser. 4165, Class AI, IO, 3.50%, 2/15/43	353,198	51,440
Ser. 4136, Class IQ, IO, 3.50%, 11/15/42	526,650	59,307
Ser. 4199, Class CI, IO, 3.50%, 12/15/37	226,092	8,055
Ser. 304, Class C37, IO, 3.50%, 12/15/27	265,478	20,797
Ser. 4150, Class DI, IO, 3.00%, 1/15/43	435,657	47,105
Ser. 4141, Class PI, IO, 3.00%, 12/15/42	393,510	36,980
Ser. 4158, Class TI, IO, 3.00%, 12/15/42	936,484	80,079
Ser. 4165, Class TI, IO, 3.00%, 12/15/42	970,098	76,779
Ser. 4171, Class NI, IO, 3.00%, 6/15/42	594,414	48,965
Ser. 4183, Class MI, IO, 3.00%, 2/15/42	310,217	22,491
Ser. 4201, Class JI, IO, 3.00%, 12/15/41	446,755	28,734
Ser. 315, PO, zero %, 9/15/43	889,136	758,313
Ser. 3835, Class FO, PO, zero %, 4/15/41	495,077	440,516
Ser. 3391, PO, zero %, 4/15/37	5,742	5,033
Ser. 3300, PO, zero %, 2/15/37	2,670	2,338
Ser. 3326, Class WF, zero %, 10/15/35 <sup>W</sup>	1,163	937

Federal Home Loan Mortgage Corporation Structured Agency Credit risk Debt FRN Ser. 15-HQ1, Class M3, (1 Month US LIBOR + 3.80%), 6.204%, 3/25/25		
	225,232	233,435

Federal National Mortgage Association		
IFB Ser. 06-62, Class PS, ((-6 x 1 Month US LIBOR) + 39.90%), 25.474%, 7/25/36	18,715	32,585
IFB Ser. 06-8, Class HP, ((-3.667 x 1 Month US LIBOR) + 24.57%), 15.751%, 3/25/36	32,702	52,645
IFB Ser. 07-53, Class SP, ((-3.667 x 1 Month US LIBOR) + 24.20%), 15.384%, 6/25/37	37,891	57,748
IFB Ser. 05-122, Class SE, ((-3.5 x 1 Month US LIBOR) + 23.10%), 14.685%, 11/25/35	33,222	44,491
IFB Ser. 08-24, Class SP, ((-3.667 x 1 Month US LIBOR) + 23.28%), 14.467%, 2/25/38	135,762	177,176
IFB Ser. 05-75, Class GS, ((-3 x 1 Month US LIBOR) + 20.25%), 13.037%, 8/25/35	24,370	32,100

**MORTGAGE-BACKED  
SECURITIES (64.6%)\* cont.**

	Principal amount	Value
<b>Agency collateralized mortgage obligations cont.</b>		
Federal National Mortgage Association		
IFB Ser. 05-106, Class JC, ((-3.101 x 1 Month US LIBOR) + 20.12%), 12.669%, 12/25/35	\$37,562	\$49,796
IFB Ser. 05-83, Class QP, ((-2.6 x 1 Month US LIBOR) + 17.39%), 11.143%, 11/25/34	11,860	13,891
Connecticut Avenue Securities FRB Ser. 16-C02, Class 1M2, (1 Month US LIBOR + 6.00%), 8.404%, 9/25/28	132,767	146,832
IFB Ser. 11-4, Class CS, ((-2 x 1 Month US LIBOR) + 12.90%), 8.091%, 5/25/40	78,683	92,452
Ser. 15-58, Class KI, IO, 6.00%, 3/25/37	707,373	160,699
Ser. 16-3, Class MI, IO, 5.50%, 2/25/46	463,797	91,247
Ser. 15-86, Class MI, IO, 5.50%, 11/25/45	602,203	124,975
Ser. 10-109, Class IM, IO, 5.50%, 9/25/40	1,336,561	213,551
Ser. 18-51, Class BI, IO, 5.50%, 7/25/38	983,824	154,297
Ser. 17-19, Class IH, IO, 5.00%, 3/25/47	726,817	142,892
Ser. 12-151, Class IM, IO, 5.00%, 4/25/42	1,137,411	179,106
IFB Ser. 11-123, Class KS, IO, ((-1 x 1 Month US LIBOR) + 6.60%), 4.196%, 10/25/41	94,549	13,785
Ser. 15-83, IO, 4.00%, 10/25/43	948,465	138,713
Ser. 12-118, Class PI, IO, 4.00%, 6/25/42	758,879	112,905
Ser. 12-62, Class MI, IO, 4.00%, 3/25/41	261,847	20,259
Ser. 12-104, Class HI, IO, 4.00%, 9/25/27	491,732	45,312
IFB Ser. 18-47, Class SA, IO, ((-1 x 1 Month US LIBOR) + 6.25%), 3.846%, 7/25/48	638,948	107,541
IFB Ser. 18-36, Class SD, IO, ((-1 x 1 Month US LIBOR) + 6.25%), 3.846%, 6/25/48	1,820,897	305,240
IFB Ser. 16-83, Class BS, IO, ((-1 x 1 Month US LIBOR) + 6.10%), 3.696%, 11/25/46	1,966,806	347,053
IFB Ser. 16-85, Class SL, IO, ((-1 x 1 Month US LIBOR) + 6.10%), 3.696%, 11/25/46	2,936,655	453,299
IFB Ser. 16-50, Class SM, IO, ((-1 x 1 Month US LIBOR) + 6.10%), 3.696%, 8/25/46	1,337,708	191,938
Ser. 16-70, Class QI, IO, 3.50%, 10/25/46	2,253,086	310,813
Ser. 15-10, Class AI, IO, 3.50%, 8/25/43	638,330	80,306
Ser. 12-124, Class JI, IO, 3.50%, 11/25/42	200,708	20,368
Ser. 13-22, Class PI, IO, 3.50%, 10/25/42	569,834	91,018
Ser. 12-114, Class NI, IO, 3.50%, 10/25/41	848,557	112,334
Ser. 13-55, Class IK, IO, 3.00%, 4/25/43	328,752	28,762
Ser. 13-6, Class JI, IO, 3.00%, 2/25/43	721,636	66,300
Ser. 12-151, Class PI, IO, 3.00%, 1/25/43	306,207	27,335
Ser. 12-145, Class TI, IO, 3.00%, 11/25/42	236,981	12,246
Ser. 13-35, Class IP, IO, 3.00%, 6/25/42	323,927	17,655
Ser. 13-55, Class PI, IO, 3.00%, 5/25/42	477,060	27,186
Ser. 13-53, Class JI, IO, 3.00%, 12/25/41	394,991	28,917
Ser. 13-23, Class PI, IO, 3.00%, 10/25/41	296,998	11,010
Ser. 13-30, Class IP, IO, 3.00%, 10/25/41	441,399	17,041
Ser. 13-23, Class LI, IO, 3.00%, 6/25/41	269,279	11,040
Ser. 14-28, Class AI, IO, 3.00%, 3/25/40	474,132	32,400
FRB Ser. 03-W8, Class 3F2, (1 Month US LIBOR + 0.35%), 2.754%, 5/25/42	3,317	3,334
FRB Ser. 07-95, Class A3, (1 Month US LIBOR + 0.25%), 2.68%, 8/27/36	1,868,618	1,796,592
Ser. 08-53, Class DO, PO, zero %, 7/25/38	33,170	30,731
Ser. 07-44, Class CO, PO, zero %, 5/25/37	10,974	9,378
Ser. 17-66, IO, 4.50%, 9/25/47	1,265,438	229,568
IFB Ser. 18-20, Class SB, IO, ((-1 x 1 Month US LIBOR) + 0.00%), 3.846%, 3/25/48	952,933	170,480
IFB Ser. 16-81, Class SA, IO, ((-1 x 1 Month US LIBOR) + 6.15%), 3.746%, 11/25/46	2,768,233	486,794

**MORTGAGE-BACKED  
SECURITIES (64.6%)\* cont.**

	Principal amount	Value
<b>Agency collateralized mortgage obligations cont.</b>		
Government National Mortgage Association		
Ser. 16-75, Class LI, IO, 6.00%, 1/20/40	\$413,019	\$90,348
Ser. 14-137, Class ID, IO, 5.50%, 9/16/44	484,161	98,352
Ser. 15-89, Class LI, IO, 5.00%, 12/20/44	785,271	164,169
Ser. 14-133, Class IP, IO, 5.00%, 9/16/44	339,247	66,774
Ser. 14-76, IO, 5.00%, 5/20/44	430,037	86,870
Ser. 13-51, Class QI, IO, 5.00%, 2/20/43	317,162	53,601
Ser. 13-3, Class IT, IO, 5.00%, 1/20/43	185,883	39,462
Ser. 13-6, Class OI, IO, 5.00%, 1/20/43	139,264	29,038
Ser. 10-35, Class UI, IO, 5.00%, 3/20/40	205,429	42,599
Ser. 10-9, Class UI, IO, 5.00%, 1/20/40	650,676	138,078
Ser. 09-121, Class UI, IO, 5.00%, 12/20/39	507,995	105,211
Ser. 18-1, IO, 4.50%, 1/20/48	807,930	157,678
Ser. 18-127, Class IB, IO, 4.50%, 6/20/45	180,261	18,913
Ser. 13-34, Class HI, IO, 4.50%, 3/20/43	488,313	93,349
Ser. 12-129, IO, 4.50%, 11/16/42	389,909	83,986
Ser. 12-91, Class IN, IO, 4.50%, 5/20/42	693,637	137,303
Ser. 10-35, Class AI, IO, 4.50%, 3/20/40	476,428	83,107
Ser. 10-35, Class DI, IO, 4.50%, 3/20/40	284,769	53,391
Ser. 10-35, Class QI, IO, 4.50%, 3/20/40	169,054	31,323
Ser. 10-9, Class QI, IO, 4.50%, 1/20/40	139,368	26,513
Ser. 09-121, Class BI, IO, 4.50%, 12/16/39	151,300	33,702
Ser. 09-121, Class CI, IO, 4.50%, 12/16/39	586,852	122,025
IFB Ser. 13-182, Class SP, IO, ((-1 x 1 Month US LIBOR) + 6.70%), 4.317%, 12/20/43	342,923	68,351
IFB Ser. 11-81, Class SB, IO, ((-1 x 1 Month US LIBOR) + 6.71%), 4.311%, 11/16/36	130,761	4,276
IFB Ser. 11-156, Class SK, IO, ((-1 x 1 Month US LIBOR) + 6.60%), 4.217%, 4/20/38	875,161	183,784
Ser. 16-69, IO, 4.00%, 5/20/46	753,852	115,015
Ser. 15-53, Class MI, IO, 4.00%, 4/16/45	431,971	84,797
Ser. 14-100, Class NI, IO, 4.00%, 6/20/43	756,003	73,246
Ser. 13-67, Class IP, IO, 4.00%, 4/16/43	649,448	131,896
Ser. 13-165, Class IL, IO, 4.00%, 3/20/43	160,959	26,795
Ser. 12-56, Class IB, IO, 4.00%, 4/20/42	447,391	81,062
Ser. 12-38, Class MI, IO, 4.00%, 3/20/42	1,620,449	310,608
Ser. 12-47, Class CI, IO, 4.00%, 3/20/42	199,148	34,829
Ser. 14-104, IO, 4.00%, 3/20/42	466,742	71,799
Ser. 14-4, Class IK, IO, 4.00%, 7/20/39	199,796	12,577
Ser. 11-71, Class IK, IO, 4.00%, 4/16/39	239,273	14,233
Ser. 10-114, Class MI, IO, 4.00%, 3/20/39	225,672	9,775
Ser. 14-182, Class BI, IO, 4.00%, 1/20/39	634,563	69,463
IFB Ser. 18-89, Class LS, IO, ((-1 x 1 Month US LIBOR) + 6.20%), 3.817%, 6/20/48	839,587	114,394
IFB Ser. 13-87, Class SA, IO, ((-1 x 1 Month US LIBOR) + 6.20%), 3.817%, 6/20/43	1,646,603	288,831
IFB Ser. 19-35, Class SE, IO, ((-1 x 1 Month US LIBOR) + 6.15%), 3.756%, 1/16/44	784,387	126,988
Ser. 16-156, Class PI, IO, 3.50%, 11/20/46	572,233	37,734
Ser. 18-127, Class IE, IO, 3.50%, 1/20/46	652,439	74,476
Ser. 13-79, Class PI, IO, 3.50%, 4/20/43	393,676	48,450
Ser. 15-168, Class IG, IO, 3.50%, 3/20/43	551,382	67,489
Ser. 13-37, Class JI, IO, 3.50%, 1/20/43	252,938	33,360
Ser. 13-27, Class PI, IO, 3.50%, 12/20/42	211,499	27,159
Ser. 12-136, IO, 3.50%, 11/20/42	540,702	94,237
Ser. 18-127, Class IA, IO, 3.50%, 4/20/42	1,243,652	100,674
Ser. 14-102, Class IG, IO, 3.50%, 3/16/41	181,814	14,896
Ser. 15-52, Class KI, IO, 3.50%, 11/20/40	579,169	61,718
Ser. 15-99, Class TI, IO, 3.50%, 4/20/39	521,831	29,804
Ser. 15-24, Class AI, IO, 3.50%, 12/20/37	545,701	39,841
Ser. 14-160, Class IB, IO, 3.00%, 11/20/40	756,854	39,553

<b>MORTGAGE-BACKED SECURITIES (64.6%)* cont.</b>	<b>Principal amount</b>	<b>Value</b>
<b>Agency collateralized mortgage obligations cont.</b>		
Government National Mortgage Association		
Ser. 14-141, Class CI, IO, 3.00%, 3/20/40	\$231,933	\$13,568
Ser. 14-174, Class AI, IO, 3.00%, 11/16/29	489,244	43,995
Ser. 16-H13, Class IK, IO, 2.611%, 6/20/66 <b>W</b>	1,257,245	158,727
Ser. 15-H22, Class GI, IO, 2.575%, 9/20/65 <b>W</b>	1,359,211	160,387
Ser. 17-H03, Class KI, IO, 2.543%, 1/20/67 <b>W</b>	1,509,114	197,001
Ser. 17-H04, Class BI, IO, 2.541%, 2/20/67 <b>W</b>	968,067	129,479
Ser. 17-H08, Class EI, IO, 2.428%, 2/20/67 <b>W</b>	1,268,959	163,379
Ser. 17-H08, Class GI, IO, 2.425%, 2/20/67 <b>W</b>	987,421	145,645
Ser. 16-H04, Class HI, IO, 2.375%, 7/20/65 <b>W</b>	859,397	74,510
Ser. 16-H18, Class QI, IO, 2.374%, 6/20/66 <b>W</b>	1,306,393	155,294
Ser. 16-H24, Class KI, IO, 2.365%, 11/20/66 <b>W</b>	764,626	99,401
Ser. 18-H02, IO, 2.361%, 1/20/68 <b>W</b>	440,310	56,336
Ser. 18-H02, Class IM, IO, 2.341%, 2/20/68 <b>W</b>	821,998	121,245
Ser. 16-H27, Class GI, IO, 2.313%, 12/20/66 <b>W</b>	1,521,127	194,931
Ser. 17-H06, Class MI, IO, 2.304%, 2/20/67 <b>W</b>	1,674,420	188,389
Ser. 17-H14, Class LI, IO, 2.294%, 6/20/67 <b>W</b>	829,188	100,539
Ser. 18-H05, Class ID, IO, 2.284%, 3/20/68 <b>W</b>	568,990	76,814
Ser. 16-H07, Class PI, IO, 2.279%, 3/20/66 <b>W</b>	2,426,286	282,056
Ser. 16-H23, Class NI, IO, 2.254%, 10/20/66 <b>W</b>	1,893,923	213,445
Ser. 18-H01, Class XI, IO, 2.248%, 1/20/68 <b>W</b>	1,229,094	190,510
Ser. 17-H08, Class NI, IO, 2.23%, 3/20/67 <b>W</b>	1,000,424	110,847
Ser. 17-H25, Class AI, IO, 2.223%, 12/20/67 <b>W</b>	551,711	65,516
Ser. 17-H25, Class CI, IO, 2.215%, 12/20/67 <b>W</b>	1,679,845	247,777
Ser. 17-H14, Class JI, IO, 2.21%, 6/20/67 <b>W</b>	564,261	82,523
Ser. 17-H03, Class CI, IO, 2.192%, 12/20/66 <b>W</b>	707,163	86,628
Ser. 16-H24, Class JI, IO, 2.19%, 11/20/66 <b>W</b>	606,469	75,051
Ser. 17-H20, Class AI, IO, 2.157%, 10/20/67 <b>W</b>	2,341,652	305,878
Ser. 16-H17, Class DI, IO, 2.126%, 7/20/66 <b>W</b>	1,371,895	135,151
Ser. 16-H03, Class AI, IO, 2.115%, 1/20/66 <b>W</b>	1,486,704	139,379
Ser. 16-H24, IO, 2.106%, 9/20/66 <b>W</b>	929,143	103,367
Ser. 16-H11, Class HI, IO, 2.098%, 1/20/66 <b>W</b>	2,941,811	257,408
Ser. 16-H06, Class HI, IO, 2.076%, 2/20/66	1,135,403	97,553
Ser. 16-H14, Class AI, IO, 2.071%, 6/20/66 <b>W</b>	907,887	94,323
Ser. 15-H10, Class HI, IO, 2.057%, 4/20/65 <b>W</b>	2,253,596	197,866
Ser. 15-H24, Class HI, IO, 2.028%, 9/20/65 <b>W</b>	1,198,493	77,595
FRB Ser. 15-H16, Class XI, IO, 2.008%, 7/20/65 <b>W</b>	821,644	86,108
Ser. 16-H06, Class AI, IO, 1.995%, 2/20/66	780,396	71,391
Ser. 15-H20, Class CI, IO, 1.977%, 8/20/65 <b>W</b>	1,397,592	141,565
Ser. 15-H13, Class AI, IO, 1.931%, 6/20/65 <b>W</b>	1,283,299	123,518
Ser. 15-H23, Class TI, IO, 1.917%, 9/20/65 <b>W</b>	1,041,058	101,815
Ser. 15-H25, Class BI, IO, 1.905%, 10/20/65 <b>W</b>	969,733	88,052
Ser. 17-H09, IO, 1.862%, 4/20/67 <b>W</b>	913,511	88,251
Ser. 17-H10, Class MI, IO, 1.862%, 4/20/67 <b>W</b>	1,098,887	103,515
Ser. 15-H22, Class AI, IO, 1.852%, 9/20/65 <b>W</b>	1,565,926	147,823
Ser. 15-H04, Class AI, IO, 1.85%, 12/20/64 <b>W</b>	1,129,622	93,194
Ser. 16-H04, Class KI, IO, 1.787%, 2/20/66 <b>W</b>	1,605,023	120,377
Ser. 17-H25, IO, 1.776%, 11/20/67 <b>W</b>	981,192	112,530
Ser. 16-H10, Class AI, IO, 1.773%, 4/20/66 <b>W</b>	1,292,898	90,209
Ser. 16-H06, Class DI, IO, 1.712%, 7/20/65	1,370,137	106,941
Ser. 14-H25, Class BI, IO, 1.689%, 12/20/64 <b>W</b>	1,087,635	80,831
Ser. 17-H16, Class HI, IO, 1.673%, 8/20/67 <b>W</b>	891,655	86,936
Ser. 14-H21, Class AI, IO, 1.643%, 10/20/64 <b>W</b>	1,468,162	121,808
Ser. 14-H18, Class CI, IO, 1.598%, 9/20/64 <b>W</b>	999,611	83,907
Ser. 17-H06, Class EI, 1.582%, 2/20/67 <b>W</b>	668,076	46,107
Ser. 16-H08, Class GI, IO, 1.429%, 4/20/66 <b>W</b>	932,041	49,655
FRB Ser. 11-H07, Class FI, IO, 1.242%, 2/20/61 <b>W</b>	3,928,432	115,889
Ser. 10-151, Class KO, PO, zero %, 6/16/37	27,609	23,914
Ser. 06-36, Class OD, PO, zero %, 7/16/36	1,533	1,314

**22,019,515**

<b>MORTGAGE-BACKED SECURITIES (64.6%)* cont.</b>	<b>Principal amount</b>	<b>Value</b>
<b>Commercial mortgage-backed securities (6.4%)</b>		
Bear Stearns Commercial Mortgage Securities Trust		
FRB Ser. 07-T26, Class AJ, 5.566%, 1/12/45 <b>W</b>	\$71,000	\$63,190
Citigroup Commercial Mortgage Trust 144A FRB		
Ser. 15-GC27, Class D, 4.575%, 2/10/48 <b>W</b>	127,000	117,743
COMM Mortgage Trust 144A		
FRB Ser. 14-CR17, Class D, 5.015%, 5/10/47 <b>W</b>	228,000	226,801
FRB Ser. 14-CR17, Class E, 5.015%, 5/10/47 <b>W</b>	124,000	115,320
FRB Ser. 13-CR6, Class D, 4.219%, 3/10/46 <b>W</b>	123,000	122,754
CSAIL Commercial Mortgage Trust FRB Ser. 15-C1, Class C, 4.436%, 4/15/50 <b>W</b>		
	118,000	122,392
GS Mortgage Securities Trust FRB Ser. 14-GC22, Class C, 4.848%, 6/10/47 <b>W</b>		
	85,000	89,158
GS Mortgage Securities Trust 144A FRB		
Ser. 14-GC24, Class D, 4.671%, 9/10/47 <b>W</b>	329,000	296,851
JPMBB Commercial Mortgage Securities Trust 144A		
FRB Ser. C14, Class D, 4.713%, 8/15/46 <b>W</b>	298,000	282,975
FRB Ser. 14-C25, Class D, 4.092%, 11/15/47 <b>W</b>	139,000	121,047
JPMorgan Chase Commercial Mortgage Securities Trust		
Ser. 06-LDP9, Class AMS, 5.337%, 5/15/47	185,276	170,522
FRB Ser. 13-LC11, Class D, 4.307%, 4/15/46 <b>W</b>	119,000	105,812
JPMorgan Chase Commercial Mortgage Securities Trust 144A		
FRB Ser. 11-C3, Class D, 5.852%, 2/15/46 <b>W</b>	245,000	242,363
FRB Ser. 10-C2, Class D, 5.786%, 11/15/43 <b>W</b>	131,000	132,924
ML-CFC Commercial Mortgage Trust FRB Ser. 06-4, Class C, 5.324%, 12/12/49 <b>W</b>		
	140,340	112,272
Morgan Stanley Bank of America Merrill Lynch Trust 144A		
FRB Ser. 14-C15, Class D, 5.075%, 4/15/47 <b>W</b>	180,000	188,247
FRB Ser. 13-C10, Class F, 4.218%, 7/15/46 <b>W</b>	141,000	117,604
Morgan Stanley Capital I Trust 144A FRB		
Ser. 11-C3, Class E, 5.282%, 7/15/49 <b>W</b>	148,000	146,142
UBS Commercial Mortgage Trust 144A		
FRB Ser. 12-C1, Class D, 5.728%, 5/10/45 <b>W</b>	200,000	202,670
FRB Ser. 12-C1, Class E, 5.00%, 5/10/45 <b>W</b>	289,000	266,400
UBS-Barclays Commercial Mortgage Trust 144A FRB		
Ser. 12-C4, Class D, 4.631%, 12/10/45 <b>W</b>	109,000	107,764
WF-RBS Commercial Mortgage Trust 144A FRB		
Ser. 12-C9, Class D, 4.971%, 11/15/45 <b>W</b>	290,000	291,646
<b>Residential mortgage-backed securities (non-agency) (19.3%) 3,642,597</b>		
Arroyo Mortgage Trust 144A Ser. 18-1, Class A3, 4.157%, 4/25/48 <b>W</b>		
	117,099	118,926
Bayview Financial Mortgage Pass-Through Trust		
Ser. 06-C, Class 1A3, 6.028%, 11/28/36	450,000	453,600
Bear Stearns Alt-A Trust FRB Ser. 05-8, Class 21A1, 4.466%, 10/25/35 <b>W</b>		
	228,812	212,786
Bellemeade Re, Ltd. 144A		
FRB Ser. 17-1, Class M2, (1 Month US LIBOR + 3.35%), 5.754%, 10/25/27 (Bermuda)	150,000	156,388
FRB Ser. 18-2A, Class M1C, (1 Month US LIBOR + 1.60%), 4.004%, 8/25/28 (Bermuda)	190,000	190,000
Carrington Mortgage Loan Trust FRB Ser. 06-NC2, Class A4, (1 Month US LIBOR + 0.24%), 2.644%, 6/25/36		
	490,000	463,050
Chevy Chase Funding LLC Mortgage-Backed Certificates 144A FRB Ser. 06-4A, Class A2, (1 Month US LIBOR + 0.18%), 2.584%, 11/25/47		
	294,732	250,201

**MORTGAGE-BACKED SECURITIES (64.6%)\* cont.**

	Principal amount	Value
<b>Residential mortgage-backed securities (non-agency) cont.</b>		
Citigroup Mortgage Loan Trust, Inc.		
Ser. 05-WF2, Class AF6B, 5.55%, 8/25/35	\$169,494	\$172,488
FRB Ser. 07-AR5, Class 1A1A, 4.741%, 4/25/37 <b>W</b>	349,761	354,210
Countrywide Alternative Loan Trust FRB		
Ser. 07-OA6, Class A1A, (1 Month US LIBOR + 0.14%), 2.544%, 6/25/37	66,051	62,669
Countrywide Alternative Loan Trust FRB		
Ser. 06-OA19, Class A1, (1 Month US LIBOR + 0.18%), 2.563%, 2/20/47	314,172	247,119
Countrywide Asset-Backed Certificates FRB		
Ser. 07-10, Class 1A1, (1 Month US LIBOR + 0.18%), 2.584%, 6/25/47	405,172	397,954
Federal Home Loan Mortgage Corporation		
Structured Agency Credit Risk Debt Notes FRB		
Ser. 15-HQA1, Class B, (1 Month US LIBOR + 8.80%), 11.204%, 3/25/28	248,181	304,187
FRB Ser. 16-DNA3, Class M3, (1 Month US LIBOR + 5.00%), 7.404%, 12/25/28	362,000	400,116
Structured Agency Credit Risk Debt FRN		
Ser. 17-DNA2, Class M2, (1 Month US LIBOR + 3.45%), 5.854%, 10/25/29	250,000	266,878
Structured Agency Credit Risk Debt FRN		
Ser. 18-DNA1, Class B1, (1 Month US LIBOR + 3.15%), 5.554%, 7/25/30	250,000	248,965
Structured Agency Credit Risk Debt FRN		
Ser. 17-HQA2, Class M2, (1 Month US LIBOR + 2.65%), 5.054%, 12/25/29	260,000	266,258
Structured Agency Credit Risk Debt FRN		
Ser. 18-HQA1, Class M2, (1 Month US LIBOR + 2.30%), 4.704%, 9/25/30	295,000	294,923
Federal Home Loan Mortgage Corporation 144A		
Structured Agency Credit Risk Debt FRN		
Ser. 19-DNA2, Class B1, (1 Month US LIBOR + 4.35%), 6.754%, 3/25/49	60,000	62,452
Structured Agency Credit Risk Debt FRN		
Ser. 18-DNA2, Class B1, (1 Month US LIBOR + 3.70%), 6.104%, 12/25/30	410,000	418,818
Structured Agency Credit Risk Debt FRN		
Ser. 19-DNA2, Class M2, (1 Month US LIBOR + 2.45%), 4.854%, 3/25/49	257,000	260,516
Seasoned Credit Risk Transfer Trust Ser. 19-2, Class M, 4.75%, 8/25/58 <b>W</b>		
69,000	67,246	
Federal National Mortgage Association		
Connecticut Avenue Securities FRB Ser. 16-C03, Class 1B, (1 Month US LIBOR + 11.75%), 14.154%, 10/25/28		
155,266	221,855	
Connecticut Avenue Securities FRB Ser. 16-C05, Class 2B, (1 Month US LIBOR + 10.75%), 13.154%, 1/25/29		
9,975	13,192	
Connecticut Avenue Securities FRB Ser. 17-C02, Class 2B1, (1 Month US LIBOR + 5.50%), 7.904%, 9/25/29		
44,000	49,514	
Connecticut Avenue Securities FRB Ser. 16-C03, Class 1M2, (1 Month US LIBOR + 5.30%), 7.704%, 10/25/28		
167,000	186,192	
Connecticut Avenue Securities FRB Ser. 16-C05, Class 2M2, (1 Month US LIBOR + 4.45%), 6.854%, 1/25/29		
185,918	198,155	
Connecticut Avenue Securities FRB Ser. 16-C07, Class 2M2, (1 Month US LIBOR + 4.35%), 6.754%, 5/25/29		
19,936	21,264	
Connecticut Avenue Securities FRB Ser. 18-C05, Class 1B1, (1 Month US LIBOR + 4.25%), 6.654%, 1/25/31		
90,000	94,810	

**MORTGAGE-BACKED SECURITIES (64.6%)\* cont.**

	Principal amount	Value
<b>Residential mortgage-backed securities (non-agency) cont.</b>		
Federal National Mortgage Association		
Connecticut Avenue Securities FRB Ser. 16-C06, Class 1M2, (1 Month US LIBOR + 4.25%), 6.654%, 4/25/29		
\$197,000	\$213,181	
Connecticut Avenue Securities FRB Ser. 17-C06, Class 1B1, (1 Month US LIBOR + 4.15%), 6.554%, 2/25/30		
200,000	212,549	
Connecticut Avenue Securities FRB Ser. 17-C07, Class 1B1, (1 Month US LIBOR + 4.00%), 6.404%, 5/28/30		
220,000	233,450	
Connecticut Avenue Securities FRB Ser. 17-C05, Class 1B1, (1 Month US LIBOR + 3.60%), 6.004%, 1/25/30		
418,000	434,841	
Connecticut Avenue Securities FRB Ser. 18-C01, Class 1B1, (1 Month US LIBOR + 3.55%), 5.954%, 7/25/30		
422,000	432,144	
Connecticut Avenue Securities FRB Ser. 17-C01, Class 1M2, (1 Month US LIBOR + 3.55%), 5.954%, 7/25/29		
330,000	348,706	
Connecticut Avenue Securities FRB Ser. 17-C06, Class 1M2, (1 Month US LIBOR + 2.65%), 5.054%, 2/25/30		
290,000	297,136	
Connecticut Avenue Securities FRB Ser. 18-C04, Class 2M2, (1 Month US LIBOR + 2.55%), 4.954%, 12/25/30		
300,000	305,080	
Connecticut Avenue Securities FRB Ser. 18-C05, Class 1M2, (1 Month US LIBOR + 2.35%), 4.754%, 1/25/31		
130,000	131,147	
Connecticut Avenue Securities FRB Ser. 18-C01, Class 1M2, (1 Month US LIBOR + 2.25%), 4.654%, 7/25/30		
25,000	25,195	
Connecticut Avenue Securities FRB Ser. 18-C02, Class 2M2, (1 Month US LIBOR + 2.20%), 4.604%, 8/25/30		
299,000	300,249	
Connecticut Avenue Securities FRB Ser. 18-C03, Class 1M2, (1 Month US LIBOR + 2.15%), 4.554%, 10/25/30		
151,000	152,037	
Federal National Mortgage Association 144A		
Connecticut Avenue Securities Trust FRB Ser. 19-R02, Class 1M2, (1 Month US LIBOR + 2.30%), 4.704%, 8/25/31		
42,000	42,410	
JPMorgan Alternative Loan Trust FRB Ser. 06-A6, Class 1A1, (1 Month US LIBOR + 0.16%), 2.564%, 11/25/36		
143,215	137,706	
Legacy Mortgage Asset Trust 144A FRB Ser. 19-GS2, Class A2, 4.25%, 1/25/59		
100,000	97,420	
Morgan Stanley ABS Capital I, Inc. Trust FRB Ser. 04-HE9, Class M2, (1 Month US LIBOR + 0.93%), 3.334%, 11/25/34		
56,141	55,986	
Morgan Stanley Re-REMIC Trust 144A FRB Ser. 10-R4, Class 4B, (1 Month US LIBOR + 0.23%), 3.246%, 2/26/37		
131,429	117,339	
Oaktown Re, Ltd. 144A FRB Ser. 18-1A, Class M2, (1 Month US LIBOR + 2.85%), 5.254%, 7/25/28 (Bermuda)		
220,000	223,293	
Structured Asset Mortgage Investments II Trust FRB Ser. 06-AR7, Class A1BG, (1 Month US LIBOR + 0.12%), 2.524%, 8/25/36		
57,041	52,524	
WaMu Mortgage Pass-Through Certificates Trust		
FRB Ser. 05-AR14, Class 1A2, 4.181%, 12/25/35 <b>W</b>		
324,397	324,675	
FRB Ser. 05-AR12, Class 1A8, 3.993%, 10/25/35 <b>W</b>		
95,529	95,509	
FRB Ser. 05-AR8, Class 2AC2, (1 Month US LIBOR + 0.92%), 3.324%, 7/25/45		
115,131	113,806	

<b>MORTGAGE-BACKED SECURITIES (64.6%)* cont.</b>	<b>Principal amount</b>	<b>Value</b>
<b>Residential mortgage-backed securities (non-agency) cont.</b>		
Wells Fargo Home Equity Asset-Backed Securities Trust FRB Ser. 07-2, Class A3, (1 Month US LIBOR + 0.23%), 2.634%, 4/25/37	\$96,305	\$93,687
		<b>10,894,802</b>
<b>Total mortgage-backed securities (cost \$36,357,980)</b>		<b>\$36,556,914</b>

<b>PURCHASED SWAP OPTIONS OUTSTANDING(5.4%)* Counterparty</b>	<b>Fixed right % to receive or (pay)/ Floating rate index/Maturity date</b>	<b>Expiration date/strike</b>	<b>Notional/ Contract amount</b>	<b>Value</b>
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<b>Bank of America N.A.</b>				
3.312/3 month USD-LIBOR-BBA/Nov-38		Nov-28/3.312	\$4,197,400	\$405,427
2.785/3 month USD-LIBOR-BBA/Jan-47		Jan-27/2.785	1,166,600	138,720
(3.312)/3 month USD-LIBOR-BBA/Nov-38		Nov-28/3.312	4,197,400	127,139
(2.785)/3 month USD-LIBOR-BBA/Jan-47		Jan-27/2.785	1,166,600	72,049
2.3075/3 month USD-LIBOR-BBA/Jun-52		Jun-22/2.3075	503,600	43,526
(2.3075)/3 month USD-LIBOR-BBA/Jun-52		Jun-22/2.3075	503,600	39,941
(2.401)/3 month USD-LIBOR-BBA/Sep-29		Sep-19/2.401	4,397,100	6,244

<b>Barclays Bank PLC</b>				
1.965/3 month USD-LIBOR-BBA/Jul-29		Jul-19/1.965	3,568,200	20,053

<b>Citibank, N.A.</b>				
(2.193)/3 month USD-LIBOR-BBA/Jul-29		Jul-19/2.193	4,397,100	4,177
(2.463)/3 month USD-LIBOR-BBA/Jul-29		Jul-19/2.463	4,397,100	176

<b>Goldman Sachs International</b>				
2.7475/3 month USD-LIBOR-BBA/Feb-30		Feb-20/2.7475	4,128,600	298,209
(2.983)/3 month USD-LIBOR-BBA/May-52		May-22/2.983	1,045,200	29,245
(2.011)/3 month USD-LIBOR-BBA/Aug-29		Aug-19/2.011	4,397,100	26,075
2.3025/3 month USD-LIBOR-BBA/Jul-49		Jul-19/2.3025	446,000	11,096
(2.7475)/3 month USD-LIBOR-BBA/Feb-30		Feb-20/2.7475	4,128,600	5,904
(2.281)/3 month USD-LIBOR-BBA/Aug-29		Aug-19/2.281	4,397,100	3,254
(2.3025)/3 month USD-LIBOR-BBA/Jul-49		Jul-19/2.3025	446,000	1,811
(2.658)/3 month USD-LIBOR-BBA/Jul-20		Jul-19/2.658	11,945,200	12
(2.458)/3 month USD-LIBOR-BBA/Jul-20		Jul-19/2.458	5,972,600	6

<b>JPMorgan Chase Bank N.A.</b>				
3.162/3 month USD-LIBOR-BBA/Nov-33		Nov-20/3.162	2,042,400	248,703
3.096/3 month USD-LIBOR-BBA/Nov-29		Nov-19/3.096	1,633,900	169,566
(3.162)/3 month USD-LIBOR-BBA/Nov-33		Nov-20/3.162	2,042,400	7,026

<b>PURCHASED SWAP OPTIONS OUTSTANDING(5.4%)* cont. Counterparty</b>	<b>Fixed right % to receive or (pay)/ Floating rate index/Maturity date</b>	<b>Expiration date/strike</b>	<b>Notional/ Contract amount</b>	<b>Value</b>
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<b>JPMorgan Chase Bank N.A. cont.</b>				
(3.096)/3 month USD-LIBOR-BBA/Nov-29		Nov-19/3.096	\$1,633,900	\$163
(3.095)/3 month USD-LIBOR-BBA/Nov-21		Nov-19/3.095	4,084,800	4

<b>Morgan Stanley &amp; Co. International PLC</b>				
2.7725/3 month USD-LIBOR-BBA/Feb-31		Feb-21/2.7725	3,267,200	236,023
2.764/3 month USD-LIBOR-BBA/Feb-31		Feb-21/2.764	3,267,200	234,226
2.8025/3 month USD-LIBOR-BBA/Apr-56		Apr-26/2.8025	1,376,200	229,124
3.00/3 month USD-LIBOR-BBA/Feb-73		Feb-48/3.00	790,100	142,708
3.00/3 month USD-LIBOR-BBA/Apr-72		Apr-47/3.00	790,100	142,092
3.00/3 month USD-LIBOR-BBA/Apr-72		Apr-47/3.00	790,100	142,084
2.75/3 month USD-LIBOR-BBA/May-73		May-48/2.75	790,100	119,084
(2.8025)/3 month USD-LIBOR-BBA/Apr-56		Apr-26/2.8025	1,376,200	99,788
(2.7725)/3 month USD-LIBOR-BBA/Feb-31		Feb-21/2.7725	3,267,200	25,223
(2.764)/3 month USD-LIBOR-BBA/Feb-31		Feb-21/2.764	3,267,200	24,896
(2.265)/3 month USD-LIBOR-BBA/Oct-29		Oct-19/2.265	4,397,100	13,939
(2.904)/3 month USD-LIBOR-BBA/May-51		May-21/2.904	447,900	8,898
(3.0975)/3 month USD-LIBOR-BBA/Nov-21		Nov-19/3.0975	4,084,800	4

**Total purchased swap options outstanding (cost \$2,553,829) \$3,076,615**

<b>PURCHASED OPTIONS OUTSTANDING (0.2%)* Counterparty</b>	<b>Expiration date/strike price</b>	<b>Notional amount</b>	<b>Contract amount</b>	<b>Value</b>
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<b>JPMorgan Chase Bank N.A.</b>				
Uniform Mortgage Backed Securities 30 yr 3.00% TBA commitments (Put)	Aug-19/\$100.89	\$2,000,000	\$2,000,000	\$10,308
Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Call)	Aug-19/102.07	19,000,000	19,000,000	77,843
Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/101.29	2,000,000	2,000,000	24
Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/101.10	2,000,000	2,000,000	6
Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/99.79	2,000,000	2,000,000	2
Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/99.60	2,000,000	2,000,000	2
Uniform Mortgage Backed Securities 30 yr 4.00% TBA commitments (Call)	Aug-19/103.24	5,000,000	5,000,000	12,550
<b>Total purchased options outstanding (cost \$92,813)</b>				<b>\$100,735</b>

ASSET-BACKED SECURITIES (1.5%)*	Principal amount	Value
Mello Warehouse Securitization Trust 144A FRB Ser. 18-W1, Class A, (1 Month US LIBOR + 0.85%), 3.254%, 11/25/51	\$299,000	\$299,000
FRB Ser. 19-1, Class A, (1 Month US LIBOR + 0.80%), 3.204%, 6/25/52	152,000	152,000
Station Place Securitization Trust 144A FRB Ser. 19-3, Class A, (1 Month US LIBOR + 0.70%), 3.13%, 6/24/20	275,000	275,000
FRB Ser. 18-8, Class A, (1 Month US LIBOR + 0.70%), 3.13%, 2/24/20	136,000	136,000
<b>Total asset-backed securities (cost \$862,000)</b>		<b>\$862,000</b>

SHORT-TERM INVESTMENTS (11.7%)*	Principal amount/ shares	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 \$4,350,914 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)	\$4,350,000	\$4,350,000
State Street Institutional U.S. Government MoneyMarket Fund, Premier Class 2.31% <sup>P</sup> Shares	101,000	101,000
U.S. Treasury Bills 2.453%, 7/18/19#	\$1,367,000	1,365,676
U.S. Treasury Bills 2.427%, 8/8/19	54,000	53,883
U.S. Treasury Bills 2.461%, 8/1/19	\$732,000	730,732
<b>Total short-term investments (cost \$6,600,802)</b>		<b>\$6,601,291</b>
<b>Total investments (cost \$114,870,555)</b>		<b>\$115,647,703</b>

#### 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.
IFB	Inverse Floating Rate Bonds, which are securities that pay interest rates that vary inversely to changes in the market interest rates. As interest rates rise, inverse floaters produce less current income. The rate shown is the current interest rate at the close of the reporting period. Rates may be subject to a cap or floor.
IO	Interest Only
PO	Principal Only
TBA	To Be Announced Commitments

#### 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 \$56,618,541.

# 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 \$29,964 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

This security, in part or in entirety, was pledged and segregated with the custodian for collateral on certain derivative contracts at the close of the

reporting period. Collateral at period end totaled \$1,377,769 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

§ This security, in part or in entirety, was pledged and segregated with the custodian for collateral on the initial margin on certain centrally cleared derivative contracts at the close of the reporting period. Collateral at period end totaled \$383,463 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

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

P This security was pledged, or purchased with cash that was pledged, to the fund for collateral on certain derivative contracts and TBA commitments. The rate quoted in the security description is the annualized 7-day yield of the fund at the close of the reporting period.

W The rate shown represents the weighted average coupon associated with the underlying mortgage pools. Rates may be subject to a cap or floor.

At the close of the reporting period, the fund maintained liquid assets totaling \$40,703,849 to cover certain derivative contracts and delayed delivery securities.

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

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

See Note 1 to the financial statements regarding TBA commitments.

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

#### FUTURES

#### CONTRACTS

OUTSTANDING at 6/30/19 (Unaudited)	Number of contracts	Notional amount	Value	Expiration date	Unrealized appreciation/ (depreciation)
Euro-Dollar 90 day (Long)	44	\$44,000,000	\$10,779,450	Sep-19	\$14,281
Euro-Dollar 90 day (Short)	44	44,000,000	10,831,700	Mar-21	(15,645)
U.S. Treasury Bond Ultra 30 yr (Long)	4	710,250	710,250	Sep-19	28,866
U.S. Treasury Note 2yr (Long)	10	2,151,797	2,151,797	Sep-19	13,696
U.S. Treasury Note 5yr (Short)	16	1,890,500	1,890,500	Sep-19	(27,411)
<b>Unrealized appreciation</b>					<b>56,843</b>
<b>Unrealized (depreciation)</b>					<b>(43,056)</b>
<b>Total</b>					<b>\$13,787</b>

#### WRITTEN SWAP OPTIONS OUTSTANDING at 6/30/19 (premiums \$2,102,116) (Unaudited)

Counterparty	Fixed Obligation % to receive or (pay)/ Floating rate index/Maturity date	Expiration date/strike	Notional/ Contract amount	Value
<b>Bank of America N.A.</b>				
2.401/3 month USD-LIBOR-BBA/Jul-29		Jul-19/2.401	\$4,397,100	\$396
3.195/3 month USD-LIBOR-BBA/Nov-55		Nov-25/3.195	1,981,700	92,942
(3.195)/3 month USD-LIBOR-BBA/Nov-55		Nov-25/3.195	1,981,700	436,687
<b>Barclays Bank PLC</b>				
(2.065)/3 month USD-LIBOR-BBA/Jul-29		Jul-19/2.065	1,784,100	20,874

WRITTEN SWAP OPTIONS OUTSTANDING at 6/30/19 (premiums \$2,102,116)

(Unaudited) cont.

Counterparty	Fixed Obligation % to receive or (pay)/ Floating rate index/Maturity date	Expiration date/strike	Notional/ Contract amount	Value
<b>Citibank, N.A.</b>				
	2.373/3 month			
	USD-LIBOR-BBA/Jul-29	Jul-19/2.373	\$4,397,100	\$572
	2.283/3 month			
	USD-LIBOR-BBA/Jul-29	Jul-19/2.283	4,397,100	1,627
<b>Goldman Sachs International</b>				
	2.558/3 month			
	USD-LIBOR-BBA/Jul-20	Jul-19/2.558	17,917,800	18
	2.191/3 month			
	USD-LIBOR-BBA/Aug-29	Aug-19/2.191	4,397,100	6,991
	2.101/3 month			
	USD-LIBOR-BBA/Aug-29	Aug-19/2.101	4,397,100	14,115
	2.823/3 month			
	USD-LIBOR-BBA/May-27	May-22/2.823	4,180,800	27,761
	2.9425/3 month			
	USD-LIBOR-BBA/Feb-34	Feb-24/2.9425	2,064,300	47,561
	(2.9425)/3 month			
	USD-LIBOR-BBA/Feb-34	Feb-24/2.9425	2,064,300	161,944
<b>JPMorgan Chase Bank N.A.</b>				
	3.415/3 month			
	USD-LIBOR-BBA/Nov-21	Nov-19/3.415	8,169,600	8
	2.975/3 month			
	USD-LIBOR-BBA/Nov-23	Nov-20/2.975	2,042,400	1,144
	3.229/3 month			
	USD-LIBOR-BBA/Nov-33	Nov-23/3.229	2,042,400	32,576
	(2.975)/3 month			
	USD-LIBOR-BBA/Nov-23	Nov-20/2.975	2,042,400	78,183
	(3.229)/3 month			
	USD-LIBOR-BBA/Nov-33	Nov-23/3.229	2,042,400	197,949
<b>Morgan Stanley &amp; Co. International PLC</b>				
	3.3975/3 month			
	USD-LIBOR-BBA/Nov-21	Nov-19/3.3975	8,169,600	8
	2.265/3 month			
	USD-LIBOR-BBA/Aug-29	Aug-19/2.265	4,397,100	2,814
	2.7225/3 month			
	USD-LIBOR-BBA/Feb-30	Feb-20/2.7225	2,376,000	3,849
	2.715/3 month			
	USD-LIBOR-BBA/Feb-30	Feb-20/2.715	2,376,000	4,301
	2.664/3 month			
	USD-LIBOR-BBA/May-26	May-21/2.664	1,791,800	7,956
	3.01/3 month			
	USD-LIBOR-BBA/Feb-36	Feb-26/3.01	891,000	26,899
	2.97/3 month			
	USD-LIBOR-BBA/Feb-36	Feb-26/2.97	891,000	27,737
	(2.97)/3 month			
	USD-LIBOR-BBA/Feb-36	Feb-26/2.97	891,000	70,166
	(3.01)/3 month			
	USD-LIBOR-BBA/Feb-36	Feb-26/3.01	891,000	72,028
	(2.75)/3 month			
	USD-LIBOR-BBA/May-49	May-25/2.75	790,100	102,918

WRITTEN SWAP OPTIONS OUTSTANDING at 6/30/19 (premiums \$2,102,116)

(Unaudited) cont.

Counterparty	Fixed Obligation % to receive or (pay)/ Floating rate index/Maturity date	Expiration date/strike	Notional/ Contract amount	Value
<b>Morgan Stanley &amp; Co. International PLC cont.</b>				
	2.7875/3 month			
	USD-LIBOR-BBA/Apr-59	Apr-29/2.7875	\$1,238,600	\$107,634
	(3.00)/3 month			
	USD-LIBOR-BBA/Apr-48	Apr-24/3.00	790,100	123,959
	(3.00)/3 month			
	USD-LIBOR-BBA/Apr-48	Apr-24/3.00	790,100	123,998
	(3.00)/3 month			
	USD-LIBOR-BBA/Jan-49	Jan-25/3.00	790,100	124,954
	(2.715)/3 month			
	USD-LIBOR-BBA/Feb-30	Feb-20/2.715	2,376,000	165,156
	(2.7225)/3 month			
	USD-LIBOR-BBA/Feb-30	Feb-20/2.7225	2,376,000	166,558
	(2.7875)/3 month			
	USD-LIBOR-BBA/Apr-59	Apr-29/2.7875	1,238,600	216,297
<b>Total</b>				<b>\$2,468,580</b>

WRITTEN OPTIONS OUTSTANDING at 6/30/19 (premiums \$86,875) (Unaudited)

Counterparty	Expiration date/strike price	Notional Amount	Contract amount	Value	
<b>JPMorgan Chase Bank N.A.</b>					
	Uniform Mortgage Backed Securities 30 yr 3.00% TBA commitments (Call)	Aug-19/\$100.89	\$2,000,000	\$2,000,000	\$8,126
	Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Aug-19/102.07	19,000,000	19,000,000	46,740
	Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/100.79	2,000,000	2,000,000	2
	Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/100.29	2,000,000	2,000,000	2
	Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/100.60	2,000,000	2,000,000	2
	Uniform Mortgage Backed Securities 30 yr 3.50% TBA commitments (Put)	Jul-19/100.10	2,000,000	2,000,000	2
	Uniform Mortgage Backed Securities 30 yr 4.00% TBA commitments (Put)	Aug-19/103.24	5,000,000	5,000,000	6,315
<b>Total</b>					<b>\$61,189</b>

**FORWARD PREMIUM SWAP OPTION CONTRACTS OUTSTANDING at 6/30/19 (Unaudited)**

Counterparty Fixed right or obligation % to receive or (pay)/ Floating rate index/Maturity date	Expiration date/strike	Contract amount	Premium receivable/ (payable)	Unrealized appreciation/ (depreciation)
<b>Bank of America N.A.</b>				
2.2275/3 month USD-LIBOR-BBA/May-24 (Purchased)	May-22/2.2275	\$4,806,000	\$(44,335)	\$24,463
(2.2275)/3 month USD-LIBOR-BBA/May-24 (Purchased)	May-22/2.2275	4,806,000	(44,335)	(17,974)
<b>Citibank, N.A.</b>				
2.689/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.689	237,000	(30,514)	1,853
1.765/3 month USD-LIBOR-BBA/Jun-25 (Purchased)	Jun-20/1.765	4,505,600	(60,375)	1,667
(1.765)/3 month USD-LIBOR-BBA/Jun-25 (Purchased)	Jun-20/1.765	4,505,600	(60,375)	(3,154)
(2.689)/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.689	237,000	(30,514)	(12,845)
1.746/3 month USD-LIBOR-BBA/Sep-24 (Written)	Sep-19/1.746	4,505,600	32,666	2,523
(1.746)/3 month USD-LIBOR-BBA/Sep-24 (Written)	Sep-19/1.746	4,505,600	32,666	(1,577)
<b>Goldman Sachs International</b>				
2.8175/3 month USD-LIBOR-BBA/Mar-47 (Purchased)	Mar-27/2.8175	233,300	(29,454)	2,522
1.755/3 month USD-LIBOR-BBA/Jun-25 (Purchased)	Jun-20/1.755	4,505,600	(60,600)	451
(1.755)/3 month USD-LIBOR-BBA/Jun-25 (Purchased)	Jun-20/1.755	4,505,600	(60,600)	(2,163)
(2.8175)/3 month USD-LIBOR-BBA/Mar-47 (Purchased)	Mar-27/2.8175	233,300	(29,454)	(11,798)
1.736/3 month USD-LIBOR-BBA/Sep-24 (Written)	Sep-19/1.736	4,505,600	32,666	1,217
(1.736)/3 month USD-LIBOR-BBA/Sep-24 (Written)	Sep-19/1.736	4,505,600	32,666	(721)
<b>JPMorgan Chase Bank N.A.</b>				
2.8325/3 month USD-LIBOR-BBA/Feb-52 (Purchased)	Feb-22/2.8325	1,166,600	(162,887)	24,125
2.50/3 month USD-LIBOR-BBA/Nov-39 (Purchased)	Nov-29/2.50	395,400	(22,854)	4,642
2.902/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.902	237,000	(36,640)	2,036
(2.902)/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.902	237,000	(25,430)	(11,338)
(2.50)/3 month USD-LIBOR-BBA/Nov-39 (Purchased)	Nov-29/2.50	395,400	(41,122)	(12,309)
(2.8325)/3 month USD-LIBOR-BBA/Feb-52 (Purchased)	Feb-22/2.8325	1,166,600	(162,887)	(118,667)
<b>Morgan Stanley &amp; Co. International PLC</b>				
3.27/3 month USD-LIBOR-BBA/Oct-53 (Purchased)	Oct-23/3.27	67,100	(7,656)	8,304
2.505/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.505	237,000	(25,501)	1,969
(3.27)/3 month USD-LIBOR-BBA/Oct-53 (Purchased)	Oct-23/3.27	67,100	(7,656)	(5,226)
(2.505)/3 month USD-LIBOR-BBA/Nov-49 (Purchased)	Nov-24/2.505	237,000	(36,308)	(14,905)
<b>Unrealized appreciation</b>				<b>75,772</b>
<b>Unrealized (depreciation)</b>				<b>(212,677)</b>
<b>Total</b>				<b>\$(136,905)</b>

**TBA SALE COMMITMENTS OUTSTANDING at 6/30/19  
(proceeds receivable \$22,227,403) (Unaudited)**

	Principal amount	Settlement date	Value
Uniform Mortgage Backed Securities, 3.50%, 8/1/49	\$3,000,000	8/13/19	\$3,066,445
Uniform Mortgage Backed Securities, 3.50%, 7/1/49	3,000,000	7/15/19	3,067,266
Uniform Mortgage Backed Securities, 3.00%, 7/1/49	15,000,000	7/15/19	15,127,734
Uniform Mortgage Backed Securities, 2.50%, 7/1/49	1,000,000	7/15/19	993,125
<b>Total</b>			<b>\$22,254,570</b>

**CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited)**

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$508,000	\$125,529	\$(17)	11/8/48	3 month USD-LIBOR-BBA— Quarterly	3.312%— Semiannually	\$126,038
2,042,400	202,531	(29)	1/3/29	3.065%— Semiannually	3 month USD-LIBOR- BBA— Quarterly	(220,406)
1,127,400	113,482	(16)	3/4/29	3 month USD-LIBOR-BBA— Quarterly	3.073%— Semiannually	122,610
6,127,200	22,726	(3,078)	1/22/20	3 month USD-LIBOR-BBA— Quarterly	2.86%— Semiannually	66,610
6,127,200	64,850 <sup>E</sup>	2,918	1/22/21	2.77%— Semiannually	3 month USD-LIBOR- BBA— Quarterly	(61,932)

## CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited) cont.

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$191,900	\$3,040 <sup>E</sup>	\$(1)	2/2/24	3 month USD-LIBOR-BBA — Quarterly	2.5725% — Semiannually	\$3,039
496,600	7,451 <sup>E</sup>	(3)	2/2/24	2.528% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(7,454)
294,100	19,180	(4)	2/13/29	2.6785% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(21,189)
1,039,500	25,955 <sup>E</sup>	(210)	12/2/23	3 month USD-LIBOR-BBA — Quarterly	2.536% — Semiannually	25,745
359,400	5,677 <sup>E</sup>	(61)	2/2/24	3 month USD-LIBOR-BBA — Quarterly	2.57% — Semiannually	5,616
318,200	24,153 <sup>E</sup>	(5)	3/5/30	3 month USD-LIBOR-BBA — Quarterly	2.806% — Semiannually	24,148
835,800	51,230 <sup>E</sup>	(12)	3/16/30	2.647% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(51,241)
271,600	23,637 <sup>E</sup>	(9)	3/28/52	2.67% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(23,646)
825,700	34,942 <sup>E</sup>	(425)	3/26/30	2.44% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(35,367)
647,500	7,021 <sup>E</sup>	(4)	2/2/24	3 month USD-LIBOR-BBA — Quarterly	2.3075% — Semiannually	7,017
950,400	10,486 <sup>E</sup>	(5)	2/9/24	3 month USD-LIBOR-BBA — Quarterly	2.32% — Semiannually	10,480
1,130,900	112,287	(13,609)	6/12/49	3 month USD-LIBOR-BBA — Quarterly	2.647% — Semiannually	98,804
250,500	22,528	(9)	6/12/49	2.6059% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(22,560)
142,100	11,457	(5)	6/12/49	2.565% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(11,471)
204,300	15,146	(7)	6/12/49	2.5365% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(15,164)
199,900	16,299	(7)	6/12/49	3 month USD-LIBOR-BBA — Quarterly	2.569% — Semiannually	16,306
244,300	18,139	(8)	6/12/49	2.537% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(18,160)
226,500	16,637	(8)	6/12/49	2.5335% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(16,656)
186,600	11,773	(6)	6/12/49	2.488% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(11,785)
892,100	34,159	12,236	7/2/49	2.38% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(21,923)
1,784,100	31,811	(12,550)	7/2/49	3 month USD-LIBOR-BBA — Quarterly	2.29% — Semiannually	19,261
76,400	1,533	(3)	6/12/49	2.299% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(1,530)
1,115,200	12,907 <sup>E</sup>	(16)	3/4/30	2.098% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(12,923)
229,300	1,934 <sup>E</sup>	(5)	11/20/39	3 month USD-LIBOR-BBA — Quarterly	2.55% — Semiannually	1,929
705,700	9,902 <sup>E</sup>	(10)	12/7/30	2.184% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(9,912)
1,219,900	17,969 <sup>E</sup>	—	12/14/30	2.1935% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(17,969)
514,200	15,293 <sup>E</sup>	—	6/14/52	2.4105% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(15,293)
87,000	1,059 <sup>E</sup>	(3)	7/17/49	2.263% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(1,062)
120,400	288 <sup>E</sup>	(4)	7/17/49	2.199% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	284
107,000	1,035 <sup>E</sup>	(4)	7/17/49	3 month USD-LIBOR-BBA — Quarterly	2.252% — Semiannually	1,031

CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited) cont.

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$658,600	\$1,565 <sup>E</sup>	\$(7)	6/5/29	3 month USD-LIBOR-BBA — Quarterly	2.2225% — Semiannually	\$1,557
55,100	413 <sup>E</sup>	(2)	6/22/52	2.3075% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(415)
129,800	848 <sup>E</sup>	(2)	6/22/30	2.0625% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	(850)
147,200	520 <sup>E</sup>	(5)	7/17/49	2.194% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	515
113,300	812 <sup>E</sup>	(4)	7/17/49	3 month USD-LIBOR-BBA — Quarterly	2.241% — Semiannually	808
48,637,000	3,599 <sup>E</sup>	57,621	9/18/21	1.70% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	61,220
19,850,000	64,175 <sup>E</sup>	118,633	9/18/24	1.80% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	54,458
2,261,100	21,379 <sup>E</sup>	39,188	9/18/49	2.25% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	17,809
25,522,500	223,934 <sup>E</sup>	(317,848)	9/18/29	3 month USD-LIBOR-BBA — Quarterly	2.05% — Semiannually	(93,914)
1,182,000	1,083	(16)	6/26/29	1.9451% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	1,131
1,182,000	1,116	(16)	6/26/29	1.9448% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	1,164
142,700	829 <sup>E</sup>	(5)	7/17/49	2.184% — Semiannually	3 month USD-LIBOR-BBA — Quarterly	824
89,200	396 <sup>E</sup>	(2)	7/17/49	3 month USD-LIBOR-BBA — Quarterly	2.229% — Semiannually	394
<b>Total</b>		<b>\$(117,444)</b>				<b>\$(24,024)</b>

<sup>E</sup> Extended effective date.

OTC TOTAL RETURN SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited)

Swap counterparty/ Notional amount	Value	Upfront premium received (paid)	Termination date	Payments received (paid) by fund	Total return received by or paid by fund	Unrealized appreciation/ (depreciation)
<b>Bank of America N.A.</b>						
\$28,949	\$28,082	\$—	1/12/41	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	\$(579)
21,593	20,946	—	1/12/41	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(432)
<b>Barclays Bank PLC</b>						
222,564	223,131	—	1/12/40	4.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 4.00% 30 year Fannie Mae pools — Monthly	735
33,649	33,735	—	1/12/40	4.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 4.00% 30 year Fannie Mae pools — Monthly	111
159,109	159,508	—	1/12/40	4.50% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 4.50% 30 year Fannie Mae pools — Monthly	553
6,630	6,646	—	1/12/40	4.50% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 4.50% 30 year Fannie Mae pools — Monthly	23
4,148,669	4,157,702	—	1/12/41	5.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 5.00% 30 year Fannie Mae pools — Monthly	13,920
254,843	255,436	—	1/12/40	5.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 5.00% 30 year Fannie Mae pools — Monthly	894

OTC TOTAL RETURN SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited) cont.

Swap counterparty/ Notional amount	Value	Upfront premium received (paid)	Termination date	Payments received (paid) by fund	Total return received by or paid by fund	Unrealized appreciation/ (depreciation)
<b>Barclays Bank PLC cont.</b>						
\$47,099	\$47,086	\$—	1/12/41	5.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 5.00% 30 year Ginnie Mae II pools — Monthly	\$42
211,555	212,885	—	1/12/39	(6.00%) 1 month USD-LIBOR — Monthly	Synthetic MBX Index 6.00% 30 year Fannie Mae pools — Monthly	(1,658)
3,424,429	3,454,411	—	1/12/38	(6.50%) 1 month USD-LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(35,748)
1,550	1,531	—	1/12/43	3.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 3.50% 30 year Fannie Mae pools — Monthly	(5)
26,912	26,074	—	1/12/42	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(582)
35,829	34,755	—	1/12/41	(4.00%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	717
18,855	18,358	—	1/12/41	(5.00%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 5.00% 30 year Fannie Mae pools — Monthly	281
14,480	14,435	—	1/12/39	6.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.00% 30 year Fannie Mae pools — Monthly	120
19,748	19,875	—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	355
1,404	1,413	—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	25
<b>Citibank, N.A.</b>						
47,308	47,411	—	1/12/41	5.00% (1 month USD-LIBOR) — Monthly	Synthetic MBX Index 5.00% 30 year Fannie Mae pools — Monthly	159
<b>Credit Suisse International</b>						
25,979	25,409	—	1/12/44	3.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 3.50% 30 year Fannie Mae pools — Monthly	(344)
11,701	11,248	—	1/12/45	3.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 3.50% 30 year Fannie Mae pools — Monthly	(340)
3,311	3,271	—	1/12/43	3.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 3.50% 30 year Fannie Mae pools — Monthly	(10)
54,979	53,338	—	1/12/44	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(1,111)
24,794	24,051	—	1/12/41	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(496)
16,766	16,185	—	1/12/45	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(415)
12,233	11,809	—	1/12/45	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(303)
42,062	40,801	—	1/12/41	(4.00%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	841

OTC TOTAL RETURN SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited) cont.

Swap counterparty/ Notional amount	Value	Upfront premium received (paid)	Termination date	Payments received (paid) by fund	Total return received by or paid by fund	Unrealized appreciation/ (depreciation)
<b>Credit Suisse International cont.</b>						
\$28,508	\$27,756	\$—	1/12/41	(5.00%) 1 month USD- LIBOR — Monthly	Synthetic TRS Index 5.00% 30 year Fannie Mae pools — Monthly	\$425
<b>Goldman Sachs International</b>						
12,403	12,511	—	1/12/38	(6.50%) 1 month USD- LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(129)
33,084	33,374	—	1/12/38	(6.50%) 1 month USD- LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(345)
91,799	92,603	—	1/12/38	(6.50%) 1 month USD- LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(958)
244,360	246,499	—	1/12/38	(6.50%) 1 month USD- LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(2,551)
334,723	337,654	—	1/12/38	(6.50%) 1 month USD- LIBOR — Monthly	Synthetic MBX Index 6.50% 30 year Fannie Mae pools — Monthly	(3,494)
47,001	45,897	—	1/12/44	(3.00%) 1 month USD- LIBOR — Monthly	Synthetic TRS Index 3.00% 30 year Fannie Mae pools — Monthly	716
66,786	64,708	—	1/12/42	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(1,444)
66,786	64,708	—	1/12/42	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(1,444)
52,747	51,106	—	1/12/42	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(1,140)
49,428	47,890	—	1/12/42	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(1,068)
44,629	43,240	—	1/12/42	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(965)
13,100	12,580	—	1/12/40	4.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(387)
41,312	40,074	—	1/12/41	(4.00%) 1 month USD- LIBOR — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	826
36,481	35,519	—	1/12/41	(5.00%) 1 month USD- LIBOR — Monthly	Synthetic TRS Index 5.00% 30 year Fannie Mae pools — Monthly	544
87,335	87,061	—	1/12/39	6.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 6.00% 30 year Fannie Mae pools — Monthly	725
61,309	61,117	—	1/12/39	6.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 6.00% 30 year Fannie Mae pools — Monthly	509
36,191	36,077	—	1/12/39	6.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 6.00% 30 year Fannie Mae pools — Monthly	301
141	140	—	1/12/39	6.00% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 6.00% 30 year Fannie Mae pools — Monthly	1
43,192	43,469	—	1/12/38	6.50% (1 month USD- LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	775

OTC TOTAL RETURN SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited) cont.

Swap counterparty/ Notional amount	Value	Upfront premium received (paid)	Termination date	Payments received (paid) by fund	Total return received by or paid by fund	Unrealized appreciation/ (depreciation)
<b>Goldman Sachs International cont.</b>						
\$39,412	\$39,664	\$—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	\$708
38,191	38,436	—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	686
30,405	30,600	—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	546
8,612	8,667	—	1/12/38	6.50% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 6.50% 30 year Fannie Mae pools — Monthly	155
<b>JPMorgan Chase Bank N. A.</b>						
40,461	39,248	—	1/12/41	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(809)
3,406	3,304	—	1/12/41	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(68)
36,451	35,490	—	1/12/41	(5.00%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 5.00% 30 year Fannie Mae pools — Monthly	544
<b>JPMorgan Securities LLC</b>						
25,979	25,409	—	1/12/44	(3.50%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 3.50% 30 year Fannie Mae pools — Monthly	344
29,013	28,147	—	1/12/44	4.00% (1 month USD-LIBOR) — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	(587)
307,290	297,725	—	1/12/42	(4.00%) 1 month USD-LIBOR — Monthly	Synthetic TRS Index 4.00% 30 year Fannie Mae pools — Monthly	6,640
<b>Upfront premium received</b>		—		<b>Unrealized appreciation</b>		<b>33,221</b>
<b>Upfront premium (paid)</b>		—		<b>Unrealized (depreciation)</b>		<b>(57,412)</b>
<b>Total</b>		<b>\$—</b>		<b>Total</b>		<b>\$(24,191)</b>

CENTRALLY CLEARED TOTAL RETURN SWAP CONTRACTS OUTSTANDING at 6/30/19 (Unaudited)

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments received (paid) by fund	Total return received by or paid by fund	Unrealized appreciation/ (depreciation)
\$466,000	\$6,161	\$—	7/5/27	2.05% — At maturity	USA Non Revised Consumer Price Index- Urban (CPI-U) — At maturity	\$6,161
466,000	118	—	7/5/22	(1.89%) — At maturity	USA Non Revised Consumer Price Index- Urban (CPI-U) — At maturity	118
<b>Total</b>		<b>\$—</b>				<b>\$6,279</b>

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/19 (Unaudited)

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termination date	Payments received by fund	Unrealized appreciation/ (depreciation)
<b>Citigroup Global Markets, Inc.</b>							
CMBX NAA.6 Index	A/P	\$8,296	\$600,000	\$780	5/11/63	200 bp — Monthly	\$9,276
CMBX NAA.6 Index	A/P	1,390	498,000	647	5/11/63	200 bp — Monthly	2,204

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/19 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
<b>Citigroup Global Markets, Inc. cont.</b>							
CMBX NAA.6 Index	A/P	\$692	\$446,000	\$580	5/11/63	200 bp— Monthly	\$1,421
CMBX NAA.6 Index	A/P	4,196	430,000	559	5/11/63	200 bp— Monthly	4,898
CMBX NAA.6 Index	A/P	4,521	349,000	454	5/11/63	200 bp— Monthly	5,091
CMBX NAA.6 Index	A/P	(92)	237,000	308	5/11/63	200 bp— Monthly	295
CMBX NAA.6 Index	A/P	274	235,000	306	5/11/63	200 bp— Monthly	657
CMBX NAA.6 Index	A/P	25	32,000	42	5/11/63	200 bp— Monthly	77
CMBX NABB.7 Index	BB/P	1,666	12,000	1,253	1/17/47	500 bp— Monthly	423
CMBX NABB.7 Index	BB/P	2,571	20,000	2,088	1/17/47	500 bp— Monthly	499
CMBX NABBB-.6 Index	BBB-/P	142	1,000	100	5/11/63	300 bp— Monthly	43
CMBX NABBB-.6 Index	BBB-/P	527	4,000	402	5/11/63	300 bp— Monthly	127
CMBX NABBB-.6 Index	BBB-/P	1,816	17,000	1,707	5/11/63	300 bp— Monthly	118
CMBX NABBB-.6 Index	BBB-/P	3,410	31,000	3,112	5/11/63	300 bp— Monthly	313
CMBX NABBB-.6 Index	BBB-/P	3,696	32,000	3,213	5/11/63	300 bp— Monthly	499
CMBX NABBB-.6 Index	BBB-/P	3,775	33,000	3,313	5/11/63	300 bp— Monthly	479
CMBX NABBB-.6 Index	BBB-/P	4,082	37,000	3,715	5/11/63	300 bp— Monthly	386
CMBX NABBB-.6 Index	BBB-/P	4,590	41,000	4,116	5/11/63	300 bp— Monthly	494
CMBX NABBB-.6 Index	BBB-/P	5,170	47,000	4,719	5/11/63	300 bp— Monthly	475
CMBX NABBB-.6 Index	BBB-/P	25,822	240,000	24,096	5/11/63	300 bp— Monthly	1,846
CMBX NABBB-.6 Index	BBB-/P	31,288	303,000	30,421	5/11/63	300 bp— Monthly	1,018
CMBX NABBB-.6 Index	BBB-/P	40,880	385,000	38,654	5/11/63	300 bp— Monthly	2,418
CMBX NABBB-.6 Index	BBB-/P	44,274	413,000	41,465	5/11/63	300 bp— Monthly	3,016
CMBX NABBB-.6 Index	BBB-/P	47,575	424,000	42,570	5/11/63	300 bp— Monthly	5,217
CMBX NABBB-.6 Index	BBB-/P	42,699	435,000	43,674	5/11/63	300 bp— Monthly	(758)
<b>Credit Suisse International</b>							
CMBX NAA.6 Index	A/P	387	250,000	325	5/11/63	200 bp— Monthly	796
CMBX NABB.7 Index	BB/P	2,541	19,000	1,984	1/17/47	500 bp— Monthly	574
CMBX NABBB-.6 Index	BBB-/P	5,387	49,000	4,920	5/11/63	300 bp— Monthly	492
CMBX NABBB-.6 Index	BBB-/P	9,746	71,000	7,128	5/11/63	300 bp— Monthly	2,653
CMBX NABBB-.6 Index	BBB-/P	13,207	132,000	13,253	5/11/63	300 bp— Monthly	20
CMBX NABBB-.6 Index	BBB-/P	95,786	804,000	80,722	5/11/63	300 bp— Monthly	15,467

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/19 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
<b>Credit Suisse International cont.</b>							
CMBX NA BBB–.6 Index	BBB–/P	\$96,194	\$896,000	\$89,958	5/11/63	300 bp— Monthly	\$6,683
CMBX NA BBB–.6 Index	BBB–/P	140,705	1,308,000	131,323	5/11/63	300 bp— Monthly	10,035
<b>Deutsche Bank AG</b>							
CMBX NA BBB–.6 Index	BBB–/P	53,946	506,000	50,802	5/11/63	300 bp— Monthly	3,397
<b>Goldman Sachs International</b>							
CMBX NAA.6 Index	A/P	1,542	172,000	224	5/11/63	200 bp— Monthly	1,823
CMBX NAA.7 Index	A-/P	(213)	146,000	3,227	1/17/47	200 bp— Monthly	3,062
CMBX NA BBB–.6 Index	BBB–/P	142	1,000	100	5/11/63	300 bp— Monthly	43
CMBX NA BBB–.6 Index	BBB–/P	2,986	27,000	2,711	5/11/63	300 bp— Monthly	288
CMBX NA BBB–.6 Index	BBB–/P	9,878	85,000	8,534	5/11/63	300 bp— Monthly	1,387
CMBX NA BBB–.6 Index	BBB–/P	24,037	208,000	20,883	5/11/63	300 bp— Monthly	3,258
CMBX NA BBB–.6 Index	BBB–/P	41,260	411,000	41,264	5/11/63	300 bp— Monthly	202
CMBX NA BBB–.6 Index	BBB–/P	50,168	470,000	47,188	5/11/63	300 bp— Monthly	3,215
<b>JPMorgan Securities LLC</b>							
CMBX NAA.6 Index	A/P	12,446	541,000	703	5/11/63	200 bp— Monthly	13,329
CMBX NA BBB–.6 Index	BBB–/P	228,869	1,730,000	173,692	5/11/63	300 bp— Monthly	56,042
<b>Merrill Lynch International</b>							
CMBX NA BB.6 Index	BB/P	4,683	23,000	4,768	5/11/63	500 bp— Monthly	(66)
CMBX NA BB.7 Index	BB/P	1,452	12,000	1,253	1/17/47	500 bp— Monthly	209
CMBX NA BBB–.6 Index	BBB–/P	4,632	35,000	3,514	5/11/63	300 bp— Monthly	1,135
CMBX NA BBB–.6 Index	BBB–/P	4,406	39,000	3,916	5/11/63	300 bp— Monthly	510
CMBX NA BBB–.6 Index	BBB–/P	11,589	98,000	9,839	5/11/63	300 bp— Monthly	1,799
CMBX NA BBB–.6 Index	BBB–/P	46,719	417,000	41,867	5/11/63	300 bp— Monthly	5,061
<b>Morgan Stanley &amp; Co. International PLC</b>							
CMBX NAA.6 Index	A/P	2,430	894,000	1,162	5/11/63	200 bp— Monthly	3,890
CMBX NAA.6 Index	A/P	—	452,000	588	5/11/63	200 bp— Monthly	739
CMBX NAA.6 Index	A/P	3,560	325,000	423	5/11/63	200 bp— Monthly	4,091
CMBX NAA.6 Index	A/P	2,940	261,000	339	5/11/63	200 bp— Monthly	3,367
CMBX NAA.6 Index	A/P	3,457	250,000	325	5/11/63	200 bp— Monthly	3,865
CMBX NAA.6 Index	A/P	1,939	191,000	248	5/11/63	200 bp— Monthly	2,251
CMBX NAA.6 Index	A/P	1,277	156,000	203	5/11/63	200 bp— Monthly	1,531

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/19 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
<b>Morgan Stanley &amp; Co. International PLC cont.</b>							
CMBX NAA.6 Index	A/P	\$714	\$76,000	\$99	5/11/63	200 bp— Monthly	\$838
CMBX NAA.7 Index	A-/P	656	135,000	2,984	1/17/47	200 bp— Monthly	3,684
CMBX NAA.7 Index	A-/P	(5)	11,000	243	1/17/47	200 bp— Monthly	241
CMBX NAA.7 Index	A-/P	(2)	2,000	44	1/17/47	200 bp— Monthly	43
CMBX NABB.6 Index	BB/P	1,468	7,000	1,451	5/11/63	500 bp— Monthly	23
CMBX NABB-6 Index	BBB-/P	821	7,000	703	5/11/63	300 bp— Monthly	122
CMBX NABB-6 Index	BBB-/P	1,039	8,000	803	5/11/63	300 bp— Monthly	240
CMBX NABB-6 Index	BBB-/P	2,007	14,000	1,406	5/11/63	300 bp— Monthly	608
CMBX NABB-6 Index	BBB-/P	3,987	35,000	3,514	5/11/63	300 bp— Monthly	491
CMBX NABB-6 Index	BBB-/P	4,238	36,000	3,614	5/11/63	300 bp— Monthly	642
CMBX NABB-6 Index	BBB-/P	4,560	43,000	4,317	5/11/63	300 bp— Monthly	264
CMBX NABB-6 Index	BBB-/P	6,441	44,000	4,418	5/11/63	300 bp— Monthly	2,046
CMBX NABB-6 Index	BBB-/P	6,984	45,000	4,518	5/11/63	300 bp— Monthly	2,489
CMBX NABB-6 Index	BBB-/P	6,536	57,000	5,723	5/11/63	300 bp— Monthly	842
CMBX NABB-6 Index	BBB-/P	7,344	62,000	6,225	5/11/63	300 bp— Monthly	1,151
CMBX NABB-6 Index	BBB-/P	10,094	76,000	7,630	5/11/63	300 bp— Monthly	2,502
CMBX NABB-6 Index	BBB-/P	11,268	88,000	8,835	5/11/63	300 bp— Monthly	2,476
CMBX NABB-6 Index	BBB-/P	9,983	93,000	9,337	5/11/63	300 bp— Monthly	692
CMBX NABB-6 Index	BBB-/P	17,289	115,000	11,546	5/11/63	300 bp— Monthly	5,800
CMBX NABB-6 Index	BBB-/P	17,385	124,000	12,450	5/11/63	300 bp— Monthly	4,997
CMBX NABB-6 Index	BBB-/P	15,926	130,000	13,052	5/11/63	300 bp— Monthly	2,939
CMBX NABB-6 Index	BBB-/P	20,536	135,000	13,554	5/11/63	300 bp— Monthly	7,049
CMBX NABB-6 Index	BBB-/P	22,748	211,000	21,184	5/11/63	300 bp— Monthly	1,669
CMBX NABB-6 Index	BBB-/P	23,830	223,000	22,389	5/11/63	300 bp— Monthly	1,553
CMBX NABB-6 Index	BBB-/P	34,739	282,000	28,313	5/11/63	300 bp— Monthly	6,567
CMBX NABB-6 Index	BBB-/P	41,278	390,000	39,156	5/11/63	300 bp— Monthly	2,317
CMBX NABB-6 Index	BBB-/P	48,077	419,000	42,068	5/11/63	300 bp— Monthly	6,219
CMBX NABB-6 Index	BBB-/P	49,475	470,000	47,188	5/11/63	300 bp— Monthly	2,522
CMBX NABB-6 Index	BBB-/P	50,008	470,000	47,188	5/11/63	300 bp— Monthly	3,055

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/19 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
<b>Morgan Stanley &amp; Co. International PLC cont.</b>							
CMBX NA BBB-6 Index	BBB-/P	\$64,868	\$610,000	\$61,244	5/11/63	300 bp— Monthly	\$3,929
CMBX NA BBB-6 Index	BBB-/P	224,418	1,852,000	185,941	5/11/63	300 bp— Monthly	39,403
CMBX NA BBB-6 Index	BBB-/P	310,210	2,560,000	257,024	5/11/63	300 bp— Monthly	54,466
CMBX NA BBB-7 Index	BBB-/P	74	1,000	27	1/17/47	300 bp— Monthly	48
CMBX NA BBB-7 Index	BBB-/P	43,490	639,000	17,445	1/17/47	300 bp— Monthly	26,367
<b>Upfront premium received</b>		<b>2,224,179</b>					<b>Unrealized appreciation</b>
<b>Upfront premium (paid)</b>		<b>(312)</b>					<b>Unrealized (depreciation)</b>
<b>Total</b>		<b>\$2,223,867</b>					<b>Total</b>
							<b>380,798</b>
							<b>(824)</b>
							<b>\$379,974</b>

\* Payments related to the referenced debt are made upon a credit default event.

\*\* Upfront premium is based on the difference between the original spread on issue and the market spread on day of execution.

\*\*\* Ratings for an underlying index represent the average of the ratings of all the securities included in that index. The Moody's, Standard & Poor's or Fitch ratings are believed to be the most recent ratings available at June 30, 2019. Securities rated by Putnam are indicated by "/P." The Putnam rating categories are comparable to the Standard & Poor's classifications.

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION PURCHASED at 6/30/19 (Unaudited)

Swap counterparty/ Referenced debt*	Rating	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments (paid) by fund	Unrealized appreciation/ (depreciation)
<b>Citigroup Global Markets, Inc.</b>							
CMBX NA BB.10 Index		\$(2,522)	\$23,000	\$1,990	11/17/59	(500 bp)— Monthly	\$(552)
CMBX NA BB.10 Index		(1,252)	12,000	1,038	11/17/59	(500 bp)— Monthly	(224)
CMBX NA BB.11 Index		(4,535)	35,000	3,455	11/18/54	(500 bp)— Monthly	(1,109)
CMBX NA BB.7 Index		(47,656)	374,000	39,046	1/17/47	(500 bp)— Monthly	(8,923)
CMBX NA BB.9 Index		(4,921)	35,000	3,637	9/17/58	(500 bp)— Monthly	(1,314)
CMBX NA BB.9 Index		(3,092)	23,000	2,390	9/17/58	(500 bp)— Monthly	(721)
CMBX NA BB.9 Index		(2,990)	23,000	2,390	9/17/58	(500 bp)— Monthly	(619)
CMBX NA BB.9 Index		(3,079)	20,000	2,078	9/17/58	(500 bp)— Monthly	(1,018)
CMBX NA BBB-7 Index		(2,324)	56,000	1,529	1/17/47	(300 bp)— Monthly	(824)
<b>Credit Suisse International</b>							
CMBX NA BB.10 Index		(3,202)	24,000	2,076	11/17/59	(500 bp)— Monthly	(1,146)
CMBX NA BB.10 Index		(2,854)	24,000	2,076	11/17/59	(500 bp)— Monthly	(798)
CMBX NA BB.10 Index		(1,616)	13,000	1,125	11/17/59	(500 bp)— Monthly	(502)
CMBX NA BB.9 Index		(1,995)	13,000	1,351	9/17/58	(500 bp)— Monthly	(656)
CMBX NA BB.9 Index		(1,818)	12,000	1,247	9/17/58	(500 bp)— Monthly	(582)
CMBX NA BB.9 Index		(1,289)	9,000	935	9/17/58	(500 bp)— Monthly	(361)
<b>Goldman Sachs International</b>							
CMBX NA BB.9 Index		(15,334)	96,000	9,974	9/17/58	(500 bp)— Monthly	(5,440)
<b>JPMorgan Securities LLC</b>							
CMBX NA BB.7 Index		(1,772)	14,000	1,462	1/17/47	(500 bp)— Monthly	(322)
CMBX NA BB.9 Index		(22,504)	159,000	16,520	9/17/58	(500 bp)— Monthly	(6,117)
CMBX NA BB.9 Index		(17,795)	126,000	13,091	9/17/58	(500 bp)— Monthly	(4,809)
CMBX NA BB.9 Index		(4,293)	28,000	2,909	9/17/58	(500 bp)— Monthly	(1,407)
CMBX NA BBB-7 Index		(5,730)	151,000	4,122	1/17/47	(300 bp)— Monthly	(1,683)
CMBX NA BBB-7 Index		(3,832)	81,000	2,211	1/17/47	(300 bp)— Monthly	(1,661)
CMBX NA BBB-7 Index		(2,178)	60,000	1,638	1/17/47	(300 bp)— Monthly	(570)
<b>Merrill Lynch International</b>							
CMBX NA BB.10 Index		(1,426)	12,000	1,038	11/17/59	(500 bp)— Monthly	(398)
CMBX NA BB.10 Index		(1,265)	12,000	1,038	11/17/59	(500 bp)— Monthly	(237)
CMBX NA BB.9 Index		(28,700)	196,000	20,364	9/17/58	(500 bp)— Monthly	(8,499)
CMBX NA BB.9 Index		(27,552)	187,000	19,429	9/17/58	(500 bp)— Monthly	(8,278)

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION PURCHASED at 6/30/19 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments (paid) by fund	Unrealized appreciation/ (depreciation)
<b>Merrill Lynch International cont.</b>						
CMBX NA BB.9 Index	\$(28,562)	\$182,000	\$18,910	9/17/58	(500 bp) — Monthly	\$(9,804)
CMBX NA BB.9 Index	(27,541)	180,000	18,702	9/17/58	(500 bp) — Monthly	(8,989)
CMBX NA BB.9 Index	(21,741)	139,000	14,442	9/17/58	(500 bp) — Monthly	(7,414)
CMBX NA BB.9 Index	(1,571)	12,000	1,247	9/17/58	(500 bp) — Monthly	(334)
<b>Morgan Stanley &amp; Co. International PLC</b>						
CMBX NA BB.10 Index	(1,259)	12,000	1,038	11/17/59	(500 bp) — Monthly	(231)
CMBX NA BB.9 Index	(31,748)	204,000	21,196	9/17/58	(500 bp) — Monthly	(10,723)
CMBX NA BB.9 Index	(24,315)	179,000	18,598	9/17/58	(500 bp) — Monthly	(5,867)
CMBX NA BB.9 Index	(23,827)	179,000	18,598	9/17/58	(500 bp) — Monthly	(5,378)
CMBX NA BB.9 Index	(26,620)	177,000	18,390	9/17/58	(500 bp) — Monthly	(8,377)
CMBX NA BB.9 Index	(22,969)	168,000	17,455	9/17/58	(500 bp) — Monthly	(5,654)
CMBX NA BB.9 Index	(23,840)	158,000	16,416	9/17/58	(500 bp) — Monthly	(7,555)
CMBX NA BB.9 Index	(20,169)	140,000	14,546	9/17/58	(500 bp) — Monthly	(5,740)
CMBX NA BB.9 Index	(12,260)	81,000	8,416	9/17/58	(500 bp) — Monthly	(3,912)
CMBX NA BB.9 Index	(12,260)	81,000	8,416	9/17/58	(500 bp) — Monthly	(3,912)
CMBX NA BBB-7 Index	(4,063)	64,000	1,747	1/17/47	(300 bp) — Monthly	(2,348)
<b>Upfront premium received</b>	<b>—</b>					<b>Unrealized appreciation</b>
<b>Upfront premium (paid)</b>	<b>(500,271)</b>					<b>Unrealized (depreciation)</b>
<b>Total</b>	<b>\$(500,271)</b>					<b>Total</b>
						<b>\$(145,008)</b>

\* Payments related to the referenced debt are made upon a credit default event.

\*\* Upfront premium is based on the difference between the original spread on issue and the market spread on day of execution.

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
Asset-backed securities	\$—	\$862,000	\$—
Mortgage-backed securities	—	36,556,914	—
Purchased options outstanding	—	100,735	—
Purchased swap options outstanding	—	3,076,615	—
U.S. government and agency mortgage obligations	—	68,204,474	—
U.S. treasury obligations	—	245,674	—
Short-term investments	101,000	6,500,291	—
<b>Totals by level</b>	<b>\$101,000</b>	<b>\$115,546,703</b>	<b>\$—</b>

Other financial instruments:	Valuation inputs		
	Level 1	Level 2	Level 3
Futures contracts	\$13,787	\$—	\$—
Written options outstanding	—	(61,189)	—
Written swap options outstanding	—	(2,468,580)	—
Forward premium swap option contracts	—	(136,905)	—
TBA sale commitments	—	(22,254,570)	—
Interest rate swap contracts	—	93,420	—
Total return swap contracts	—	(17,912)	—
Credit default contracts	—	(1,488,630)	—
<b>Totals by level</b>	<b>\$13,787</b>	<b>\$(26,334,366)</b>	<b>\$—</b>

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

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 \$114,870,555)	\$115,647,703
Cash	152,368
Interest and other receivables	3,485,484
Receivable for shares of the fund sold	40,412
Receivable for investments sold	3,149,473
Receivable for sales of TBA securities (Note 1)	14,148,170
Receivable from Manager (Note 2)	13,723
Receivable for variation margin on futures contracts (Note 1)	2,200
Receivable for variation margin on centrally cleared swap contracts (Note 1)	101,392
Unrealized appreciation on forward premium swap option contracts (Note 1)	75,772
Unrealized appreciation on OTC swap contracts (Note 1)	414,019
Premium paid on OTC swap contracts (Note 1)	500,583
<b>Total assets</b>	<b>137,731,299</b>

## Liabilities

Payable for investments purchased	2,228,316
Payable for purchases of delayed delivery securities (Note 1)	4,084,639
Payable for purchases of TBA securities (Note 1)	46,753,567
Payable for shares of the fund repurchased	13,763
Payable for custodian fees (Note 2)	57,917
Payable for investor servicing fees (Note 2)	6,572
Payable for Trustee compensation and expenses (Note 2)	61,994
Payable for administrative services (Note 2)	226
Payable for distribution fees (Note 2)	5,097
Payable for variation margin on futures contracts (Note 1)	2,241
Payable for variation margin on centrally cleared swap contracts (Note 1)	83,473
Unrealized depreciation on OTC swap contracts (Note 1)	203,244
Premium received on OTC swap contracts (Note 1)	2,224,179
Unrealized depreciation on forward premium swap option contracts (Note 1)	212,677
Written options outstanding, at value (premiums \$2,188,991) (Note 1)	2,529,769
TBA sale commitments, at value (proceeds receivable \$22,227,403) (Note 1)	22,254,570
Collateral on certain derivative contracts and TBA commitments, at value (Notes 1 and 8)	346,674
Other accrued expenses	43,840
<b>Total liabilities</b>	<b>81,112,758</b>
<b>Net assets</b>	<b>\$56,618,541</b>

## Represented by

Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$71,383,328
Total distributable earnings (Note 1)	(14,764,787)
<b>Total — Representing net assets applicable to capital shares outstanding</b>	<b>\$56,618,541</b>

## Computation of net asset value Class IA

Net assets	\$31,788,439
Number of shares outstanding	3,298,830
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$9.64

## Computation of net asset value Class IB

Net assets	\$24,830,102
Number of shares outstanding	2,580,064
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$9.62

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

# Statement of operations

Six months ended 6/30/19 (Unaudited)

## Investment income

Interest	\$1,095,586
<b>Total investment income</b>	<b>1,095,586</b>

## Expenses

Compensation of Manager (Note 2)	107,732
Investor servicing fees (Note 2)	19,437
Custodian fees (Note 2)	26,090
Trustee compensation and expenses (Note 2)	1,351
Distribution fees (Note 2)	30,205
Administrative services (Note 2)	721
Auditing and tax fees	28,574
Other	15,368
Fees waived and reimbursed by Manager (Note 2)	(61,343)
<b>Total expenses</b>	<b>168,135</b>
Expense reduction (Note 2)	(595)
<b>Net expenses</b>	<b>167,540</b>
<b>Net investment income</b>	<b>928,046</b>

## Realized and unrealized gain (Loss)

### Net realized gain (loss) on:

Securities from unaffiliated issuers (Notes 1 and 3)	1,012,485
Futures contracts (Note 1)	22,525
Swap contracts (Note 1)	(368,386)
Written options (Note 1)	442,684
<b>Total net realized gain</b>	<b>1,109,308</b>

### Change in net unrealized appreciation (depreciation) on:

Securities from unaffiliated issuers and TBA sale commitments	467,555
Futures contracts	14,777
Swap contracts	1,389,617
Written options	(31,900)
<b>Total change in net unrealized appreciation</b>	<b>1,840,049</b>

<b>Net gain on investments</b>	<b>2,949,357</b>
<b>Net increase in net assets resulting from operations</b>	<b>\$3,877,403</b>

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

## Statement of changes in net assets

	Six months ended 6/30/19*	Year ended 12/31/18
<b>Increase (decrease) in net assets</b>		
<b>Operations:</b>		
Net investment income	\$928,046	\$2,183,409
Net realized gain (loss) on investments	1,109,308	(829,830)
Change in net unrealized appreciation (depreciation) of investments	1,840,049	(1,823,084)
<b>Net increase (decrease) in net assets resulting from operations</b>	<b>3,877,403</b>	<b>(469,505)</b>
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(785,112)	(1,036,991)
Class IB	(529,481)	(731,746)
Decrease from capital share transactions (Note 4)	(425,945)	(6,656,496)
<b>Total increase (decrease) in net assets</b>	<b>2,136,865</b>	<b>(8,894,738)</b>
<b>Net assets:</b>		
Beginning of period	54,481,676	63,376,414
<b>End of period</b>	<b>\$56,618,541</b>	<b>\$54,481,676</b>

\* 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) <sup>a</sup>	Net realized and unrealized gain (loss) on investments	Total from investment operations	From net investment income	Total distributions	Net asset value, end of period	Total return at net asset value (%) <sup>b,c</sup>	Net assets, end of period (in thousands)	Ratio of expenses to average net assets (%) <sup>b,d</sup>	Ratio of net investment income (loss) to average net assets (%)	Portfolio turnover (%) <sup>e</sup>
<b>Class IA</b>												
6/30/19†	\$9.21	.16	.51	.67	(.24)	(.24)	\$9.64	7.34*	\$31,788	.25* <sup>f</sup>	1.73* <sup>f</sup>	292*
12/31/18	9.55	.35	(.41)	(.06)	(.28)	(.28)	9.21	(.62)	31,249	.56 <sup>f</sup>	3.80 <sup>f</sup>	1,142
12/31/17	9.59	.27	(.06)	.21	(.25)	(.25)	9.55	2.27	35,852	.66	2.85	1,188
12/31/16	9.76	.24	(.20)	.04	(.21)	(.21)	9.59	.36	40,362	.64 <sup>g</sup>	2.43 <sup>g</sup>	1,028
12/31/15	10.02	.19	(.22)	(.03)	(.23)	(.23)	9.76	(.33)	44,229	.62	1.92	905
12/31/14	10.01	.22	.22	.44	(.43)	(.43)	10.02	4.49	50,935	.62	2.17	587
<b>Class IB</b>												
6/30/19†	\$9.18	.15	.50	.65	(.21)	(.21)	\$9.62	7.18*	\$24,830	.37* <sup>f</sup>	1.60* <sup>f</sup>	292*
12/31/18	9.52	.33	(.41)	(.08)	(.26)	(.26)	9.18	(.90)	23,232	.81 <sup>f</sup>	3.54 <sup>f</sup>	1,142
12/31/17	9.56	.25	(.07)	.18	(.22)	(.22)	9.52	1.96	27,524	.91	2.60	1,188
12/31/16	9.72	.21	(.19)	.02	(.18)	(.18)	9.56	.20	33,301	.89 <sup>g</sup>	2.18 <sup>g</sup>	1,028
12/31/15	9.99	.16	(.22)	(.06)	(.21)	(.21)	9.72	(.65)	35,862	.87	1.67	905
12/31/14	9.97	.19	.23	.42	(.40)	(.40)	9.99	4.31	41,287	.87	1.89	587

Before April 30, 2018, the fund was managed with a materially different investment strategy and may have achieved materially different performance results under its current investment strategy from that shown for periods before this date.

\* Not annualized.

† Unaudited.

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

<sup>b</sup> The charges and expenses at the insurance company separate account level are not reflected.

<sup>c</sup> Total return assumes dividend reinvestment.

<sup>d</sup> Includes amounts paid through expense offset arrangements, if any (Note 2). Also excludes acquired fund fees and expenses, if any.

<sup>e</sup> Portfolio turnover includes TBA purchase and sale commitments.

<sup>f</sup> Reflects an involuntary contractual expense limitation in effect during the period. As a result of such limitation, the expenses of each class reflect the following reductions as a percentage of average net assets.

	% of average net assets
June 30, 2019	0.11%
December 31, 2018	0.25

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

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

## Notes to financial statements 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 Mortgage Securities 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 level of current income as Putnam Management believes is consistent with preservation of capital. The fund invests mainly in mortgages, mortgage-related fixed income securities and related derivatives that are either investment-grade or below-investment-grade in quality (sometimes referred to as "junk bonds"). Under normal circumstances, the fund invests at least 80% of its net assets (plus any borrowings for investment purposes) in mortgages, mortgage-related fixed income securities and related derivatives (i.e., derivatives used to acquire exposure to, or whose underlying securities are, mortgages or mortgage-related securities). The fund generally uses the net unrealized gain or loss, or market value, of mortgage-related derivatives for purposes of this policy, but may use the notional value of a derivative if that is determined to be a more appropriate measure of the fund's investment exposure. This policy may be changed only after 60 days' notice to shareholders.

The fund expects to invest in mortgage-backed investments that are obligations of U.S. government agencies and instrumentalities and accordingly are backed by the full faith and credit of the United States (e.g., Ginnie Mae mortgage-backed bonds) as well as in mortgage-backed investments that are backed by only the credit of a federal agency or government-sponsored entity (e.g., Fannie Mae and Freddie Mac mortgage-backed bonds), and that have short- to long-term maturities.

The fund also expects to invest in lower-rated, higher-yielding mortgage-backed securities, including non-agency residential mortgage-backed securities (which may be backed by non-qualified or "sub-prime" mortgages), commercial mortgage-backed securities, and collateralized mortgage obligations (including interest only, principal only, and other prepayment derivatives). Non-agency (i.e., privately issued) securities typically are lower-rated and higher yielding than securities issued or backed by agencies such as Ginnie Mae, Fannie Mae or Freddie Mac. While the fund's emphasis will be on mortgage-backed securities, it may also invest to a lesser extent in other types of asset-backed securities.

Putnam Management may consider, among other factors, credit, interest rate, prepayment and liquidity risks, as well as general market conditions, when deciding whether to buy or sell investments.

The fund typically uses to a significant extent derivatives, including interest rate swaps, swaptions, forward delivery contracts, total return swaps, and options on mortgage-backed securities and indices, for both hedging and non-hedging purposes, including to obtain or adjust exposure to mortgage-backed 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, including mortgage backed securities and short-term investments with remaining maturities of 60 days or less, are valued on the basis of valuations provided by an independent pricing service approved by the Trustees or dealers selected by Putnam Management. Such service providers use information with respect to transactions in bonds, quotations from bond dealers, market transactions in comparable securities and various relationships between securities in determining value. These securities will generally be categorized as Level 2.

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. Certain securities may be valued on the basis of a price provided by a single source. 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.

**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 \$4,437,932 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). Gains or losses on securities sold are determined on the identified cost basis.

Interest income, net of any applicable withholding taxes and including amortization and accretion of premiums and discounts on debt securities, is recorded on the accrual basis.

Securities purchased or sold on a delayed delivery basis may be settled at a future date beyond customary settlement time; interest income is accrued based on the terms of the securities. Losses may arise due to changes in the fair value of the underlying securities or if the counterparty does not perform under the contract.

**Stripped securities** The fund may invest in stripped securities which represent a participation in securities that may be structured in classes with rights to receive different portions of the interest and principal. Interest-only securities receive all of the interest and principal-only securities receive all of the principal. If the interest-only securities experience greater than anticipated prepayments of principal, the fund may fail to recoup fully its initial investment in these securities. Conversely, principal-only securities increase in value if prepayments are greater than anticipated and decline if prepayments are slower than anticipated. The fair value of these securities is highly sensitive to changes in interest rates.

**Options contracts** The fund uses options contracts to hedge duration and convexity, to isolate prepayment risk and to manage downside risks.

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 for hedging treasury term structure risk and for yield curve positioning.

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.

**Interest rate swap contracts** The fund entered into OTC and/or centrally cleared interest rate swap contracts, which are arrangements between two parties to

exchange cash flows based on a notional principal amount, for hedging term structure risk and for yield curve positioning.

An OTC and centrally cleared interest rate swap can be purchased or sold with an upfront premium. For OTC interest rate swap contracts, an upfront payment received by the fund is recorded as a liability on the fund's books. An upfront payment made by the fund is recorded as an asset on the fund's books. OTC and centrally cleared interest rate swap contracts are marked to market daily based upon quotations from an independent pricing service or market makers. Any change is recorded as an unrealized gain or loss on OTC interest rate swaps. Daily fluctuations in the value of centrally cleared interest rate swaps are settled through a central clearing agent and are recorded in variation margin on the Statement of assets and liabilities and recorded as unrealized gain or loss. Payments, including upfront premiums, received or made are recorded as realized gains or losses at the reset date or the closing of the contract. Certain OTC and centrally cleared interest rate swap contracts may include extended effective dates. Payments related to these swap contracts are accrued based on the terms of the contract.

The fund could be exposed to credit or market risk due to unfavorable changes in the fluctuation of interest rates or if the counterparty defaults, in the case of OTC interest rate contracts, or the central clearing agency or a clearing member defaults, in the case of centrally cleared interest rate swap contracts, on its respective obligation to perform under the contract. The fund's maximum risk of loss from counterparty risk or central clearing risk is the fair value of the contract. This risk may be mitigated for OTC interest rate swap contracts by having a master netting arrangement between the fund and the counterparty and for centrally cleared interest rate swap contracts through the daily exchange of variation margin. There is minimal counterparty risk with respect to centrally cleared interest rate swap contracts due to the clearinghouse guarantee fund and other resources that are available in the event of a clearing member default. Risk of loss may exceed amounts recognized on the Statement of assets and liabilities.

OTC and centrally cleared interest rate swap contracts outstanding, including their respective notional amounts at period end, if any, are listed after the fund's portfolio.

**Total return swap contracts** The fund entered into OTC and/or centrally cleared total return swap contracts, which are arrangements to exchange a market-linked return for a periodic payment, both based on a notional principal amount, to hedge sector exposure and for gaining exposure to specific sectors.

To the extent that the total return of the security, index or other financial measure underlying the transaction exceeds or falls short of the offsetting interest rate obligation, the fund will receive a payment from or make a payment to the counterparty. OTC and/or centrally cleared total return swap contracts are marked to market daily based upon quotations from an independent pricing service or market maker. Any change is recorded as an unrealized gain or loss on OTC total return swaps. Daily fluctuations in the value of centrally cleared total return swaps are settled through a central clearing agent and are recorded in variation margin on the Statement of assets and liabilities and recorded as unrealized gain or loss. Payments received or made are recorded as realized gains or losses. Certain OTC and/or centrally cleared total return swap contracts may include extended effective dates. Payments related to these swap contracts are accrued based on the terms of the contract. The fund could be exposed to credit or market risk due to unfavorable changes in the fluctuation of interest rates or in the price of the underlying security or index, the possibility that there is no liquid market for these agreements or that the counterparty may default on its obligation to perform. The fund's maximum risk of loss from counterparty risk or central clearing risk is the fair value of the contract. This risk may be mitigated for OTC total return swap contracts by having a master netting arrangement between the fund and the counterparty and for centrally cleared total return swap contracts through the daily exchange of variation margin. There is minimal counterparty risk with respect to centrally cleared total return swap contracts due to the clearinghouse guarantee fund and other resources that are available in the event of a clearing member default. Risk of loss may exceed amounts recognized on the Statement of assets and liabilities.

OTC and/or centrally cleared total return swap contracts outstanding, including their respective notional amounts at period end, if any, are listed after the fund's portfolio.

**Credit default contracts** The fund entered into OTC and/or centrally cleared credit default contracts to hedge credit risk, to hedge market risk and for gaining exposure to specific sectors.

In OTC and centrally cleared credit default contracts, the protection buyer typically makes a periodic stream of payments to a counterparty, the protection seller, in exchange for the right to receive a contingent payment upon the occurrence of a credit event on the reference obligation or all other equally ranked obligations

of the reference entity. Credit events are contract specific but may include bankruptcy, failure to pay, restructuring and obligation acceleration. For OTC credit default contracts, an upfront payment received by the fund is recorded as a liability on the fund's books. An upfront payment made by the fund is recorded as an asset on the fund's books. Centrally cleared credit default contracts provide the same rights to the protection buyer and seller except the payments between parties, including upfront premiums, are settled through a central clearing agent through variation margin payments. Upfront and periodic payments received or paid by the fund for OTC and centrally cleared credit default contracts are recorded as realized gains or losses at the reset date or close of the contract. The OTC and centrally cleared credit default contracts are marked to market daily based upon quotations from an independent pricing service or market makers. Any change in value of OTC credit default contracts is recorded as an unrealized gain or loss. Daily fluctuations in the value of centrally cleared credit default contracts are recorded in variation margin on the Statement of assets and liabilities and recorded as unrealized gain or loss. Upon the occurrence of a credit event, the difference between the par value and fair value of the reference obligation, net of any proportional amount of the upfront payment, is recorded as a realized gain or loss.

In addition to bearing the risk that the credit event will occur, the fund could be exposed to market risk due to unfavorable changes in interest rates or in the price of the underlying security or index or the possibility that the fund may be unable to close out its position at the same time or at the same price as if it had purchased the underlying reference obligations. In certain circumstances, the fund may enter into offsetting OTC and centrally cleared credit default contracts which would mitigate its risk of loss. Risks of loss may exceed amounts recognized on the Statement of assets and liabilities. The fund's maximum risk of loss from counterparty risk, either as the protection seller or as the protection buyer, is the fair value of the contract. This risk may be mitigated for OTC credit default contracts by having a master netting arrangement between the fund and the counterparty and for centrally cleared credit default contracts through the daily exchange of variation margin. Counterparty risk is further mitigated with respect to centrally cleared credit default swap contracts due to the clearinghouse guarantee fund and other resources that are available in the event of a clearing member default. Where the fund is a seller of protection, the maximum potential amount of future payments the fund may be required to make is equal to the notional amount.

OTC and centrally cleared credit default contracts outstanding, including their respective notional amounts at period end, if any, are listed after the fund's portfolio.

**TBA commitments** The fund may enter into TBA (to be announced) commitments to purchase securities for a fixed unit price at a future date beyond customary settlement time. Although the unit price and par amount have been established, the actual securities have not been specified. However, it is anticipated that the amount of the commitments will not significantly differ from the principal amount. The fund holds, and maintains until settlement date, cash or high-grade debt obligations in an amount sufficient to meet the purchase price, or the fund may enter into offsetting contracts for the forward sale of other securities it owns. Income on the securities will not be earned until settlement date.

The fund may also enter into TBA sale commitments to hedge its portfolio positions, to sell mortgage-backed securities it owns under delayed delivery arrangements or to take a short position in mortgage-backed securities. Proceeds of TBA sale commitments are not received until the contractual settlement date. During the time a TBA sale commitment is outstanding, either equivalent deliverable securities or an offsetting TBA purchase commitment deliverable on or before the sale commitment date are held as "cover" for the transaction, or other liquid assets in an amount equal to the notional value of the TBA sale commitment are segregated. If the TBA sale commitment is closed through the acquisition of an offsetting TBA purchase commitment, the fund realizes a gain or loss. If the fund delivers securities under the commitment, the fund realizes a gain or a loss from the sale of the securities based upon the unit price established at the date the commitment was entered into.

TBA commitments, which are accounted for as purchase and sale transactions, may be considered securities themselves, and involve a risk of loss due to changes in the value of the security prior to the settlement date as well as the risk that the counterparty to the transaction will not perform its obligations. Counterparty risk is mitigated by having a master agreement between the fund and the counterparty.

Unsettled TBA commitments are valued at their fair value according to the procedures described under "Security valuation" above. The contract is marked to market daily and the change in fair value is recorded by the fund as an unrealized gain or loss. Based on market circumstances, Putnam Management will determine whether to take delivery of the underlying securities or to dispose of the TBA commitments prior to settlement.

TBA purchase commitments outstanding at period end, if any, are listed within the fund's portfolio and TBA sale commitments 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 that govern OTC derivative and foreign exchange contracts and Master Securities Forward Transaction Agreements that govern transactions involving mortgage-backed and other asset-backed securities that may result in delayed delivery (Master Agreements) with certain counterparties entered into from time to time. The Master Agreements may contain provisions regarding, among other things, the parties' general obligations, representations, agreements, collateral requirements, events of default and early termination. With respect to certain counterparties, in accordance with the terms of the Master Agreements, collateral posted to the fund is held in a segregated account by the fund's custodian and, with respect to those amounts which can be sold or repledged, are 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.

With respect to ISDA Master Agreements, 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 or 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 \$1,383,520 on open derivative contracts subject to the Master Agreements. Collateral posted by the fund at period end for these agreements totaled \$1,377,769 and may include amounts related to unsettled agreements.

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

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

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

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

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
\$16,080,642	\$667,570	\$16,748,212

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 aggregate identified cost on a tax basis is \$89,289,805, resulting in gross unrealized appreciation and depreciation of \$4,626,435 and \$4,589,116, respectively, or net unrealized appreciation of \$37,319.

**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. 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 35.9% 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:

0.550%	of the first \$5 billion,
0.500%	of the next \$5 billion,
0.450%	of the next \$10 billion,
0.400%	of the next \$10 billion,
0.350%	of the next \$50 billion,
0.330%	of the next \$50 billion,
0.320%	of the next \$100 billion and
0.315%	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 0.194% of the fund's average net assets.

Putnam Management has contractually agreed to waive fees (and, to the extent necessary, bear other expenses) of the fund through April 30, 2021, to the extent that total expenses of the fund (excluding brokerage, interest, taxes, investment-related expenses, payments under distribution plans, extraordinary expenses and acquired fund fees and expenses) would exceed an annual rate of 0.50% of the fund's average net assets. During the reporting period, the fund's expenses were reduced by \$44,549 as a result of this limit.

Putnam Management has also 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 plans, on a fiscal year-to-date basis to an annual rate of 0.20% of the fund's average net assets over such fiscal year-to-date period. During the reporting period, the fund's expenses were reduced by \$16,794 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	\$11,042
Class IB	8,395
Total	\$19,437

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 \$595 under the expense offset arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$40, as a quarterly retainer, has been allocated to the fund, and an additional fee for each Trustee's 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, including TBA commitments (Long-term)	\$260,295,322	\$241,089,673
U.S. government securities (Long-term)	—	—
<b>Total</b>	<b>\$260,295,322</b>	<b>\$241,089,673</b>

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			
	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	52,784	\$496,707	157,614	\$1,470,417	246,213	\$2,324,489	329,770	\$3,053,013
Shares issued in connection with reinvestment of distributions	84,330	785,112	112,472	1,036,991	56,933	529,481	79,365	731,746
	137,114	1,281,819	270,086	2,507,408	303,146	2,853,970	409,135	3,784,759
Shares repurchased	(231,047)	(2,178,693)	(631,370)	(5,849,650)	(252,464)	(2,383,041)	(770,598)	(7,099,013)
<b>Net increase (decrease)</b>	<b>(93,933)</b>	<b>\$(896,874)</b>	<b>(361,284)</b>	<b>\$(3,342,242)</b>	<b>50,682</b>	<b>\$470,929</b>	<b>(361,463)</b>	<b>\$(3,314,254)</b>

#### 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. The fund may invest a significant portion of its assets in securitized debt instruments, including mortgage-backed and asset-backed investments. The yields and values of these investments are sensitive to changes in interest rates, the rate of principal payments on the underlying assets and the market's perception of the issuers. The market for these investments may be volatile and limited, which may make them difficult to buy or sell.

#### Note 6 — 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 TBA commitment option contracts (contract amount)	\$37,900,000
Purchased swap option contracts (contract amount)	\$140,300,000
Written TBA commitment option contracts (contract amount)	\$39,600,000
Written swap option contracts (contract amount)	\$112,800,000
Futures contracts (number of contracts)	70
Centrally cleared interest rate swap contracts (notional)	\$121,300,000
OTC total return swap contracts (notional)	\$11,200,000
Centrally cleared total return swap contracts (notional)	\$1,400,000
OTC credit default contracts (notional)	\$30,100,000

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
Credit contracts	Receivables	\$372,302	Payables	\$1,860,932
Interest rate contracts	Investments, Receivables, Net assets — Unrealized appreciation	4,141,940*	Payables, Net assets — Unrealized depreciation	3,541,969*
<b>Total</b>		<b>\$4,514,242</b>		<b>\$5,402,901</b>

\*Includes cumulative appreciation/depreciation of futures contracts and/or centrally cleared swaps 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 (see 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	Swaps	Total
Credit contracts	\$—	\$—	\$256,974	\$256,974
Interest rate contracts	653,888	22,525	(625,360)	\$51,053
<b>Total</b>	<b>\$653,888</b>	<b>\$22,525</b>	<b>\$(368,386)</b>	<b>\$308,027</b>

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	Options	Futures	Swaps	Total
Credit contracts	\$—	\$—	\$1,227,291	\$1,227,291
Interest rate contracts	(256,933)	14,777	162,326	\$(79,830)
<b>Total</b>	<b>\$(256,933)</b>	<b>\$14,777</b>	<b>\$1,389,617</b>	<b>\$1,147,461</b>

**Note 7 — New accounting pronouncements**

In March 2017, the Financial Accounting Standards Board issued Accounting Standards Update (ASU) No. 2017-08, *Receivables — Nonrefundable Fees and Other Costs* (Subtopic 310-20): *Premium Amortization on Purchased Callable Debt Securities*. The amendments in the ASU shorten the amortization period for certain callable debt securities held at a premium, to be amortized to the earliest call date. The ASU is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2018. The adoption of these amendments is not material to the financial statements.



# 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 had sufficiently low expenses that these expense limitations were not operative during their fiscal years ending in 2018. However, in the case of your fund, the second of the expense limitations applied during its fiscal year ending in 2018. Putnam Management and PSERV have agreed to maintain these expense limitations until at least April 30, 2021. In addition, Putnam Management contractually agreed to waive fees and/or reimburse expenses of your fund to the extent that expenses of the fund (excluding payments under the fund's distribution plans, brokerage, interest, taxes, investment-related expenses, extraordinary expenses, and acquired fund fees and expenses) would exceed an annual rate of 0.50% of its average net assets through at least April 30, 2021. During its fiscal year ending in 2018, your fund's expenses were reduced as a result of this expense limitation. 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 first 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 fourth 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) — General U.S. Government 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
4th	4th	4th

Over the one-year, three-year and five-year periods ended December 31, 2018, there were 56, 55 and 53 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 expressed concern about your fund's fourth quartile performance over the one-year, three-year and five-year periods ended December 31, 2018 and considered the circumstances that may have contributed to this disappointing performance. The Trustees noted that the fund had been repositioned from Putnam VT American Government Income Fund to Putnam VT Mortgage Securities Fund in April 2018.

The Trustees considered that Putnam Management remained confident in the fund's portfolio managers. The Trustees also 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.

As a general matter, the Trustees believe that cooperative efforts between the Trustees and Putnam Management represent the most effective way to address investment performance concerns that may arise from time to time. The Trustees noted that investors in the Putnam funds have, in effect, placed their trust in the Putnam organization, under the oversight

of the funds' Trustees, to make appropriate decisions regarding the management of the funds. Based on Putnam Management's willingness to take appropriate measures to address fund performance issues and Putnam Management's responsiveness to Trustee concerns about investment performance, the Trustees concluded that it continues to be advisable to seek change within Putnam Management to address performance shortcomings. In the Trustees' view, the alternative of engaging a new investment adviser for an underperforming fund, with all the attendant risks and disruptions, would not likely provide any greater assurance of improved investment performance.

**Brokerage and so -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 so 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, so 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 so 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](http://putnam.com) and on the Securities and Exchange Commission's (SEC) website at [www.sec.gov](http://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](http://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](http://www.sec.gov).

## Fund information

### Investment Manager

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

### Investment Sub-Advisor

Putnam Investments Limited  
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London, England SW1A 1ER

### Marketing Services

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Boston, MA 02110

### Investor Servicing Agent

Putnam Investments  
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Kansas City, MO 64121-9697  
1-800-225-1581

### Custodian

State Street Bank and Trust Company

### Legal Counsel

Ropes & Gray LLP

### Trustees

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Barbara M. Baumann  
Katinka Domotor y  
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.

