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Putnam Variable Trust

Putnam VT Mortgage Securities Fund

Semiannual report

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Message from the Trustees

August 5, 2022

Dear Shareholder:

Financial markets are reminding us that the journey to long-term returns often involves weathering periods of heightened volatility. Both stocks and bonds have experienced sharp declines in the first half of 2022. Inflation has shaken consumer confidence, while higher interest rates are helping to slow the U.S. economy. Globally, the Russia-Ukraine War, supply chain disruptions, and China's continued deceleration could prolong market volatility.

While this difficult environment may test investors' patience, you can be confident that Putnam portfolio managers are actively working for you. They are assessing risks while researching new and attractive investment opportunities for your fund.

We also have changes to the Board of Trustees to announce. In July 2022, we welcomed Jennifer Williams Murphy and Marie Pillai as new Trustees. Both have a wealth of investment advisory and executive management experience. We also want to thank our Trustees who retired from the Board on June 30, 2022: Paul Joskow served with us since 1997, and Ravi Akhoury joined the Board in 2009. We wish them well.

Thank you for investing with Putnam.

Respectfully yours,



Robert L. Reynolds
President and Chief Executive Officer
Putnam Investments



Kenneth R. Leibler
Chair, Board of Trustees

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

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 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 mortgage-backed securities may make the fund's net asset value more susceptible to economic, market, political, and other developments affecting the housing or real estate markets and the servicing of mortgage loans secured by real estate properties. The fund currently has significant investment exposure to commercial mortgage-backed securities. 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 time for a variety of reasons, including general economic, political, or financial market conditions; investor sentiment and market perceptions; government actions; geopolitical events or changes; and factors related to a specific issuer, geography, industry, or sector (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.

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

Performance summary (as of 6/30/22)

Investment objective

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

Net asset value June 30, 2022

Class IA: \$7.46	Class IB: \$7.43
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Annualized total return at net asset value (as of 6/30/22)

	Class IA shares (2/1/00)	Class IB shares (2/1/00)	Bloomberg U.S. MBS Index	Putnam VT Mortgage Securities Linked Benchmark
6 months	-6.31%	-6.42%	-8.78%	-8.78%
1 year	-8.91	-9.14	-9.03	-9.03
5 years	0.27	-0.01	0.36	0.16
10 years	0.76	0.51	1.18	0.73
Life of fund	3.90	3.65	4.01	3.75

Returns for periods of less than one year are not annualized.

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

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

The Putnam VT Mortgage Securities Linked Benchmark represents the performance of the Bloomberg Government Bond Index through April 29, 2018, and the performance of the Bloomberg U.S. MBS Index thereafter.

All Bloomberg indices are provided by Bloomberg Index Services Limited.

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

Portfolio composition

Commercial mortgage-backed securities	43.2%
Agency pass-through	39.3%
Agency collateralized mortgage obligations	36.7%
Non-agency residential mortgage-backed securities	21.0%
Asset-backed securities	2.9%
Cash and net other assets	11.8%

Allocations are shown as a percentage of the fund's net assets. Cash and net other assets, if any, represent the market value weights of cash, derivatives, short-term securities, and other unclassified assets in the portfolio. Summary information may differ from the portfolio schedule included in the financial statements due to the inclusion of derivative securities, any interest accruals, the use of different classifications of securities for presentation purposes, 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

AAA	43.2%
AA	4.4%
A	5.7%
BBB	11.2%
BB	3.2%
B	6.7%
CCC and below	3.1%
Not rated	10.7%
Cash and net other assets	11.8%

Credit qualities are shown as a percentage of the fund's net assets. A bond rated BBB or higher is considered investment grade. This table reflects the highest security rating provided by one or more of Standard & Poor's, Moody's, and Fitch. Ratings and portfolio credit quality will vary over time. Cash and net other assets, if any, represent the market value weights of cash, derivatives, and short-term securities in the portfolio. The fund itself has not been rated by an independent rating agency. Data in the table reflect a new calculation methodology put into effect on 6/30/22.

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 1/1/22 to 6/30/22. 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 12/31/21*	0.50%	0.75%
Total annual operating expenses for the fiscal year ended 12/31/21	0.78%	1.03%
Annualized expense ratio for the six-month period ended 6/30/22	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 4/30/23.

Expenses per \$1,000

	Expenses and value for a \$1,000 investment, assuming actual returns for the 6 months ended 6/30/22		Expenses and value for a \$1,000 investment, assuming a hypothetical 5% annualized return for the 6 months ended 6/30/22	
	Class IA	Class IB	Class IA	Class IB
Expenses paid per \$1,000*†	\$2.40	\$3.60	\$2.51	\$3.76
Ending value (after expenses)	\$936.90	\$935.80	\$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 6/30/22. 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 (181); and then dividing that result by the number of days in the year (365). Expenses based on a hypothetical 5% return are calculated by multiplying the expense ratio by the average account value for the six-month period; then multiplying the result by the number of days in the six-month period (181); and then dividing that result by the number of days in the year (365).

Your fund's managers



Portfolio Manager **Michael V. Salm** is Chief Investment Officer, 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 6/30/22 (Unaudited)

U.S. GOVERNMENT AND AGENCY MORTGAGE OBLIGATIONS (86.0%)*	Principal amount	Value
U.S. Government Guaranteed Mortgage Obligations (19.4%)		
Government National Mortgage Association Pass-Through Certificates		
6.50%, with due dates from 4/15/28 to 7/20/36	\$18,339	\$20,005
6.00%, with due dates from 4/15/28 to 11/20/38	45,561	49,371
5.50%, 4/20/38	62,306	66,368
5.00%, 3/20/50	16,713	17,249
4.70%, 8/20/67	66,179	66,777
4.50%, TBA, 7/1/51	2,000,000	2,029,070
4.50%, with due dates from 2/20/34 to 5/20/48	658,778	682,843
4.00%, TBA, 7/1/51	1,000,000	995,171
3.00%, TBA, 7/1/52	2,000,000	1,884,452
2.00%, TBA, 7/1/52	1,000,000	887,847
		6,699,153
U.S. Government Agency Mortgage Obligations (66.6%)		
Federal Home Loan Mortgage Corporation Pass-Through Certificates		
7.50%, with due dates from 9/1/30 to 7/1/31	7,559	8,303
7.00%, with due dates from 11/1/26 to 4/1/32	43,022	46,907
5.50%, 12/1/33	9,514	10,094
4.50%, with due dates from 7/1/44 to 8/1/44	76,051	78,361
4.00%, with due dates from 12/1/44 to 9/1/45	335,723	337,972
Federal National Mortgage Association Pass-Through Certificates		
7.50%, with due dates from 9/1/30 to 11/1/30	3,880	4,198
7.00%, with due dates from 12/1/28 to 12/1/35	206,775	227,547
6.50%, 9/1/36	6,448	7,140
6.00%, 1/1/38	36,486	39,935
5.50%, 1/1/38	206,201	219,009
5.00%, 2/1/39	5,300	5,570
4.50%, with due dates from 7/1/44 to 5/1/45	92,681	95,136
3.50%, 6/1/56	485,708	470,605
3.50%, 1/1/47	56,328	55,052
Uniform Mortgage-Backed Securities		
5.50%, TBA, 8/1/52	1,000,000	1,027,628
5.00%, TBA, 8/1/52	7,000,000	7,120,037
5.00%, TBA, 7/1/52	3,000,000	3,060,468
4.50%, TBA, 8/1/52	3,000,000	3,004,570
4.00%, TBA, 7/1/52	2,000,000	1,971,562
2.00%, TBA, 8/1/52	6,000,000	5,200,219
		22,990,313
Total U.S. government and agency mortgage obligations (cost \$29,377,322)		\$29,689,466

MORTGAGE-BACKED SECURITIES (77.5%)*	Principal amount	Value
Agency collateralized mortgage obligations (36.2%)		
Federal Home Loan Mortgage Corporation		
REMICs IFB Ser. 3408, Class EK, ((-4.024 x ICE LIBOR USD 1 Month) + 25.79%), 20.465%, 4/15/37	\$13,015	\$20,304
REMICs IFB Ser. 3072, Class SM, ((-3.667 x ICE LIBOR USD 1 Month) + 23.80%), 18.942%, 11/15/35	18,090	27,497
REMICs IFB Ser. 3065, Class DC, ((-3 x ICE LIBOR USD 1 Month) + 19.86%), 15.888%, 3/15/35	93,938	119,301
REMICs IFB Ser. 2990, Class LB, ((-2.556 x ICE LIBOR USD 1 Month) + 16.95%), 13.562%, 6/15/34	6,382	6,892

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Federal Home Loan Mortgage Corporation		
REMICs Ser. 5043, IO, 5.00%, 11/25/50	\$515,682	\$120,814
REMICs IFB Ser. 4436, Class SC, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.826%, 2/15/45	323,126	52,970
REMICs Ser. 4980, Class KI, IO, 4.50%, 6/25/50	818,440	169,150
REMICs Ser. 4122, Class TI, IO, 4.50%, 10/15/42	93,699	17,930
REMICs Ser. 4018, Class DI, IO, 4.50%, 7/15/41	72,115	5,088
REMICs IFB Ser. 5003, Class DS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.476%, 8/25/50	728,898	112,573
REMICs IFB Ser. 4915, Class SD, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.426%, 9/25/49	565,219	82,432
REMICs IFB Ser. 4933, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.00%), 4.376%, 12/25/49	727,263	112,366
REMICs Ser. 5119, Class IC, IO, 4.00%, 6/25/51	489,498	93,406
REMICs Ser. 4953, Class AI, IO, 4.00%, 2/25/50	846,559	172,546
REMICs Ser. 4425, IO, 4.00%, 1/15/45	120,608	18,793
REMICs Ser. 4425, Class EI, IO, 4.00%, 1/15/45	203,600	33,802
REMICs Ser. 4452, Class QI, IO, 4.00%, 11/15/44	158,190	32,243
REMICs Ser. 4213, Class GI, IO, 4.00%, 11/15/41	101,565	3,796
REMICs Ser. 4019, Class JI, IO, 4.00%, 5/15/41	112,157	8,133
REMICs Ser. 5077, Class NI, IO, 3.50%, 2/25/51	853,871	149,229
REMICs Ser. 5065, Class DI, IO, 3.50%, 1/25/51	1,305,688	203,717
REMICs Ser. 5050, Class IM, IO, 3.50%, 10/25/50	653,837	125,234
REMICs Ser. 5080, Class IQ, IO, 3.50%, 4/25/50	827,152	170,182
REMICs Ser. 4165, Class AI, IO, 3.50%, 2/15/43	117,743	18,080
REMICs Ser. 4136, Class IQ, IO, 3.50%, 11/15/42	217,570	31,855
Strips Ser. 304, Class C37, IO, 3.50%, 12/15/27	78,770	3,501
REMICs Ser. 5071, Class IV, IO, 3.00%, 12/25/50	1,183,818	213,911
REMICs Ser. 4150, Class DI, IO, 3.00%, 1/15/43	183,489	24,110
REMICs Ser. 4141, Class PI, IO, 3.00%, 12/15/42	170,493	21,339
REMICs Ser. 4158, Class TI, IO, 3.00%, 12/15/42	349,729	26,695
REMICs Ser. 4165, Class TI, IO, 3.00%, 12/15/42	365,706	29,892
REMICs Ser. 4171, Class NI, IO, 3.00%, 6/15/42	194,194	20,033
REMICs Ser. 4183, Class MI, IO, 3.00%, 2/15/42	107,261	7,412
REMICs Ser. 4201, Class JI, IO, 3.00%, 12/15/41	113,086	5,074
REMICs Ser. 3391, PO, zero %, 4/15/37	3,141	2,764
Strips Ser. 315, PO, zero %, 9/15/43	448,762	352,913
Federal National Mortgage Association		
REMICs IFB Ser. 06-62, Class PS, ((-6 x ICE LIBOR USD 1 Month) + 39.90%), 30.159%, 7/25/36	9,507	17,587
REMICs IFB Ser. 06-8, Class HP, ((-3.667 x ICE LIBOR USD 1 Month) + 24.57%), 18.614%, 3/25/36	16,787	20,159
REMICs IFB Ser. 07-53, Class SP, ((-3.667 x ICE LIBOR USD 1 Month) + 24.20%), 18.247%, 6/25/37	18,413	29,093
REMICs IFB Ser. 08-24, Class SP, ((-3.667 x ICE LIBOR USD 1 Month) + 23.28%), 17.33%, 2/25/38	49,980	53,440
REMICs IFB Ser. 05-106, Class JC, ((-3.101 x ICE LIBOR USD 1 Month) + 20.12%), 15.09%, 12/25/35	24,173	32,634
REMICs IFB Ser. 11-4, Class CS, ((-2 x ICE LIBOR USD 1 Month) + 12.90%), 9.653%, 5/25/40	29,979	34,282
REMICs Ser. 15-58, Class KI, IO, 6.00%, 3/25/37	367,270	71,026
REMICs Ser. 16-3, Class MI, IO, 5.50%, 2/25/46	225,979	38,726
REMICs Ser. 15-86, Class MI, IO, 5.50%, 11/25/45	304,388	54,884
REMICs Ser. 10-109, Class IM, IO, 5.50%, 9/25/40	601,884	86,221
REMICs Ser. 18-51, Class BI, IO, 5.50%, 7/25/38	412,951	45,056

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Federal National Mortgage Association		
REMICs Ser. 17-19, Class IH, IO, 5.00%, 3/25/47	\$347,446	\$54,480
REMICs Ser. 12-151, Class IM, IO, 5.00%, 4/25/42	266,899	38,212
REMICs IFB Ser. 11-123, Class KS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.60%), 4.976%, 10/25/41	21,663	2,679
REMICs IFB Ser. 18-47, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.25%), 4.626%, 7/25/48	337,743	41,178
REMICs IFB Ser. 18-36, Class SD, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.25%), 4.626%, 6/25/48	886,011	100,744
REMICs IFB Ser. 18-20, Class SB, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.25%), 4.626%, 3/25/48	393,388	50,393
REMICs IFB Ser. 18-38, Class SP, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.20%), 4.576%, 6/25/48	812,444	109,344
REMICs IFB Ser. 17-104, Class SL, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.526%, 1/25/48	567,269	76,842
REMICs IFB Ser. 16-81, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.526%, 11/25/46	1,487,269	169,730
REMICs Ser. 20-31, IO, 4.50%, 5/25/50	1,375,243	233,568
REMICs Ser. 17-66, IO, 4.50%, 9/25/47	455,493	78,000
REMICs Ser. 17-32, Class IP, IO, 4.50%, 5/25/47	457,686	85,344
REMICs IFB Ser. 20-41, Class SE, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.476%, 6/25/50	1,501,877	184,040
REMICs IFB Ser. 16-83, Class BS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.476%, 11/25/46	1,030,183	127,048
REMICs IFB Ser. 16-85, Class SL, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.476%, 11/25/46	1,392,886	164,081
REMICs IFB Ser. 16-50, Class SM, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.476%, 8/25/46	665,980	73,600
REMICs IFB Ser. 19-45, Class SD, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.426%, 8/25/49	350,816	43,957
REMICs IFB Ser. 16-8, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.426%, 3/25/46	875,500	121,222
REMICs IFB Ser. 19-71, Class CS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.00%), 4.376%, 11/25/49	70,725	12,211
REMICs Ser. 15-83, IO, 4.00%, 10/25/43	209,878	30,652
REMICs Ser. 12-62, Class MI, IO, 4.00%, 3/25/41	44,454	1,947
REMICs Ser. 12-104, Class HI, IO, 4.00%, 9/25/27	145,556	8,165
REMICs Ser. 21-25, Class IJ, IO, 3.50%, 5/25/51	537,503	89,505
REMICs Ser. 20-62, Class MI, IO, 3.50%, 5/25/49	1,323,037	240,221
REMICs Ser. 16-70, Class QI, IO, 3.50%, 10/25/46	391,915	57,960
REMICs Ser. 15-10, Class AI, IO, 3.50%, 8/25/43	69,855	2,169
REMICs Ser. 13-22, Class PI, IO, 3.50%, 10/25/42	146,759	21,607
REMICs Ser. 12-114, Class NI, IO, 3.50%, 10/25/41	189,393	12,171
REMICs Ser. 20-96, IO, 3.00%, 1/25/51	975,896	148,404
REMICs Ser. 13-55, Class IK, IO, 3.00%, 4/25/43	111,457	14,127
REMICs Ser. 13-6, Class JI, IO, 3.00%, 2/25/43	296,279	36,650
REMICs Ser. 12-151, Class PI, IO, 3.00%, 1/25/43	130,576	16,714
REMICs Ser. 12-145, Class TI, IO, 3.00%, 11/25/42	52,465	2,139
REMICs Ser. 13-55, Class PI, IO, 3.00%, 5/25/42	96,754	4,203
REMICs Ser. 13-23, Class PI, IO, 3.00%, 10/25/41	23,034	158
REMICs Ser. 13-30, Class IP, IO, 3.00%, 10/25/41	36,623	301
REMICs Ser. 13-23, Class LI, IO, 3.00%, 6/25/41	36,750	468
REMICs Ser. 14-28, Class AI, IO, 3.00%, 3/25/40	75,425	1,413
REMICs Ser. 21-12, Class NI, IO, 2.50%, 3/25/51	772,896	128,370

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Federal National Mortgage Association		
Trust FRB Ser. 03-W8, Class 3F2, (ICE LIBOR USD 1 Month + 0.35%), 1.974%, 5/25/42	\$2,122	\$2,107
REMICs FRB Ser. 07-95, Class A3, (ICE LIBOR USD 1 Month + 0.25%), 1.256%, 8/27/36	1,868,618	1,633,133
REMICs Ser. 08-53, Class DO, PO, zero%, 7/25/38	15,530	13,198
Government National Mortgage Association		
Ser. 16-75, Class LI, IO, 6.00%, 1/20/40	213,857	38,311
Ser. 14-137, Class ID, IO, 5.50%, 9/16/44	226,812	40,220
IFB Ser. 13-182, Class SP, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.70%), 5.105%, 12/20/43	142,821	18,544
IFB Ser. 11-156, Class SK, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.60%), 5.005%, 4/20/38	432,737	63,398
Ser. 15-89, Class LI, IO, 5.00%, 12/20/44	323,037	64,216
Ser. 14-133, Class IP, IO, 5.00%, 9/16/44	157,288	29,713
Ser. 14-76, IO, 5.00%, 5/20/44	180,320	34,748
Ser. 13-51, Class QI, IO, 5.00%, 2/20/43	142,566	19,440
Ser. 13-3, Class IT, IO, 5.00%, 1/20/43	77,990	16,674
Ser. 13-6, Class OI, IO, 5.00%, 1/20/43	59,115	11,860
Ser. 10-35, Class UI, IO, 5.00%, 3/20/40	84,446	17,376
Ser. 10-9, Class UI, IO, 5.00%, 1/20/40	272,836	57,809
Ser. 09-121, Class UI, IO, 5.00%, 12/20/39	214,169	42,975
IFB Ser. 20-112, Class MS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.30%), 4.705%, 8/20/50	1,680,773	273,647
IFB Ser. 19-35, Class SE, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.641%, 1/16/44	415,260	40,928
IFB Ser. 19-158, Class AS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.641%, 9/16/43	661,291	83,040
IFB Ser. 18-89, Class LS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.20%), 4.605%, 6/20/48	283,401	30,413
IFB Ser. 17-156, Class SL, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.20%), 4.605%, 10/20/47	476,450	68,490
IFB Ser. 13-87, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.20%), 4.605%, 6/20/43	676,407	83,715
IFB Ser. 18-148, Class GS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.591%, 2/16/46	369,015	44,613
IFB Ser. 19-56, Class SK, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.15%), 4.555%, 5/20/49	477,492	48,940
IFB Ser. 19-100, Class JS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.10%), 4.505%, 8/20/49	336,924	35,267
Ser. 18-1, IO, 4.50%, 1/20/48	303,171	51,292
Ser. 13-34, Class HI, IO, 4.50%, 3/20/43	196,029	34,277
Ser. 13-39, Class IJ, IO, 4.50%, 3/20/43	540,538	97,919
Ser. 12-129, IO, 4.50%, 11/16/42	179,598	34,264
Ser. 10-35, Class AI, IO, 4.50%, 3/20/40	185,061	31,517
Ser. 10-35, Class DI, IO, 4.50%, 3/20/40	111,220	20,250
Ser. 10-35, Class QI, IO, 4.50%, 3/20/40	65,166	11,412
Ser. 10-9, Class QI, IO, 4.50%, 1/20/40	52,907	9,994
Ser. 09-121, Class BI, IO, 4.50%, 12/16/39	74,042	13,851
Ser. 09-121, Class CI, IO, 4.50%, 12/16/39	275,619	49,035
IFB Ser. 20-15, Class CS, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.455%, 2/20/50	25,713	2,362
IFB Ser. 20-7, Class SK, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.455%, 1/20/50	656,084	76,732
IFB Ser. 19-125, Class SG, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.455%, 10/20/49	686,400	125,509
IFB Ser. 19-110, Class SQ, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.05%), 4.455%, 9/20/49	788,422	79,324
IFB Ser. 19-121, Class SD, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.00%), 4.405%, 10/20/49	281,366	50,156

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Government National Mortgage Association		
IFB Ser. 20-47, Class SA, IO, ((-1 x ICE LIBOR USD 1 Month) + 6.00%), 4.405%, 5/20/44	\$548,222	\$64,416
Ser. 15-53, Class MI, IO, 4.00%, 4/16/45	228,146	44,945
Ser. 14-100, Class NI, IO, 4.00%, 6/20/43	172,122	11,467
Ser. 13-67, Class IP, IO, 4.00%, 4/16/43	352,673	56,124
Ser. 13-165, Class IL, IO, 4.00%, 3/20/43	58,302	8,968
Ser. 12-56, Class IB, IO, 4.00%, 4/20/42	178,326	30,611
Ser. 12-38, Class MI, IO, 4.00%, 3/20/42	714,242	125,271
Ser. 14-104, IO, 4.00%, 3/20/42	208,762	26,230
Ser. 14-182, Class BI, IO, 4.00%, 1/20/39	335,650	36,737
Ser. 16-H24, Class KI, IO, 3.524%, 11/20/66 W	477,032	28,943
Ser. 20-175, Class JI, IO, 3.50%, 11/20/50	1,824,448	319,602
Ser. 13-79, Class PI, IO, 3.50%, 4/20/43	92,728	10,834
Ser. 15-168, Class IG, IO, 3.50%, 3/20/43	115,764	14,950
Ser. 13-37, Class JI, IO, 3.50%, 1/20/43	60,959	6,963
Ser. 13-27, Class PI, IO, 3.50%, 12/20/42	31,430	3,786
Ser. 12-136, IO, 3.50%, 11/20/42	284,923	42,198
Ser. 18-127, Class IA, IO, 3.50%, 4/20/42	250,993	16,859
Ser. 14-102, Class IG, IO, 3.50%, 3/16/41	49,400	2,658
Ser. 15-52, Class KI, IO, 3.50%, 11/20/40	142,066	10,698
Ser. 15-24, Class AI, IO, 3.50%, 12/20/37	64,415	845
Ser. 21-188, Class IW, IO, 3.00%, 10/20/51	658,614	117,509
Ser. 20-176, Class BI, IO, 3.00%, 11/20/50	853,335	133,803
Ser. 14-174, Class AI, IO, 3.00%, 11/16/29	213,202	13,432
Ser. 17-H14, Class LI, IO, 2.855%, 6/20/67 W	491,691	29,821
Ser. 15-H14, Class AI, IO, 2.761%, 6/20/65 W	1,415,981	64,350
Ser. 16-H13, Class IK, IO, 2.651%, 6/20/66 W	740,927	62,772
Ser. 21-8, Class IP, IO, 2.50%, 1/20/51	1,430,009	195,371
Ser. 20-138, Class IB, IO, 2.50%, 9/20/50	1,313,877	168,522
Ser. 15-H13, Class AI, IO, 2.444%, 6/20/65 W	760,674	32,387
Ser. 16-H04, Class HI, IO, 2.381%, 7/20/65 W	558,335	20,156
Ser. 16-H27, Class GI, IO, 2.334%, 12/20/66 W	1,017,091	66,451
Ser. 17-H04, Class BI, IO, 2.321%, 2/20/67 W	598,881	34,154
Ser. 16-H17, Class DI, IO, 2.279%, 7/20/66 W	873,853	32,374
Ser. 16-H07, Class PI, IO, 2.278%, 3/20/66 W	1,416,258	104,389
Ser. 17-H25, Class CI, IO, 2.228%, 12/20/67 W	1,061,595	72,314
Ser. 17-H20, Class AI, IO, 2.212%, 10/20/67 W	1,433,472	100,343
Ser. 18-H01, Class XI, IO, 2.183%, 1/20/68 W	813,125	60,933
Ser. 17-H14, Class JI, IO, 2.17%, 6/20/67 W	373,109	31,864
Ser. 16-H24, IO, 2.137%, 9/20/66 W	647,769	48,646
Ser. 17-H06, Class MI, IO, 2.097%, 2/20/67 W	985,722	50,010
Ser. 15-H24, Class HI, IO, 2.08%, 9/20/65 W	341,761	7,479
Ser. 18-H02, Class IM, IO, 2.072%, 2/20/68 W	554,310	38,741
Ser. 16-H06, Class HI, IO, 2.063%, 2/20/66 W	717,932	34,601
Ser. 17-H08, Class NI, IO, 1.955%, 3/20/67 W	599,607	27,582
Ser. 15-H10, Class HI, IO, 1.951%, 4/20/65 W	1,340,903	49,882
Ser. 15-H23, Class TI, IO, 1.923%, 9/20/65 W	692,546	38,159
Ser. 17-H08, Class EI, IO, 1.912%, 2/20/67 W	828,010	47,120
Ser. 17-H08, Class GI, IO, 1.904%, 2/20/67 W	525,027	45,181
Ser. 17-H25, IO, 1.901%, 11/20/67 W	636,425	38,981
Ser. 17-H03, Class KI, IO, 1.893%, 1/20/67 W	962,585	79,606
FRB Ser. 15-H16, Class XI, IO, 1.867%, 7/20/65 W	537,256	27,669
FRB Ser. 16-H19, Class AI, IO, 1.833%, 9/20/66 W	1,322,265	64,136
Ser. 16-H23, Class NI, IO, 1.809%, 10/20/66 W	1,169,412	47,244
Ser. 17-H09, IO, 1.772%, 4/20/67 W	587,205	25,637
Ser. 16-H06, Class DI, IO, 1.768%, 7/20/65 W	955,591	24,979
Ser. 14-H25, Class BI, IO, 1.684%, 12/20/64 W	763,401	28,566
Ser. 16-H24, Class JI, IO, 1.679%, 11/20/66 W	378,391	19,903

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Agency collateralized mortgage obligations cont.		
Government National Mortgage Association		
Ser. 17-H10, Class MI, IO, 1.623%, 4/20/67 W	\$675,164	\$28,424
Ser. 15-H20, Class CI, IO, 1.529%, 8/20/65 W	976,709	58,798
Ser. 16-H03, Class AI, IO, 1.462%, 1/20/66 W	918,475	29,383
Ser. 16-H10, Class AI, IO, 1.411%, 4/20/66 W	857,347	21,843
Ser. 15-H25, Class BI, IO, 1.379%, 10/20/65 W	598,525	25,856
Ser. 15-H22, Class AI, IO, 1.355%, 9/20/65 W	1,027,658	46,964
Ser. 16-H04, Class KI, IO, 1.32%, 2/20/66 W	981,298	21,711
Ser. 16-H18, Class QI, IO, 1.293%, 6/20/66 W	806,213	44,085
FRB Ser. 11-H07, Class FI, IO, 1.245%, 2/20/61 W	918,281	23,967
Ser. 15-H04, Class AI, IO, 1.214%, 12/20/64 W	669,698	18,259
Ser. 14-H21, Class AI, IO, 1.111%, 10/20/64 W	957,872	36,310
		12,487,543
Commercial mortgage-backed securities (20.3%)		
BANK 144A Ser. 18-BN11, Class D, 3.00%, 3/15/61	90,000	67,842
Barclays Commercial Mortgage Trust 144A		
Ser. 19-C4, Class E, 3.25%, 8/15/52	111,000	81,665
Ser. 19-C3, Class D, 3.00%, 5/15/52	65,000	47,405
Bear Stearns Commercial Mortgage Securities Trust FRB Ser. 07-T26, Class AJ, 5.566%, 1/12/45 W		
	697	690
Benchmark Mortgage Trust FRB Ser. 18-B1, Class C, 4.238%, 1/15/51 W		
	47,000	42,684
Benchmark Mortgage Trust 144A		
FRB Ser. 18-B3, Class D, 3.187%, 4/10/51 W	77,000	60,466
Ser. 19-B13, Class D, 2.50%, 8/15/57	152,000	109,747
BWAY Mortgage Trust 144A FRB Ser. 22-26BW, Class F, 5.029%, 2/10/44 W		
	138,000	103,222
CD Commercial Mortgage Trust 144A		
Ser. 17-CD3, Class D, 3.25%, 2/10/50	140,000	105,924
Ser. 19-CD8, Class D, 3.00%, 8/15/57	84,000	58,867
COMM Mortgage Trust		
FRB Ser. 12-CR1, Class C, 5.458%, 5/15/45 W	68,000	66,980
FRB Ser. 14-UBS2, Class C, 5.113%, 3/10/47 W	61,000	59,499
FRB Ser. 14-CR16, Class C, 5.082%, 4/10/47 W	61,000	59,125
FRB Ser. 18-COR3, Class C, 4.712%, 5/10/51 W	67,000	61,195
FRB Ser. 15-CR23, Class C, 4.428%, 5/10/48 W	72,000	68,198
FRB Ser. 15-CR26, Class D, 3.621%, 10/10/48 W	165,000	141,973
COMM Mortgage Trust 144A		
FRB Ser. 13-LC13, Class D, 5.425%, 8/10/46 W	101,000	93,483
FRB Ser. 14-CR17, Class D, 5.007%, 5/10/47 W	228,000	203,720
FRB Ser. 14-CR17, Class E, 5.007%, 5/10/47 W	124,000	87,214
FRB Ser. 13-CR6, Class D, 4.222%, 3/10/46 W	160,000	155,563
Ser. 17-COR2, Class D, 3.00%, 9/10/50	45,000	36,266
FRB Ser. 18-COR3, Class D, 2.962%, 5/10/51 W	47,000	33,570
CSAIL Commercial Mortgage Trust FRB Ser. 15-C1, Class C, 4.402%, 4/15/50 W		
	124,000	110,370
CSAIL Commercial Mortgage Trust 144A		
FRB Ser. 18-C14, Class D, 5.087%, 11/15/51 W	73,000	60,158
Ser. 19-C17, Class D, 2.50%, 9/15/52	123,000	87,409
DBUBS Mortgage Trust 144A FRB Ser. 11-LC3A, Class D, 5.549%, 8/10/44 W		
	125,869	120,116
FREMIF Mortgage Trust 144A FRB Ser. 19-KF65, Class B, (ICE LIBOR USD 1 Month + 2.40%), 3.52%, 7/25/29		
	119,978	113,133
GS Mortgage Securities Corp., II 144A FRB Ser. 13-GC10, Class D, 4.543%, 2/10/46 W		
	154,000	146,597
GS Mortgage Securities Trust		
FRB Ser. 14-GC18, Class C, 5.226%, 1/10/47 W	155,000	113,794
FRB Ser. 14-GC22, Class C, 4.843%, 6/10/47 W	68,000	65,882
FRB Ser. 15-GC30, Class C, 4.205%, 5/10/50 W	40,000	37,331

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Commercial mortgage-backed securities cont.		
GS Mortgage Securities Trust 144A		
FRB Ser. 14-GC24, Class D, 4.665%, 9/10/47 W	\$292,000	\$202,443
Ser. 12-GCJ9, Class C, 4.448%, 11/10/45 W	139,000	137,903
FRB Ser. 13-GC13, Class D, 4.207%, 7/10/46 W	105,000	46,174
Ser. 16-GS2, Class D, 2.753%, 5/10/49	67,000	54,348
JPMBB Commercial Mortgage Securities Trust		
FRB Ser. 14-C22, Class C, 4.702%, 9/15/47 W	125,000	115,607
JPMBB Commercial Mortgage Securities Trust 144A		
FRB Ser. C14, Class D, 4.699%, 8/15/46 W	229,000	129,618
FRB Ser. 14-C25, Class D, 4.086%, 11/15/47 W	139,000	105,959
JPMDB Commercial Mortgage Securities Trust		
Ser. 17-C5, Class C, 4.512%, 3/15/50 W	88,000	74,515
JPMorgan Chase Commercial Mortgage Securities Trust		
Ser. 06-LDP9, Class AMS, 5.337%, 5/15/47	126,504	116,125
FRB Ser. 13-LC11, Class D, 4.303%, 4/15/46 W	168,000	129,886
Ser. 13-LC11, Class B, 3.499%, 4/15/46	49,000	47,928
JPMorgan Chase Commercial Mortgage Securities Trust 144A		
FRB Ser. 11-C3, Class D, 5.708%, 2/15/46 W	145,000	105,793
FRB Ser. 12-C8, Class C, 4.933%, 10/15/45 W	200,000	198,397
Morgan Stanley Bank of America Merrill Lynch Trust		
FRB Ser. 14-C14, Class C, 5.212%, 2/15/47 W	36,000	35,712
FRB Ser. 15-C22, Class C, 4.348%, 4/15/48 W	81,000	74,621
FRB Ser. 13-C9, Class C, 4.155%, 5/15/46 W	58,000	56,092
Morgan Stanley Bank of America Merrill Lynch Trust 144A		
FRB Ser. 14-C15, Class D, 5.056%, 4/15/47 W	180,000	171,629
FRB Ser. 15-C23, Class D, 4.281%, 7/15/50 W	198,000	179,235
FRB Ser. 13-C10, Class F, 4.209%, 7/15/46 W	141,000	31,725
Morgan Stanley Capital I Trust 144A FRB		
Ser. 11-C3, Class E, 5.254%, 7/15/49 W	148,000	130,555
Multifamily Connecticut Avenue Securities Trust 144A FRB Ser. 19-01, Class M10, 4.874%, 10/15/49		
	446,000	414,193
RIAL Issuer, Ltd. 144A FRB Ser. 22-FL8, Class B, 4.727%, 1/19/37		
	109,000	107,910
UBS Commercial Mortgage Trust		
FRB Ser. 18-C13, Class C, 5.093%, 10/15/51 W	54,000	50,242
Ser. 19-C17, Class C, 3.758%, 10/15/52 W	151,000	135,133
UBS Commercial Mortgage Trust 144A		
FRB Ser. 12-C1, Class D, 6.659%, 5/10/45 W	39,318	35,454
FRB Ser. 12-C1, Class E, 5.00%, 5/10/45 W	289,000	112,710
UBS-Barclays Commercial Mortgage Trust 144A		
FRB Ser. 12-C4, Class D, 4.606%, 12/10/45 W	109,000	102,718
UBS-Citigroup Commercial Mortgage Trust 144A		
FRB Ser. 11-C1, Class D, 6.663%, 1/10/45 W	181,000	160,185
Wells Fargo Commercial Mortgage Trust		
FRB Ser. 18-C46, Class C, 5.155%, 8/15/51 W	51,000	48,011
FRB Ser. 16-NXS5, Class D, 5.149%, 1/15/59 W	152,000	139,217
FRB Ser. 15-C29, Class D, 4.355%, 6/15/48 W	56,000	50,611
Ser. 19-C50, Class C, 4.345%, 5/15/52	59,000	51,402
FRB Ser. 20-C57, Class C, 4.157%, 8/15/53 W	49,000	43,895
Wells Fargo Commercial Mortgage Trust 144A		
Ser. 12-LC5, Class D, 4.869%, 10/15/45 W	71,000	70,351
FRB Ser. 15-C30, Class D, 4.648%, 9/15/58 W	133,000	120,488
Ser. 16-C33, Class D, 3.123%, 3/15/59	134,000	113,816
Ser. 19-C54, Class D, 2.50%, 12/15/52	56,000	45,319

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Commercial mortgage-backed securities cont.		
WF-RBS Commercial Mortgage Trust Ser. 14-C21, Class C, 4.234%, 8/15/47 W		
	\$109,000	\$103,506
WF-RBS Commercial Mortgage Trust 144A		
FRB Ser. 11-C4, Class C, 5.026%, 6/15/44 W	89,069	84,749
FRB Ser. 12-C9, Class D, 4.981%, 11/15/45 W	290,000	283,918
		7,018,181
Residential mortgage-backed securities (non-agency) (21.0%)		
American Home Mortgage Investment Trust FRB		
Ser. 07-1, Class GA1C, (ICE LIBOR USD 1 Month + 0.19%), 1.814%, 5/25/47	406,999	230,224
Bayview Financial Mortgage Pass-Through Trust		
Ser. 06-C, Class 1A3, 6.528%, 11/28/36	285,254	274,940
Bellemeade Re, Ltd. 144A FRB Ser. 17-1, Class M2, (ICE LIBOR USD 1 Month + 3.35%), 4.974%, 10/25/27 (Bermuda)		
	47,680	47,508
Carrington Mortgage Loan Trust FRB		
Ser. 06-NC2, Class A4, (ICE LIBOR USD 1 Month + 0.24%), 1.864%, 6/25/36	490,000	471,698
Chevy Chase Funding, LLC Mortgage-Backed Certificates 144A FRB Ser. 06-4A, Class A2, (ICE LIBOR USD 1 Month + 0.18%), 1.804%, 11/25/47		
	149,412	130,670
Citigroup Mortgage Loan Trust, Inc. FRB		
Ser. 07-AR5, Class 1A1A, 3.041%, 4/25/37 W	180,946	161,080
Countrywide Alternative Loan Trust FRB		
Ser. 06-OA19, Class A1, (ICE LIBOR USD 1 Month + 0.18%), 1.792%, 2/20/47	184,950	142,858
Countrywide Asset-Backed Certificates FRB		
Ser. 07-10, Class 1A1, (ICE LIBOR USD 1 Month + 0.18%), 1.804%, 6/25/47	244,260	228,909
Eagle Re, Ltd. 144A FRB Ser. 20-1, Class B1, (ICE LIBOR USD 1 Month + 2.85%), 4.474%, 1/25/30		
	182,000	165,431
Federal Home Loan Mortgage Corporation		
Structured Agency Credit Risk Debt FRN		
Ser. 15-HQA1, Class B, (ICE LIBOR USD 1 Month + 8.80%), 10.424%, 3/25/28	246,804	241,965
Structured Agency Credit Risk Debt FRN		
Ser. 16-DNA3, Class M3, (ICE LIBOR USD 1 Month + 5.00%), 6.624%, 12/25/28	175,538	182,994
Structured Agency Credit Risk Debt FRN		
Ser. 17-DNA2, Class M2, (ICE LIBOR USD 1 Month + 3.45%), 5.074%, 10/25/29	212,210	214,360
Seasoned Credit Risk Transfer Trust Ser. 19-3, Class M, 4.75%, 10/25/58 W		
	50,000	47,014
Structured Agency Credit Risk Debt FRN		
Ser. 18-HQA1, Class M2, (ICE LIBOR USD 1 Month + 2.30%), 3.924%, 9/25/30	196,476	195,111
Federal Home Loan Mortgage Corporation 144A		
Structured Agency Credit Risk Trust FRB		
Ser. 19-HQA1, Class B2, (ICE LIBOR USD 1 Month + 12.25%), 13.874%, 2/25/49	50,000	53,692
Structured Agency Credit Risk Trust FRB		
Ser. 18-HQA2, Class B2, (ICE LIBOR USD 1 Month + 11.00%), 12.624%, 10/25/48	413,000	439,553
Structured Agency Credit Risk Trust REMICs		
FRB Ser. 20-DNA5, Class B2, (US 30 Day Average SOFR + 11.50%), 12.426%, 10/25/50	56,000	66,506
Structured Agency Credit Risk Trust FRB		
Ser. 19-DNA1, Class B2, (ICE LIBOR USD 1 Month + 10.75%), 12.374%, 1/25/49	32,000	34,047
Structured Agency Credit Risk Trust FRB		
Ser. 19-DNA2, Class B2, (ICE LIBOR USD 1 Month + 10.50%), 12.124%, 3/25/49	114,000	121,134

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Residential mortgage-backed securities (non-agency) cont.		
Federal Home Loan Mortgage Corporation 144A		
Structured Agency Credit Risk Trust REMICs FRB Ser. 20-DNA4, Class B2, (ICE LIBOR USD 1 Month + 10.00%), 11.624%, 8/25/50	\$65,000	\$76,050
Structured Agency Credit Risk Trust REMICs FRB Ser. 20-HQA3, Class B2, (ICE LIBOR USD 1 Month + 10.00%), 11.624%, 7/25/50	64,000	73,280
Structured Agency Credit Risk Trust FRB Ser. 19-DNA3, Class B2, (ICE LIBOR USD 1 Month + 8.15%), 9.774%, 7/25/49	34,000	33,860
Structured Agency Credit Risk Trust FRB Ser. 18-DNA3, Class B2, (ICE LIBOR USD 1 Month + 7.75%), 9.374%, 9/25/48	431,000	424,135
Structured Agency Credit Risk Trust FRB Ser. 19-DNA1, Class B1, (ICE LIBOR USD 1 Month + 4.65%), 6.274%, 1/25/49	95,000	96,084
Structured Agency Credit Risk Trust FRB Ser. 18-HQA2, Class B1, (ICE LIBOR USD 1 Month + 4.25%), 5.874%, 10/25/48	144,000	142,335
Seasoned Credit Risk Transfer Trust Ser. 19-2, Class M, 4.75%, 8/25/58 W	69,000	61,829
Seasoned Credit Risk Transfer Trust FRB Ser. 18-3, Class 3, 4.75%, 8/25/57 W	70,000	65,275
Structured Agency Credit Risk Trust REMICs FRB Ser. 20-HQA2, Class M2, (ICE LIBOR USD 1 Month + 3.10%), 4.724%, 3/25/50	31,637	31,382
Federal National Mortgage Association		
Connecticut Avenue Securities FRB Ser. 16-C03, Class 1B, (ICE LIBOR USD 1 Month + 11.75%), 13.374%, 10/25/28	154,999	173,044
Connecticut Avenue Securities FRB Ser. 16-C02, Class 1M2, (ICE LIBOR USD 1 Month + 6.00%), 7.624%, 9/25/28	25,049	26,015
Connecticut Avenue Securities FRB Ser. 15-C04, Class 1M2, (ICE LIBOR USD 1 Month + 5.70%), 7.324%, 4/25/28	32,089	33,501
Connecticut Avenue Securities FRB Ser. 16-C03, Class 1M2, (ICE LIBOR USD 1 Month + 5.30%), 6.924%, 10/25/28	44,965	46,750
Connecticut Avenue Securities FRB Ser. 18-C04, Class 2B1, (ICE LIBOR USD 1 Month + 4.50%), 6.124%, 12/25/30	371,000	374,750
Connecticut Avenue Securities FRB Ser. 17-C07, Class 2B1, (ICE LIBOR USD 1 Month + 4.45%), 6.074%, 5/25/30	158,000	159,011
Connecticut Avenue Securities FRB Ser. 16-C05, Class 2M2, (ICE LIBOR USD 1 Month + 4.45%), 6.074%, 1/25/29	12,776	13,312
Connecticut Avenue Securities FRB Ser. 18-C05, Class 1B1, (ICE LIBOR USD 1 Month + 4.25%), 5.874%, 1/25/31	90,000	89,449
Connecticut Avenue Securities FRB Ser. 17-C06, Class 1B1, (ICE LIBOR USD 1 Month + 4.15%), 5.774%, 2/25/30	200,000	202,340
Connecticut Avenue Securities FRB Ser. 18-C06, Class 2B1, (ICE LIBOR USD 1 Month + 4.10%), 5.724%, 3/25/31	59,000	58,077
Connecticut Avenue Securities FRB Ser. 17-C05, Class 1B1, (ICE LIBOR USD 1 Month + 3.60%), 5.224%, 1/25/30	92,000	90,371
Connecticut Avenue Securities FRB Ser. 18-C01, Class 1B1, (ICE LIBOR USD 1 Month + 3.55%), 5.174%, 7/25/30	108,000	106,448

MORTGAGE-BACKED SECURITIES (77.5%)* cont.	Principal amount	Value
Residential mortgage-backed securities (non-agency) cont.		
Federal National Mortgage Association		
Connecticut Avenue Securities FRB Ser. 17-C01, Class 1M2, (ICE LIBOR USD 1 Month + 3.55%), 5.174%, 7/25/29	\$104,118	\$106,934
Connecticut Avenue Securities FRB Ser. 17-C03, Class 1M2, (ICE LIBOR USD 1 Month + 3.00%), 4.624%, 10/25/29	110,303	112,342
Connecticut Avenue Securities FRB Ser. 18-C01, Class 1M2, (ICE LIBOR USD 1 Month + 2.25%), 3.874%, 7/25/30	13,720	13,819
Federal National Mortgage Association 144A		
Connecticut Avenue Securities Trust FRB Ser. 19-R01, Class 2B1, (ICE LIBOR USD 1 Month + 4.35%), 5.974%, 7/25/31	47,000	46,905
Connecticut Avenue Securities Trust FRB Ser. 19-R05, Class 1B1, (ICE LIBOR USD 1 Month + 4.10%), 5.724%, 7/25/39	90,896	88,818
Connecticut Avenue Securities Trust FRB Ser. 22-R02, Class 2B1, (US 30 Day Average SOFR + 4.50%), 5.426%, 1/25/42	35,000	30,669
Connecticut Avenue Securities Trust FRB Ser. 20-SBT1, Class 1M2, (ICE LIBOR USD 1 Month + 3.65%), 5.274%, 2/25/40	79,000	76,649
Connecticut Avenue Securities Trust FRB Ser. 20-R02, Class 2B1, (ICE LIBOR USD 1 Month + 3.00%), 4.624%, 1/25/40	35,000	31,225
Connecticut Avenue Securities Trust FRB Ser. 22-R02, Class 2M2, (US 30 Day Average SOFR + 3.00%), 3.926%, 1/25/42	292,000	269,096
JPMorgan Alternative Loan Trust FRB Ser. 06-A6, Class 1A1, (ICE LIBOR USD 1 Month + 0.32%), 1.944%, 11/25/36	82,559	74,703
Morgan Stanley ABS Capital I, Inc. Trust FRB Ser. 04-HE9, Class M2, (ICE LIBOR USD 1 Month + 0.93%), 2.554%, 11/25/34	18,814	18,529
Morgan Stanley Re-REMIC Trust 144A FRB Ser. 10-R4, Class 4B, (ICE LIBOR USD 1 Month + 0.23%), 0.648%, 2/26/37	71,317	64,113
Structured Asset Mortgage Investments II Trust		
FRB Ser. 07-AR7, Class 1A1, (ICE LIBOR USD 1 Month + 0.85%), 2.474%, 5/25/47	383,586	319,666
FRB Ser. 06-AR7, Class A1BG, (ICE LIBOR USD 1 Month + 0.12%), 1.744%, 8/25/36	33,859	31,583
Towd Point Mortgage Trust 144A Ser. 19-2, Class A2, 3.75%, 12/25/58 W	102,000	98,396
WaMu Mortgage Pass-Through Certificates Trust FRB Ser. 05-AR8, Class 2AC2, (ICE LIBOR USD 1 Month + 0.92%), 2.544%, 7/25/45	68,455	63,600
		7,274,039
Total mortgage-backed securities (cost \$29,278,657)		\$26,779,763
	Principal amount	Value
ASSET-BACKED SECURITIES (2.9%)*		
1Sharpe Mortgage Trust 144A FRB Ser. 20-1, Class NOTE, (ICE LIBOR USD 3 Month + 2.90%), 3.025%, 7/25/24	\$209,000	\$208,478
Mello Warehouse Securitization Trust 144A		
FRB Ser. 21-3, Class D, (ICE LIBOR USD 1 Month + 2.00%), 3.624%, 11/25/55	79,000	74,924
FRB Ser. 20-2, Class A, (ICE LIBOR USD 1 Month + 0.80%), 2.424%, 11/25/53	33,000	33,000
FRB Ser. 21-2, Class A, (ICE LIBOR USD 1 Month + 0.75%), 2.374%, 4/25/55	75,000	75,000

ASSET-BACKED SECURITIES (2.9%)* cont.	Principal amount	Value
Mello Warehouse Securitization Trust 144A FRB Ser. 21-1, Class A, (ICE LIBOR USD 1 Month + 0.70%), 1.368%, 2/25/55	\$36,000	\$36,000
Station Place Securitization Trust 144A FRB Ser. 22-3, Class A1, (CME TERM SOFR 1 Month + 1.25%), 2.755%, 5/29/23	127,000	127,000
FRB Ser. 22-2, Class A1, (CME TERM SOFR 1 Month + 0.93%), 2.435%, 5/25/23	127,000	127,000
FRB Ser. 21-10, Class A, (ICE LIBOR USD 1 Month + 0.75%), 2.383%, 8/8/22	125,000	125,000
FRB Ser. 21-14, Class A1, (ICE LIBOR USD 1 Month + 0.70%), 2.333%, 12/8/22	47,000	47,000
FRB Ser. 21-16, Class A1, (ICE LIBOR USD 1 Month + 0.62%), 2.253%, 11/7/22	135,000	135,000
Total asset-backed securities (cost \$988,509)		\$988,402

**PURCHASED SWAP OPTIONS
OUTSTANDING (0.7%)***

Counterparty Fixed right % to receive or (pay)/ Floating rate index/Maturity date	Expiration date/strike	Notional/ Contract amount	Value
Bank of America N.A. 0.485/US SOFR/Jan-25	Jan-24/0.485	\$3,009,000	\$1,655
Morgan Stanley & Co. International PLC 3.00/US SOFR/Feb-73	Feb-48/3.00	790,100	86,461
3.00/US SOFR/Apr-72	Apr-47/3.00	790,100	83,134
2.75/US SOFR/May-73	May-48/2.75	790,100	73,614

**Total purchased swap options outstanding
(cost \$280,004)** **\$244,864**

**PURCHASED OPTIONS
OUTSTANDING (1.0%)*
Counterparty**

Expiration date/strike price	Notional amount	Contract amount	Value
JPMorgan Chase Bank N.A. Government National Mortgage Association 30 yr 3.50% TBA commitments (Call)	Aug-22/\$97.19	\$1,942,188	\$2,000,000
Uniform Mortgage-Backed Securities 30 yr 2.50% TBA commitments (Call)	Aug-22/90.00	4,487,888	5,000,000
Uniform Mortgage-Backed Securities 30 yr 3.00% TBA commitments (Call)	Aug-22/93.19	4,647,653	5,000,000
Uniform Mortgage-Backed Securities 30 yr 3.50% TBA commitments (Call)	Aug-22/96.19	4,799,998	5,000,000
Uniform Mortgage-Backed Securities 30 yr 4.00% TBA commitments (Call)	Aug-22/98.56	2,951,834	3,000,000
Uniform Mortgage-Backed Securities 30 yr 4.50% TBA commitments (Call)	Aug-22/100.25	12,018,283	12,000,000
Uniform Mortgage-Backed Securities 30 yr 5.00% TBA commitments (Call)	Aug-22/100.64	6,102,889	6,000,000
Total purchased options outstanding (cost \$352,969)			\$336,446

SHORT-TERM INVESTMENTS (25.8%)*	Principal amount/ shares	Value
Putnam Short Term Investment Fund Class P 1.36% ^L	Shares 2,287,396	\$2,287,396
State Street Institutional U.S. Government Money Market Fund, Premier Class 1.43% ^P	Shares 150,000	150,000
U.S. Treasury Bills 1.164%, 7/14/22 Δ \$	\$1,100,000	1,099,577
U.S. Treasury Bills 1.139%, 8/4/22 Δ \$	600,000	599,330
U.S. Treasury Bills 0.984%, 7/26/22 Δ	300,000	299,787
U.S. Treasury Bills 1.090%, 8/2/22 # Δ \$	1,100,000	1,098,878
U.S. Treasury Bills 1.158%, 7/28/22 Δ	1,100,000	1,099,111
U.S. Treasury Bills 0.860%, 7/19/22 Δ \$	600,000	599,693
U.S. Treasury Bills 1.228%, 7/21/22 # Δ \$	400,000	399,774
U.S. Treasury Bills 0.814%, 7/12/22 # Δ \$	700,000	699,795
U.S. Treasury Bills 0.859%, 7/5/22 Δ	588,000	587,943
Total short-term investments (cost \$8,921,362)		\$8,921,284

Total investments (cost \$69,198,823) **\$66,960,225**

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
LIBOR	London Interbank Offered Rate
PO	Principal Only
SOFR	Secured Overnight Financing Rate
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, 2022 through June 30, 2022 (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 \$34,542,395.
- # 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 \$228,805 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).
- Δ 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 \$5,295,529 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 \$420,666 and is included in Investments in securities on the Statement of assets and liabilities (Notes 1 and 8).

L Affiliated company (Note 5). The rate quoted in the security description is the annualized 7-day yield of the fund at the close of the reporting period.

P This security was pledged, or purchased with cash that was pledged, to the fund for collateral on certain derivative contracts. 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 \$31,558,992 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 6/30/22 (Unaudited)	Number of contracts	Notional amount	Value	Expiration date	Unrealized appreciation/(depreciation)
U.S. Treasury Note 2 yr (Short)	206	\$43,263,219	\$43,263,219	Sep-22	\$255,427
Unrealized appreciation					255,427
Unrealized (depreciation)					—
Total					\$255,427

WRITTEN SWAP OPTIONS OUTSTANDING at 6/30/22 (premiums \$2,464,295) (Unaudited)

Counterparty	Fixed Obligation % to receive or (pay)/	Expiration date/strike	Notional/Contract amount	Value
Bank of America N.A.				
0.985/3 month USD-LIBOR-ICE/Jan-25		Jan-24/0.985	\$3,009,000	\$58,254
3.195/3 month USD-LIBOR-ICE/Nov-55		Nov-25/3.195	1,981,700	152,155
(3.195)/3 month USD-LIBOR-ICE/Nov-55		Nov-25/3.195	1,981,700	294,322
Citibank, N.A.				
(1.865)/3 month USD-LIBOR-ICE/Oct-39		Oct-29/1.865	721,000	16,432
2.395/3 month USD-LIBOR-ICE/Nov-33		Nov-23/2.395	853,400	63,578
1.865/3 month USD-LIBOR-ICE/Oct-39		Oct-29/1.865	721,000	87,227
Goldman Sachs International				
(2.9425)/3 month USD-LIBOR-ICE/Feb-34		Feb-24/2.9425	2,064,300	78,381
2.9425/3 month USD-LIBOR-ICE/Feb-34		Feb-24/2.9425	2,064,300	100,531
JPMorgan Chase Bank N.A.				
(0.968)/3 month USD-LIBOR-ICE/Mar-35		Mar-25/0.968	320,000	1,664
(1.07)/3 month USD-LIBOR-ICE/Mar-32		Mar-27/1.07	574,100	4,202
1.07/3 month USD-LIBOR-ICE/Mar-32		Mar-27/1.07	574,100	51,124
0.968/3 month USD-LIBOR-ICE/Mar-35		Mar-25/0.968	320,000	56,874
3.229/3 month USD-LIBOR-ICE/Nov-33		Nov-23/3.229	2,042,400	72,771
(3.229)/3 month USD-LIBOR-ICE/Nov-33		Nov-23/3.229	2,042,400	99,669
Morgan Stanley & Co. International PLC				
(1.512)/3 month USD-LIBOR-ICE/Aug-32		Aug-22/1.512	951,100	19
(2.97)/3 month USD-LIBOR-ICE/Feb-36		Feb-26/2.97	891,000	42,314
(3.01)/3 month USD-LIBOR-ICE/Feb-36		Feb-26/3.01	891,000	43,712
(3.00)/3 month USD-LIBOR-ICE/Apr-48		Apr-23/3.00	790,100	46,252
3.01/3 month USD-LIBOR-ICE/Feb-36		Feb-26/3.01	891,000	54,645
2.97/3 month USD-LIBOR-ICE/Feb-36		Feb-26/2.97	891,000	55,848
(2.75)/3 month USD-LIBOR-ICE/May-49		May-25/2.75	790,100	58,460
(3.00)/3 month USD-LIBOR-ICE/Jan-49		Jan-24/3.00	790,100	63,516
1.512/3 month USD-LIBOR-ICE/Aug-32		Aug-22/1.512	951,100	130,396
2.7875/3 month USD-LIBOR-ICE/Apr-59		Apr-29/2.7875	1,238,600	137,039
(2.7875)/3 month USD-LIBOR-ICE/Apr-59		Apr-29/2.7875	1,238,600	161,699
Toronto-Dominion Bank				
(1.17)/3 month USD-LIBOR-ICE/Mar-55		Mar-25/1.17	47,500	705
1.17/3 month USD-LIBOR-ICE/Mar-55		Mar-25/1.17	94,900	30,998

WRITTEN SWAP OPTIONS OUTSTANDING at 6/30/22 (premiums \$2,464,295) (Unaudited) cont.

Counterparty	Expiration date/strike	Notional/Contract amount	Value
Fixed Obligation % to receive or (pay)/			
Floating rate index/Maturity date			
UBSAG			
(1.9875)/3 month USD-LIBOR-ICE/Oct-36	Oct-26/1.9875	\$836,400	\$17,916
1.9875/3 month USD-LIBOR-ICE/Oct-36	Oct-26/1.9875	836,400	95,191
Total			\$2,075,894

Counterparty	Expiration date/strike price	Notional amount	Contract amount	Value
WRITTEN OPTIONS OUTSTANDING at 6/30/22 (premiums \$327,188) (Unaudited)				
JPMorgan Chase Bank N.A.				
Government National Mortgage Association 30yr 3.50% TBA commitments (Put)	Aug-22/\$97.19	\$1,942,188	\$2,000,000	\$17,600
Uniform Mortgage-Backed Securities 30yr 2.50% TBA commitments (Put)	Aug-22/90.00	4,487,888	5,000,000	38,000
Uniform Mortgage-Backed Securities 30yr 3.00% TBA commitments (Put)	Aug-22/93.19	4,647,653	5,000,000	33,000
Uniform Mortgage-Backed Securities 30yr 3.50% TBA commitments (Put)	Aug-22/96.19	4,799,998	5,000,000	30,000
Uniform Mortgage-Backed Securities 30yr 4.00% TBA commitments (Put)	Aug-22/98.56	2,951,834	3,000,000	32,700
Uniform Mortgage-Backed Securities 30yr 4.50% TBA commitments (Put)	Aug-22/100.25	12,018,283	12,000,000	97,200
Uniform Mortgage-Backed Securities 30yr 5.00% TBA commitments (Put)	Aug-22/100.64	6,102,889	6,000,000	13,500
Total				\$262,000

Counterparty	Expiration date/strike	Contract amount	Premium receivable/(payable)	Unrealized appreciation/(depreciation)
FORWARD PREMIUM SWAP OPTION CONTRACTS OUTSTANDING at 6/30/22 (Unaudited)				
Fixed right or obligation % to receive or (pay)/				
Floating rate index/Maturity date				
Bank of America N.A.				
(1.39)/US SOFR/Dec-26 (Purchased)	Dec-24/1.39	\$10,869,900	\$(125,004)	\$186,093
(3.312)/3 month USD-LIBOR-ICE/Nov-38 (Purchased)	Nov-28/3.312	4,197,400	(76,523)	168,400
(2.485)/3 month USD-LIBOR-ICE/Oct-54 (Purchased)	Oct-24/2.485	1,267,500	(76,494)	96,774
(1.275)/3 month USD-LIBOR-ICE/Mar-50 (Purchased)	Mar-30/1.275	671,400	(87,450)	83,542
(1.76)/3 month USD-LIBOR-ICE/Jan-29 (Purchased)	Jan-28/1.76	2,900,900	(18,747)	25,615
(1.405)/US SOFR/Dec-58 (Purchased)	Dec-28/1.405	153,500	(23,543)	15,589
1.76/3 month USD-LIBOR-ICE/Jan-29 (Purchased)	Jan-28/1.76	2,900,900	(18,747)	(5,193)
(2.94)/US SOFR/Apr-25 (Purchased)	Apr-23/2.94	5,589,700	(59,810)	(6,987)
1.405/US SOFR/Dec-58 (Purchased)	Dec-28/1.405	153,500	(23,543)	(11,459)
2.29/3 month USD-LIBOR-ICE/Mar-34 (Purchased)	Mar-24/2.29	1,074,000	(52,825)	(30,341)
1.275/3 month USD-LIBOR-ICE/Mar-50 (Purchased)	Mar-30/1.275	671,400	(87,450)	(53,141)
1.39/US SOFR/Dec-26 (Purchased)	Dec-24/1.39	10,869,900	(125,004)	(60,437)
2.17/3 month USD-LIBOR-ICE/Apr-34 (Purchased)	Apr-24/2.17	3,068,600	(148,213)	(89,235)
3.312/3 month USD-LIBOR-ICE/Nov-38 (Purchased)	Nov-28/3.312	4,197,400	(593,277)	(322,067)
(1.085)/3 month USD-LIBOR-ICE/Apr-34 (Written)	Apr-24/1.085	6,137,300	84,234	55,297
3.073/US SOFR/Jun-37 (Written)	Jun-27/3.073	3,734,100	271,656	32,785
(1.29)/3 month USD-LIBOR-ICE/Mar-34 (Written)	Mar-24/1.29	1,534,300	23,935	15,144
3.101/US SOFR/Jun-39 (Written)	Jun-29/3.101	1,478,700	115,486	10,972
3.69/US SOFR/Apr-25 (Written)	Apr-23/3.69	11,179,400	62,605	10,844
(1.115)/3 month USD-LIBOR-ICE/Jan-26 (Written)	Jan-25/1.115	2,900,900	12,220	6,208
2.46/US SOFR/Jun-59 (Written)	Jun-29/2.46	908,300	128,343	1,744
(3.101)/US SOFR/Jun-39 (Written)	Jun-29/3.101	1,478,700	115,486	(2,174)
(3.073)/US SOFR/Jun-37 (Written)	Jun-27/3.073	3,734,100	271,656	(7,468)
(2.46)/US SOFR/Jun-59 (Written)	Jun-29/2.46	908,300	128,343	(10,455)
1.115/3 month USD-LIBOR-ICE/Jan-26 (Written)	Jan-25/1.115	2,900,900	12,220	(40,177)
2.415/3 month USD-LIBOR-ICE/Oct-33 (Written)	Oct-23/2.415	3,929,400	83,009	(204,054)
Barclays Bank PLC				
(2.232)/3 month USD-LIBOR-ICE/Jun-51 (Purchased)	Jun-31/2.232	2,648,900	(320,914)	107,943
2.232/3 month USD-LIBOR-ICE/Jun-51 (Purchased)	Jun-31/2.232	2,648,900	(320,914)	(95,625)
Citibank, N.A.				
(1.752)/3 month USD-LIBOR-ICE/Dec-31 (Purchased)	Dec-26/1.752	5,358,000	(174,671)	203,818
(1.648)/US SOFR/Sep-32 (Purchased)	Sep-22/1.648	1,406,400	(34,386)	111,865

FORWARD PREMIUM SWAP OPTION CONTRACTS OUTSTANDING at 6/30/22 (Unaudited) cont.

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)
Citibank, N.A. cont.				
(1.99)/US SOFR/Feb-42 (Purchased)	Feb-32/1.99	\$1,951,300	\$(153,665)	\$71,554
(1.735)/US SOFR/Mar-53 (Purchased)	Mar-23/1.735	525,200	(38,825)	63,381
(1.724)/US SOFR/Mar-53 (Purchased)	Mar-23/1.724	515,900	(38,925)	62,465
(2.194)/3 month USD-LIBOR-ICE/Sep-52 (Purchased)	Sep-22/2.194	485,200	(11,901)	61,421
(1.826)/US SOFR/Jan-42 (Purchased)	Jan-32/1.826	1,062,800	(78,488)	51,046
(1.90)/3 month USD-LIBOR-ICE/Jun-28 (Purchased)	Jun-26/1.90	3,281,900	(43,748)	47,161
(1.75)/US SOFR/Mar-53 (Purchased)	Mar-23/1.75	273,900	(20,501)	32,076
(1.102)/3 month USD-LIBOR-ICE/Nov-32 (Purchased)	Nov-22/1.102	144,400	(4,588)	20,297
(2.427)/3 month USD-LIBOR-ICE/Jun-41 (Purchased)	Jun-31/2.427	229,400	(16,712)	7,692
(2.285)/3 month USD-LIBOR-ICE/Mar-51 (Purchased)	Mar-41/2.285	1,433,800	(123,809)	6,911
(2.689)/3 month USD-LIBOR-ICE/Nov-49 (Purchased)	Nov-24/2.689	237,000	(30,514)	(2,083)
2.285/3 month USD-LIBOR-ICE/Mar-51 (Purchased)	Mar-41/2.285	1,433,800	(123,809)	(2,122)
1.102/3 month USD-LIBOR-ICE/Nov-32 (Purchased)	Nov-22/1.102	144,400	(4,588)	(4,523)
2.427/3 month USD-LIBOR-ICE/Jun-41 (Purchased)	Jun-31/2.427	229,400	(16,712)	(5,106)
2.689/3 month USD-LIBOR-ICE/Nov-49 (Purchased)	Nov-24/2.689	237,000	(30,514)	(12,533)
1.90/3 month USD-LIBOR-ICE/Jun-28 (Purchased)	Jun-26/1.90	3,281,900	(43,748)	(14,933)
1.75/US SOFR/Mar-53 (Purchased)	Mar-23/1.75	273,900	(20,501)	(17,294)
1.826/US SOFR/Jan-42 (Purchased)	Jan-32/1.826	1,062,800	(78,488)	(30,332)
1.735/US SOFR/Mar-53 (Purchased)	Mar-23/1.735	525,200	(38,825)	(32,809)
1.724/US SOFR/Mar-53 (Purchased)	Mar-23/1.724	515,900	(38,925)	(33,167)
1.648/US SOFR/Sep-32 (Purchased)	Sep-22/1.648	1,406,400	(34,386)	(34,035)
1.99/US SOFR/Feb-42 (Purchased)	Feb-32/1.99	1,951,300	(153,665)	(56,295)
1.752/3 month USD-LIBOR-ICE/Dec-31 (Purchased)	Dec-26/1.752	5,358,000	(174,671)	(84,174)
(1.245)/3 month USD-LIBOR-ICE/Aug-24 (Written)	Aug-22/1.245	3,364,200	30,782	30,547
(1.194)/3 month USD-LIBOR-ICE/Jun-25 (Written)	Jun-23/1.194	3,281,900	24,877	20,709
1.194/3 month USD-LIBOR-ICE/Jun-25 (Written)	Jun-23/1.194	3,281,900	24,877	(94,847)
1.245/3 month USD-LIBOR-ICE/Aug-24 (Written)	Aug-22/1.245	3,364,200	30,782	(104,492)
1.7075/3 month USD-LIBOR-ICE/Sep-27 (Written)	Sep-22/1.7075	2,329,000	12,344	(137,597)
Deutsche Bank AG				
(1.68)/US SOFR/Feb-57 (Purchased)	Feb-37/1.68	3,902,600	(575,438)	73,876
(1.724)/US SOFR/Jan-47 (Purchased)	Jan-37/1.724	1,328,500	(109,668)	36,653
2.235/US SOFR/Jul-32 (Purchased)	Jul-22/2.235	1,703,000	(9,622)	(9,111)
1.724/US SOFR/Jan-47 (Purchased)	Jan-37/1.724	1,328,500	(109,668)	(26,849)
1.68/US SOFR/Feb-57 (Purchased)	Feb-37/1.68	3,902,600	(575,438)	(121,956)
(2.135)/US SOFR/Mar-42 (Written)	Mar-32/2.135	2,884,700	242,459	82,762
3.235/US SOFR/Jul-32 (Written)	Jul-22/3.235	1,703,000	12,134	9,315
2.135/US SOFR/Mar-42 (Written)	Mar-32/2.135	2,884,700	242,459	(71,454)
Goldman Sachs International				
(1.727)/3 month USD-LIBOR-ICE/Jan-55 (Purchased)	Jan-25/1.727	313,700	(46,898)	30,874
2.995/US SOFR/Aug-32 (Purchased)	Aug-22/2.995	1,865,200	(40,717)	3,992
(2.8175)/3 month USD-LIBOR-ICE/Mar-47 (Purchased)	Mar-27/2.8175	233,300	(29,454)	(1,372)
2.8175/3 month USD-LIBOR-ICE/Mar-47 (Purchased)	Mar-27/2.8175	233,300	(29,454)	(7,935)
1.727/3 month USD-LIBOR-ICE/Jan-55 (Purchased)	Jan-25/1.727	313,700	(28,766)	(17,699)
(2.995)/US SOFR/Aug-32 (Purchased)	Aug-22/2.995	1,865,200	(40,717)	(25,535)
2.41/3 month USD-LIBOR-ICE/Aug-33 (Written)	Aug-23/2.41	1,868,900	27,286	(107,761)
2.07/3 month USD-LIBOR-ICE/Aug-33 (Written)	Aug-23/2.07	1,858,800	38,477	(137,347)
JPMorgan Chase Bank N.A.				
(1.805)/3 month USD-LIBOR-ICE/Dec-36 (Purchased)	Dec-26/1.805	1,098,300	(65,129)	79,539
(2.031)/3 month USD-LIBOR-ICE/Feb-41 (Purchased)	Feb-31/2.031	671,500	(45,931)	37,409
(1.905)/US SOFR/Jan-42 (Purchased)	Jan-32/1.905	679,900	(49,633)	30,630
(1.985)/3 month USD-LIBOR-ICE/Jan-41 (Purchased)	Jan-31/1.985	479,700	(32,907)	27,717

FORWARD PREMIUM SWAP OPTION CONTRACTS OUTSTANDING at 6/30/22 (Unaudited) cont.

Counterparty	Fixed right or obligation % to receive or (pay)/	Expiration	Contract	Premium	Unrealized
Floating rate index/Maturity date		date/strike	amount	receivable/ (payable)	appreciation/ (depreciation)
JPMorgan Chase Bank N.A. cont.					
(2.032)/3 month USD-LIBOR-ICE/Jan-55 (Purchased)		Jan-25/2.032	\$301,600	\$(34,835)	\$25,657
(1.544)/US SOFR/Jan-62 (Purchased)		Jan-32/1.544	255,000	(42,840)	14,767
(2.50)/3 month USD-LIBOR-ICE/Nov-39 (Purchased)		Nov-29/2.50	395,400	(41,122)	2,032
(2.902)/3 month USD-LIBOR-ICE/Nov-49 (Purchased)		Nov-24/2.902	237,000	(25,430)	(1,827)
2.50/3 month USD-LIBOR-ICE/Nov-39 (Purchased)		Nov-29/2.50	395,400	(22,854)	(4,282)
1.985/3 month USD-LIBOR-ICE/Jan-41 (Purchased)		Jan-31/1.985	479,700	(32,907)	(13,772)
2.902/3 month USD-LIBOR-ICE/Nov-49 (Purchased)		Nov-24/2.902	237,000	(36,640)	(14,301)
1.544/US SOFR/Jan-62 (Purchased)		Jan-32/1.544	255,000	(42,840)	(14,604)
1.905/US SOFR/Jan-42 (Purchased)		Jan-32/1.905	679,900	(49,633)	(17,943)
2.031/3 month USD-LIBOR-ICE/Feb-41 (Purchased)		Feb-31/2.031	671,500	(45,931)	(18,614)
2.032/3 month USD-LIBOR-ICE/Jan-55 (Purchased)		Jan-25/2.032	301,600	(34,835)	(19,888)
1.805/3 month USD-LIBOR-ICE/Dec-36 (Purchased)		Dec-26/1.805	1,098,300	(65,129)	(37,210)
(1.168)/3 month USD-LIBOR-ICE/Jun-37 (Written)		Jun-27/1.168	427,800	27,529	19,242
(1.70)/US SOFR/Jan-29 (Written)		Jan-24/1.70	1,709,200	36,470	19,092
(1.81)/US SOFR/Jan-37 (Written)		Jan-27/1.81	263,500	15,573	7,478
1.81/US SOFR/Jan-37 (Written)		Jan-27/1.81	263,500	15,573	(15,420)
1.168/3 month USD-LIBOR-ICE/Jun-37 (Written)		Jun-27/1.168	427,800	27,529	(46,562)
1.70/3 month USD-LIBOR-ICE/Jan-29 (Written)		Jan-24/1.70	1,709,200	36,470	(57,292)
Morgan Stanley & Co. International PLC					
3.27/3 month USD-LIBOR-ICE/Oct-53 (Purchased)		Oct-23/3.27	67,100	(7,656)	1,125
(2.505)/3 month USD-LIBOR-ICE/Nov-49 (Purchased)		Nov-24/2.505	237,000	(36,308)	(3,074)
(3.27)/3 month USD-LIBOR-ICE/Oct-53 (Purchased)		Oct-23/3.27	67,100	(7,656)	(4,074)
2.505/3 month USD-LIBOR-ICE/Nov-49 (Purchased)		Nov-24/2.505	237,000	(25,501)	(10,734)
Toronto-Dominion Bank					
(1.937)/3 month USD-LIBOR-ICE/Feb-36 (Purchased)		Feb-26/1.937	360,200	(18,838)	24,270
(2.405)/3 month USD-LIBOR-ICE/Mar-41 (Purchased)		Mar-31/2.405	149,600	(10,435)	5,556
2.405/3 month USD-LIBOR-ICE/Mar-41 (Purchased)		Mar-31/2.405	149,600	(10,435)	(3,122)
1.937/3 month USD-LIBOR-ICE/Feb-36 (Purchased)		Feb-26/1.937	360,200	(18,838)	(10,248)
(2.095)/3 month USD-LIBOR-ICE/Feb-56 (Written)		Feb-26/2.095	155,600	20,461	9,725
2.095/3 month USD-LIBOR-ICE/Feb-56 (Written)		Feb-26/2.095	155,600	20,461	(10,397)
UBSAG					
(0.8925)/3 month USD-LIBOR-ICE/Apr-28 (Purchased)		Apr-23/0.8925	507,000	(10,748)	39,024
(1.715)/3 month USD-LIBOR-ICE/Feb-53 (Purchased)		Feb-23/1.715	180,100	(16,254)	27,761
(0.902)/3 month USD-LIBOR-ICE/Apr-35 (Purchased)		Apr-25/0.902	202,800	(11,347)	26,549
(0.87)/3 month USD-LIBOR-ICE/Apr-28 (Purchased)		Apr-27/0.87	1,690,100	(11,400)	24,185
(0.983)/3 month USD-LIBOR-ICE/Apr-32 (Purchased)		Apr-30/0.983	676,000	(10,715)	17,103
(1.87)/3 month USD-LIBOR-ICE/Jul-46 (Purchased)		Jul-41/1.87	1,188,800	(55,279)	14,052
(2.6525)/US SOFR/Aug-32 (Purchased)		Aug-22/2.6525	1,605,200	(32,826)	5,634
0.983/3 month USD-LIBOR-ICE/Apr-32 (Purchased)		Apr-30/0.983	676,000	(10,715)	(6,064)
0.87/3 month USD-LIBOR-ICE/Apr-28 (Purchased)		Apr-27/0.87	1,690,100	(11,400)	(6,862)
1.87/3 month USD-LIBOR-ICE/Jul-46 (Purchased)		Jul-41/1.87	1,188,800	(55,279)	(7,299)
0.902/3 month USD-LIBOR-ICE/Apr-35 (Purchased)		Apr-25/0.902	202,800	(11,347)	(9,483)
0.8925/3 month USD-LIBOR-ICE/Apr-28 (Purchased)		Apr-23/0.8925	507,000	(10,748)	(10,241)
1.715/3 month USD-LIBOR-ICE/Feb-53 (Purchased)		Feb-23/1.715	180,100	(16,254)	(15,236)
(0.958)/3 month USD-LIBOR-ICE/May-30 (Written)		May-25/0.958	405,600	10,779	8,002
2.8375/US SOFR/Aug-32 (Written)		Aug-22/2.8375	2,407,800	32,746	(3,852)
0.958/3 month USD-LIBOR-ICE/May-30 (Written)		May-25/0.958	405,600	10,779	(27,195)
Wells Fargo Bank, N.A.					
(1.405)/3 month USD-LIBOR-ICE/Feb-29 (Purchased)		Feb-24/1.405	1,260,600	(25,811)	67,984
(1.3875)/3 month USD-LIBOR-ICE/Feb-29 (Purchased)		Feb-24/1.3875	900,400	(18,481)	49,117
(2.16)/3 month USD-LIBOR-ICE/Feb-35 (Purchased)		Feb-25/2.16	532,700	(26,568)	26,981

FORWARD PREMIUM SWAP OPTION CONTRACTS OUTSTANDING at 6/30/22 (Unaudited) cont.

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)
Wells Fargo Bank, N.A. cont.				
(1.8225)/US SOFR/Jan-42 (Purchased)	Jan-32/1.8225	\$398,500	\$(29,409)	\$19,220
(2.2775)/3 month USD-LIBOR-ICE/Jul-52 (Purchased)	Jul-22/2.2775	264,700	(22,367)	12,589
1.8225/US SOFR/Jan-42 (Purchased)	Jan-32/1.8225	398,500	(29,409)	(11,385)
1.3875/3 month USD-LIBOR-ICE/Feb-29 (Purchased)	Feb-24/1.3875	900,400	(18,481)	(13,461)
2.16/3 month USD-LIBOR-ICE/Feb-35 (Purchased)	Feb-25/2.16	532,700	(26,568)	(13,845)
1.405/3 month USD-LIBOR-ICE/Feb-29 (Purchased)	Feb-24/1.405	1,260,600	(25,811)	(18,644)
2.2775/3 month USD-LIBOR-ICE/Jul-52 (Purchased)	Jul-22/2.2775	264,700	(22,367)	(22,338)
(1.62)/US SOFR/Jan-27 (Written)	Jan-25/1.62	3,055,500	33,611	11,703
1.62/US SOFR/Jan-27 (Written)	Jan-25/1.62	3,055,500	33,611	(45,250)
Unrealized appreciation				2,499,508
Unrealized (depreciation)				(2,646,693)
Total				\$(147,185)

**TBA SALE COMMITMENTS OUTSTANDING at 6/30/22 (Unaudited)
(proceeds receivable \$15,993,711)**

	Principal amount	Settlement date	Value
Uniform Mortgage-Backed Securities, 5.00%, 8/1/52	\$6,000,000	8/11/22	\$6,102,889
Uniform Mortgage-Backed Securities, 5.00%, 7/1/52	3,000,000	7/14/22	3,060,468
Uniform Mortgage-Backed Securities, 4.50%, 8/1/52	4,000,000	8/11/22	4,006,094
Uniform Mortgage-Backed Securities, 4.00%, 7/1/52	2,000,000	7/14/22	1,971,562
Uniform Mortgage-Backed Securities, 3.50%, 8/1/52	1,000,000	8/11/22	960,000
Total			\$16,101,013

CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/22 (Unaudited)

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$1,782,000	\$61,034	\$86	12/23/23	0.695% — Annually	Secured Overnight Financing Rate — Annually	\$57,931
1,612,000	115,725	139	12/23/26	1.085% — Annually	Secured Overnight Financing Rate — Annually	109,629
2,512,000	313,749	(654)	12/23/31	Secured Overnight Financing Rate — Annually	1.285% — Annually	(302,035)
736,000	180,372	(1,311)	12/23/51	Secured Overnight Financing Rate — Annually	1.437% — Annually	(177,468)
3,647,000	124,800	(371)	12/24/23	0.697% — Annually	Secured Overnight Financing Rate — Annually	117,829
189,000	13,489	12	12/24/26	Secured Overnight Financing Rate — Annually	1.096% — Annually	(12,619)
5,228,000	653,134	(2,334)	12/24/31	1.285% — Annually	Secured Overnight Financing Rate — Annually	625,200
847,000	207,913	(458)	12/24/51	1.435% — Annually	Secured Overnight Financing Rate — Annually	202,632
129,000	29,329	(21)	12/31/51	1.525% — Annually	Secured Overnight Financing Rate — Annually	28,518
308,000	21,554	(41)	12/31/26	Secured Overnight Financing Rate — Annually	1.135% — Annually	(20,241)
159,400	7,328 ^E	(4)	1/15/47	1.724% — Annually	Secured Overnight Financing Rate — Annually	7,324
460,000	90,358	(16)	1/21/52	1.679% — Annually	Secured Overnight Financing Rate — Annually	87,463
309,000	63,994	(11)	1/19/52	Secured Overnight Financing Rate — Annually	1.626% — Annually	(62,232)
1,099,000	221,317	(37)	2/1/52	1.6545% — Annually	Secured Overnight Financing Rate — Annually	214,766
897,600	45,903 ^E	(31)	2/13/57	1.68% — Annually	Secured Overnight Financing Rate — Annually	45,873
1,269,700	203,038	(43)	2/24/52	Secured Overnight Financing Rate — Annually	1.86% — Annually	(195,873)

CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/22 (Unaudited) cont.

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$13,000	\$2,322	\$—	2/29/52	1.7674% — Annually	Secured Overnight Financing Rate — Annually	\$2,259
64,000	5,623	(1)	2/29/32	Secured Overnight Financing Rate — Annually	1.75% — Annually	(5,305)
123,000	5,977	(1)	2/28/27	1.675% — Annually	Secured Overnight Financing Rate — Annually	5,395
299,000	7,571	(1)	2/29/24	Secured Overnight Financing Rate — Annually	1.47709% — Annually	(6,327)
388,900	36,230	(5)	3/7/32	3 month USD-LIBOR-ICE — Quarterly	1.9575% — Semiannually	(34,246)
1,230,000	129,568	(16)	3/9/32	1.5475% — Annually	Secured Overnight Financing Rate — Annually	124,502
1,275,000	134,959	(17)	3/9/32	1.5415% — Annually	Secured Overnight Financing Rate — Annually	129,887
672,000	60,010	(9)	3/11/32	1.737% — Annually	Secured Overnight Financing Rate — Annually	57,172
886,000	8,780	(3)	4/7/24	2.45% — Annually	Secured Overnight Financing Rate — Annually	4,551
806,000	11,421	(7)	4/7/27	2.469% — Annually	Secured Overnight Financing Rate — Annually	7,532
686,000	26,926	(9)	4/7/23	2.3305% — Annually	Secured Overnight Financing Rate — Annually	23,846
41,000	4,549	(1)	4/7/52	2.1015% — Annually	Secured Overnight Financing Rate — Annually	4,382
574,000	35,990	(20)	4/14/52	Secured Overnight Financing Rate — Annually	2.3395% — Annually	(33,665)
123,000	3,090	(2)	4/14/32	Secured Overnight Financing Rate — Annually	2.4965% — Annually	(2,534)
599,000	8,134	(5)	4/14/27	2.483% — Annually	Secured Overnight Financing Rate — Annually	5,507
337,000	3,626	(1)	4/14/24	2.405% — Annually	Secured Overnight Financing Rate — Annually	2,173
2,643,300	12,027	(25)	5/2/27	Secured Overnight Financing Rate — Annually	2.685% — Annually	(2,359)
4,758,800	36,310	(18)	5/25/24	2.5945% — Annually	Secured Overnight Financing Rate — Annually	27,508
739,000	21,830	(25)	5/25/52	Secured Overnight Financing Rate — Annually	2.501% — Annually	(20,560)
2,069,000	6,373	(27)	6/7/32	Secured Overnight Financing Rate — Annually	2.7565% — Annually	(3,905)
376,000	1,816	(13)	6/7/52	Secured Overnight Financing Rate — Annually	2.622% — Annually	(1,375)
4,902,500	14,021	(65)	6/8/32	Secured Overnight Financing Rate — Annually	2.825% — Annually	20,257
503,600	63,328	(63,209)	6/22/52	2.3075% — Semiannually	3 month USD-LIBOR-ICE — Quarterly	104
1,371,000	4,332	(5)	6/10/24	Secured Overnight Financing Rate — Annually	2.833% — Annually	(2,740)
1,143,000	926	(9)	6/10/27	2.8025% — Annually	Secured Overnight Financing Rate — Annually	(2,247)
6,851,500	44,535	(26)	6/15/24	Secured Overnight Financing Rate — Annually	3.3385% — Annually	52,267
3,686,000	68,191	(30)	6/15/27	3.185% — Annually	Secured Overnight Financing Rate — Annually	(72,143)
4,251,000	27,036 ^E	(8,759)	9/21/24	Secured Overnight Financing Rate — Annually	3.40% — Annually	18,278
9,545,000	211,135 ^E	108,060	9/21/27	3.30% — Annually	Secured Overnight Financing Rate — Annually	(103,076)
2,854,000	94,467 ^E	44,899	9/21/32	3.20% — Annually	Secured Overnight Financing Rate — Annually	(49,568)

CENTRALLY CLEARED INTEREST RATE SWAP CONTRACTS OUTSTANDING at 6/30/22 (Unaudited) cont.

Notional amount	Value	Upfront premium received (paid)	Termination date	Payments made by fund	Payments received by fund	Unrealized appreciation/ (depreciation)
\$663,000	\$60,817 [‡]	\$(39,729)	9/21/52	Secured Overnight Financing Rate — Annually	3.10% — Annually	\$21,088
765,400	1,891 [‡]	(11)	2/3/33	3.13% — Semiannually	3 month USD-LIBOR-ICE — Quarterly	(1,901)
890,000	2,572	(3)	6/29/24	3.1415% — Annually	Secured Overnight Financing Rate — Annually	(2,695)
2,073,000	7,380	(8)	7/1/24	3.1765% — Annually	Secured Overnight Financing Rate — Annually	(7,388)
348,000	862	(10)	7/5/52	Secured Overnight Financing Rate — Annually	2.657% — Annually	853
Total		\$35,794				\$882,224

[‡] Extended effective date.

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/22 (Unaudited)

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termination date	Payments received by fund	Unrealized appreciation/ (depreciation)
Citigroup Global Markets, Inc.							
CMBX NAA.6 Index	BBB+/P	\$151	\$800	\$79	5/11/63	200 bp — Monthly	\$73
CMBX NAA.6 Index	BBB+/P	364	2,400	236	5/11/63	200 bp — Monthly	128
CMBX NAA.6 Index	BBB+/P	1,667	11,200	1,102	5/11/63	200 bp — Monthly	569
CMBX NAA.6 Index	BBB+/P	1,791	12,000	1,181	5/11/63	200 bp — Monthly	614
CMBX NAA.6 Index	BBB+/P	1,903	12,000	1,181	5/11/63	200 bp — Monthly	727
CMBX NAA.6 Index	BBB+/P	11,341	76,000	7,478	5/11/63	200 bp — Monthly	3,889
CMBX NAA.6 Index	BBB+/P	15,540	88,800	8,738	5/11/63	200 bp — Monthly	6,833
CMBX NA BB.11 Index	BB-/P	12,430	22,000	4,310	11/18/54	500 bp — Monthly	8,139
CMBX NA BB.13 Index	BB-/P	1,276	14,000	3,283	12/16/72	500 bp — Monthly	(1,995)
CMBX NA BB.13 Index	BB-/P	4,899	49,000	11,491	12/16/72	500 bp — Monthly	(6,551)
CMBX NA BB.13 Index	BB-/P	5,103	56,000	13,132	12/16/72	500 bp — Monthly	(7,983)
CMBX NA BB.13 Index	BB-/P	8,871	94,000	22,043	12/16/72	500 bp — Monthly	(13,094)
CMBX NA BB.14 Index	BB/P	10,087	92,000	19,734	12/16/72	500 bp — Monthly	(9,570)
CMBX NA BB.6 Index	CCC+/P	38,463	88,298	34,304	5/11/63	500 bp — Monthly	4,233
CMBX NA BB.9 Index	B/P	1,425	7,000	2,049	9/17/58	500 bp — Monthly	(618)
CMBX NA BB.9 Index	B/P	5,611	10,000	2,927	9/17/58	500 bp — Monthly	2,692
CMBX NA BB.9 Index	B/P	13,070	64,000	18,733	9/17/58	500 bp — Monthly	(5,609)
CMBX NA BBB-.10 Index	BB+/P	5,211	42,000	7,321	11/17/59	300 bp — Monthly	(2,088)
CMBX NA BBB-.10 Index	BB+/P	6,982	64,000	11,155	11/17/59	300 bp — Monthly	(4,141)
CMBX NA BBB-.11 Index	BBB-/P	4,385	70,000	11,277	11/18/54	300 bp — Monthly	(6,857)
CMBX NA BBB-.12 Index	BBB-/P	1,210	29,000	5,220	8/17/61	300 bp — Monthly	(3,996)
CMBX NA BBB-.12 Index	BBB-/P	8,309	141,000	25,380	8/17/61	300 bp — Monthly	(17,000)
CMBX NA BBB-.13 Index	BBB-/P	614	7,000	1,396	12/16/72	300 bp — Monthly	(778)
CMBX NA BBB-.13 Index	BBB-/P	8,094	86,000	17,148	12/16/72	300 bp — Monthly	(9,012)
CMBX NA BBB-.13 Index	BBB-/P	20,227	110,000	21,934	12/16/72	300 bp — Monthly	(1,679)
CMBX NA BBB-.14 Index	BBB-/P	89	2,000	417	12/16/72	300 bp — Monthly	(327)
CMBX NA BBB-.14 Index	BBB-/P	824	22,000	4,589	12/16/72	300 bp — Monthly	(3,754)
CMBX NA BBB-.14 Index	BBB-/P	980	24,000	5,006	12/16/72	300 bp — Monthly	(4,014)
CMBX NA BBB-.14 Index	BBB-/P	966	31,000	6,467	12/16/72	300 bp — Monthly	(5,485)
CMBX NA BBB-.14 Index	BBB-/P	4,328	141,000	29,413	12/16/72	300 bp — Monthly	(25,015)
CMBX NA BBB-.14 Index	BBB-/P	9,737	298,000	62,163	12/16/72	300 bp — Monthly	(52,277)
CMBX NA BBB-.15 Index	BBB-/P	6,372	61,000	13,335	11/18/64	300 bp — Monthly	(6,932)
CMBX NA BBB-.15 Index	BBB-/P	8,326	49,000	10,711	11/18/64	300 bp — Monthly	(2,361)
CMBX NA BBB-.6 Index	B+/P	17,825	55,687	12,764	5/11/63	300 bp — Monthly	5,089
CMBX NA BBB-.6 Index	B+/P	17,825	55,687	12,764	5/11/63	300 bp — Monthly	5,089
CMBX NA BBB-.6 Index	B+/P	4,935	67,364	15,440	5/11/63	300 bp — Monthly	(10,471)
CMBX NA BBB-.6 Index	B+/P	6,792	92,513	21,204	5/11/63	300 bp — Monthly	(14,366)
CMBX NA BBB-.6 Index	B+/P	8,101	106,884	24,498	5/11/63	300 bp — Monthly	(16,343)

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/22 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
Citigroup Global Markets, Inc. cont.							
CMBX NA BBB-.6 Index	B+/P	\$36,503	\$111,375	\$25,527	5/11/63	300 bp— Monthly	\$11,031
CMBX NA BBB-.6 Index	B+/P	40,915	149,996	34,379	5/11/63	300 bp— Monthly	6,611
CMBX NA BBB-.6 Index	B+/P	77,099	252,389	57,848	5/11/63	300 bp— Monthly	19,378
CMBX NA BBB-.6 Index	B+/P	166,520	2,348,745	538,332	5/11/63	300 bp— Monthly	(370,637)
Credit Suisse International							
CMBX NA BB.7 Index	B/P	2,541	19,000	5,995	1/17/47	500 bp— Monthly	(3,437)
CMBX NA BBB-.6 Index	B+/P	105,990	1,013,149	232,214	5/11/63	300 bp— Monthly	(125,717)
Deutsche Bank AG							
CMBX NA BBB-.6 Index	B+/P	53,946	454,480	104,167	5/11/63	300 bp— Monthly	(49,993)
Goldman Sachs International							
CMBX NAA.14 Index	A-/P	(211)	12,000	768	12/16/72	200 bp— Monthly	(975)
CMBX NAA.14 Index	A-/P	(1,052)	62,000	3,968	12/16/72	200 bp— Monthly	(5,000)
CMBX NAA.14 Index	A-/P	12,081	210,000	13,440	12/16/72	200 bp— Monthly	(1,324)
CMBX NAA.7 Index	BBB+/P	(54)	37,000	1,961	1/17/47	200 bp— Monthly	(2,003)
CMBX NA BB.14 Index	BB/P	11,521	74,000	15,873	12/16/72	500 bp— Monthly	(4,291)
CMBX NA BB.14 Index	BB/P	13,001	103,000	22,094	12/16/72	500 bp— Monthly	(9,007)
CMBX NA BB.6 Index	CCC+/P	556	3,679	1,429	5/11/63	500 bp— Monthly	(870)
CMBX NA BB.7 Index	B/P	4,751	14,000	4,417	1/17/47	500 bp— Monthly	346
CMBX NA BB.7 Index	B/P	6,389	19,000	5,995	1/17/47	500 bp— Monthly	410
CMBX NA BB.7 Index	B/P	7,560	24,000	7,572	1/17/47	500 bp— Monthly	8
CMBX NA BBB-.15 Index	BBB-/P	1,305	21,000	4,591	11/18/64	300 bp— Monthly	(3,275)
CMBX NA BBB-.6 Index	B+/P	142	898	206	5/11/63	300 bp— Monthly	(63)
CMBX NA BBB-.6 Index	B+/P	717	12,575	2,882	5/11/63	300 bp— Monthly	(2,159)
CMBX NA BBB-.6 Index	B+/P	1,416	14,371	3,294	5/11/63	300 bp— Monthly	(1,871)
CMBX NA BBB-.6 Index	B+/P	1,416	14,371	3,294	5/11/63	300 bp— Monthly	(1,871)
CMBX NA BBB-.6 Index	B+/P	2,017	21,556	4,941	5/11/63	300 bp— Monthly	(2,913)
CMBX NA BBB-.6 Index	B+/P	4,881	37,724	8,646	5/11/63	300 bp— Monthly	(3,746)
CMBX NA BBB-.6 Index	B+/P	12,121	38,622	8,852	5/11/63	300 bp— Monthly	3,288
CMBX NA BBB-.6 Index	B+/P	12,121	38,622	8,852	5/11/63	300 bp— Monthly	3,288
CMBX NA BBB-.6 Index	B+/P	2,486	44,011	10,087	5/11/63	300 bp— Monthly	(7,579)
CMBX NA BBB-.6 Index	B+/P	6,787	45,807	10,499	5/11/63	300 bp— Monthly	(3,689)
CMBX NA BBB-.6 Index	B+/P	3,030	53,891	12,352	5/11/63	300 bp— Monthly	(9,294)
CMBX NA BBB-.6 Index	B+/P	20,258	66,465	15,234	5/11/63	300 bp— Monthly	5,057
CMBX NA BBB-.6 Index	B+/P	35,594	120,356	27,586	5/11/63	300 bp— Monthly	8,068
CMBX NA BBB-.6 Index	B+/P	24,037	186,822	42,820	5/11/63	300 bp— Monthly	(18,689)
CMBX NA BBB-.6 Index	B+/P	31,021	277,538	63,612	5/11/63	300 bp— Monthly	(32,452)
CMBX NA BBB-.6 Index	B+/P	42,910	361,069	82,757	5/11/63	300 bp— Monthly	(39,667)
JPMorgan Securities LLC							
CMBX NAA.13 Index	A-/P	484	6,000	366	12/16/72	200 bp— Monthly	120
CMBX NAA.14 Index	A-/P	(106)	18,000	1,152	12/16/72	200 bp— Monthly	(1,252)
CMBX NA BB.10 Index	B+/P	2,006	25,000	8,133	5/11/63	500 bp— Monthly	(6,106)
CMBX NA BB.7 Index	B/P	1,370	4,000	1,262	1/17/47	500 bp— Monthly	111
CMBX NA BB.7 Index	B/P	30,848	63,000	19,877	1/17/47	500 bp— Monthly	11,024
CMBX NA BBB-.12 Index	BBB-/P	1,442	12,000	2,160	8/17/61	300 bp— Monthly	(712)
CMBX NA BBB-.13 Index	BBB-/P	1,718	13,000	2,592	12/16/72	300 bp— Monthly	(867)
Merrill Lynch International							
CMBX NAA.15 Index	A-/P	114	7,000	468	11/18/64	200 bp— Monthly	(352)
CMBX NAA.15 Index	A-/P	187	14,000	937	11/18/64	200 bp— Monthly	(745)
CMBX NAA.15 Index	A-/P	190	16,000	1,070	11/18/64	200 bp— Monthly	(875)
CMBX NA BB.6 Index	CCC+/P	335	2,759	1,072	5/11/63	500 bp— Monthly	(734)
CMBX NA BB.7 Index	B/P	1,452	12,000	3,786	1/17/47	500 bp— Monthly	(2,324)
CMBX NA BBB-.6 Index	B+/P	16,409	52,993	12,146	5/11/63	300 bp— Monthly	4,290
CMBX NA BBB-.6 Index	B+/P	179,183	597,291	136,899	5/11/63	300 bp— Monthly	42,583

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION SOLD at 6/30/22 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Rating***	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments received by fund	Unrealized appreciation/ (depreciation)
Morgan Stanley & Co. International PLC							
CMBX NAA.14 Index	A-/P	\$(151)	\$12,000	\$768	12/16/72	200 bp — Monthly	\$(915)
CMBX NAA.14 Index	A-/P	(94)	16,000	1,024	12/16/72	200 bp — Monthly	(1,113)
CMBX NAA.14 Index	A-/P	(267)	24,000	1,536	12/16/72	200 bp — Monthly	(1,795)
CMBX NAA.14 Index	A-/P	(386)	26,000	1,664	12/16/72	200 bp — Monthly	(2,041)
CMBX NAA.14 Index	A-/P	(405)	26,000	1,664	12/16/72	200 bp — Monthly	(2,060)
CMBX NAA.14 Index	A-/P	(405)	26,000	1,664	12/16/72	200 bp — Monthly	(2,060)
CMBX NAA.14 Index	A-/P	(549)	39,000	2,496	12/16/72	200 bp — Monthly	(3,032)
CMBX NAA.14 Index	A-/P	(640)	40,000	2,560	12/16/72	200 bp — Monthly	(3,187)
CMBX NAA.14 Index	A-/P	805	63,000	4,032	12/16/72	200 bp — Monthly	(3,206)
CMBX NAA.7 Index	BBB+/P	(2)	2,000	106	1/17/47	200 bp — Monthly	(107)
CMBX NAA.7 Index	BBB+/P	(5)	11,000	583	1/17/47	200 bp — Monthly	(585)
CMBX NAA.7 Index	BBB+/P	656	135,000	7,155	1/17/47	200 bp — Monthly	(6,454)
CMBX NA BB.13 Index	BB-/P	184	2,000	469	12/16/72	500 bp — Monthly	(284)
CMBX NA BB.13 Index	BB-/P	275	3,000	704	12/16/72	500 bp — Monthly	(426)
CMBX NA BB.13 Index	BB-/P	372	4,000	938	12/16/72	500 bp — Monthly	(563)
CMBX NA BB.13 Index	BB-/P	1,793	19,000	4,456	12/16/72	500 bp — Monthly	(2,647)
CMBX NA BB.13 Index	BB-/P	4,636	25,000	5,863	12/16/72	500 bp — Monthly	(1,206)
CMBX NA BB.13 Index	BB-/P	4,374	48,000	11,256	12/16/72	500 bp — Monthly	(6,842)
CMBX NA BB.13 Index	BB-/P	5,634	61,000	14,305	12/16/72	500 bp — Monthly	(8,619)
CMBX NA BB.14 Index	BB/P	1,591	13,000	2,789	12/16/72	500 bp — Monthly	(1,187)
CMBX NA BB.6 Index	CCC+/P	36,496	79,101	30,731	5/11/63	500 bp — Monthly	5,832
CMBX NA BB.6 Index	CCC+/P	136,920	299,847	116,491	5/11/63	500 bp — Monthly	20,679
CMBX NA BB.7 Index	B/P	11,747	35,000	11,043	1/17/47	500 bp — Monthly	734
CMBX NA BBB-.12 Index	BBB-/P	3,418	58,000	10,440	8/17/61	300 bp — Monthly	(6,993)
CMBX NA BBB-.12 Index	BBB-/P	4,852	113,000	20,340	8/17/61	300 bp — Monthly	(15,432)
CMBX NA BBB-.15 Index	BBB-/P	1,128	20,000	4,372	11/18/64	300 bp — Monthly	(3,234)
CMBX NA BBB-.15 Index	BBB-/P	5,508	60,000	13,116	11/18/64	300 bp — Monthly	(7,578)
CMBX NA BBB-.6 Index	B+/P	752	8,084	1,853	5/11/63	300 bp — Monthly	(1,097)
CMBX NA BBB-.6 Index	B+/P	2,377	32,335	7,411	5/11/63	300 bp — Monthly	(5,018)
CMBX NA BBB-.6 Index	B+/P	2,364	32,335	7,411	5/11/63	300 bp — Monthly	(5,031)
CMBX NA BBB-.6 Index	B+/P	4,206	38,622	8,852	5/11/63	300 bp — Monthly	(4,627)
CMBX NA BBB-.6 Index	B+/P	21,440	72,753	16,675	5/11/63	300 bp — Monthly	4,801
CMBX NA BBB-.6 Index	B+/P	23,959	76,345	17,498	5/11/63	300 bp — Monthly	6,499
CMBX NA BBB-.6 Index	B+/P	49,731	169,756	38,908	5/11/63	300 bp — Monthly	10,907
CMBX NA BBB-.6 Index	B+/P	345,989	4,690,754	1,075,121	5/11/63	300 bp — Monthly	(726,784)
CMBX NA BBB-.7 Index	BB-/P	74	1,000	187	1/17/47	300 bp — Monthly	(112)
CMBX NA BBB-.7 Index	BB-/P	23,003	338,000	63,172	1/17/47	300 bp — Monthly	(40,001)
CMBX NA BBB-.9 Index	BB+/P	194	2,000	343	9/17/58	300 bp — Monthly	(148)
Upfront premium received		1,947,972					203,140
Upfront premium (paid)		(4,327)					(1,811,189)
Total		\$1,943,645					\$(1,608,049)

* 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, 2022. 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 6/30/22 (Unaudited)

Swap counterparty/ Referenced debt*	Upfront premium received (paid)**	Notional amount	Value	Termination date	Payments (paid) by fund	Unrealized appreciation/ (depreciation)
Citigroup Global Markets, Inc.						
CMBX NA BB.10 Index	\$(22,695)	\$89,000	\$28,952	11/17/59	(500 bp) — Monthly	\$6,183
CMBX NA BB.10 Index	(6,028)	25,000	8,133	11/17/59	(500 bp) — Monthly	2,084
CMBX NA BB.10 Index	(1,252)	12,000	3,904	11/17/59	(500 bp) — Monthly	2,641
CMBX NA BB.10 Index	(987)	9,000	2,928	11/17/59	(500 bp) — Monthly	1,933
CMBX NA BB.11 Index	(357)	7,000	1,371	11/18/54	(500 bp) — Monthly	1,008
CMBX NA BB.11 Index	(363)	7,000	1,371	11/18/54	(500 bp) — Monthly	1,002
CMBX NA BB.11 Index	(505)	7,000	1,371	11/18/54	(500 bp) — Monthly	860
CMBX NA BB.7 Index	(9,339)	183,000	57,737	1/17/47	(500 bp) — Monthly	48,245
CMBX NA BB.7 Index	(1,077)	16,000	5,048	1/17/47	(500 bp) — Monthly	3,958
CMBX NA BB.8 Index	(12,059)	33,821	12,558	10/17/57	(500 bp) — Monthly	470
CMBX NA BB.8 Index	(2,980)	23,192	8,611	10/17/57	(500 bp) — Monthly	5,612
CMBX NA BBB-.10 Index	(30,261)	176,000	30,677	11/17/59	(300 bp) — Monthly	328
CMBX NA BBB-.10 Index	(17,178)	74,000	12,898	11/17/59	(300 bp) — Monthly	(4,316)
CMBX NA BBB-.10 Index	(12,167)	51,000	8,889	11/17/59	(300 bp) — Monthly	(3,303)
CMBX NA BBB-.10 Index	(6,246)	49,000	8,541	11/17/59	(300 bp) — Monthly	2,270
CMBX NA BBB-.10 Index	(8,077)	37,000	6,449	11/17/59	(300 bp) — Monthly	(1,646)
CMBX NA BBB-.10 Index	(7,182)	33,000	5,752	11/17/59	(300 bp) — Monthly	(1,447)
CMBX NA BBB-.10 Index	(1,657)	13,000	2,266	11/17/59	(300 bp) — Monthly	602
CMBX NA BBB-.10 Index	(1,101)	9,000	1,569	11/17/59	(300 bp) — Monthly	463
CMBX NA BBB-.11 Index	(9,616)	30,000	4,833	11/18/54	(300 bp) — Monthly	(4,798)
CMBX NA BBB-.11 Index	(3,680)	25,000	4,028	11/18/54	(300 bp) — Monthly	335
CMBX NA BBB-.12 Index	(12,736)	185,000	33,300	8/17/61	(300 bp) — Monthly	20,471
CMBX NA BBB-.12 Index	(21,043)	63,000	11,340	8/17/61	(300 bp) — Monthly	(9,735)
CMBX NA BBB-.12 Index	(16,684)	48,000	8,640	8/17/61	(300 bp) — Monthly	(8,068)
CMBX NA BBB-.12 Index	(8,800)	39,000	7,020	8/17/61	(300 bp) — Monthly	(1,799)
CMBX NA BBB-.12 Index	(11,951)	34,000	6,120	8/17/61	(300 bp) — Monthly	(5,848)
CMBX NA BBB-.12 Index	(2,116)	31,000	5,580	8/17/61	(300 bp) — Monthly	3,449
CMBX NA BBB-.7 Index	(4,375)	20,000	3,738	1/17/47	(300 bp) — Monthly	(647)
CMBX NA BBB-.8 Index	(22,031)	141,000	24,351	10/17/57	(300 bp) — Monthly	2,249
CMBX NA BBB-.8 Index	(14,226)	90,000	15,543	10/17/57	(300 bp) — Monthly	1,272
CMBX NA BBB-.8 Index	(14,282)	90,000	15,543	10/17/57	(300 bp) — Monthly	1,216
CMBX NA BBB-.8 Index	(11,516)	83,000	14,334	10/17/57	(300 bp) — Monthly	2,776
CMBX NA BBB-.8 Index	(10,955)	70,000	12,089	10/17/57	(300 bp) — Monthly	1,099
CMBX NA BBB-.8 Index	(8,919)	67,000	11,571	10/17/57	(300 bp) — Monthly	2,618
CMBX NA BBB-.8 Index	(6,298)	44,000	7,599	10/17/57	(300 bp) — Monthly	1,279
CMBX NA BBB-.8 Index	(5,828)	42,000	7,253	10/17/57	(300 bp) — Monthly	1,405
CMBX NA BBB-.9 Index	(1,183)	5,000	857	9/17/58	(300 bp) — Monthly	(328)
Credit Suisse International						
CMBX NA BB.10 Index	(3,202)	24,000	7,807	11/17/59	(500 bp) — Monthly	4,585
CMBX NA BB.10 Index	(2,854)	24,000	7,807	11/17/59	(500 bp) — Monthly	4,933
CMBX NA BB.10 Index	(1,616)	13,000	4,229	11/17/59	(500 bp) — Monthly	2,602
Goldman Sachs International						
CMBX NAA.6 Index	(4,583)	37,600	3,700	5/11/63	(200 bp) — Monthly	(896)
CMBX NAA.6 Index	(1,482)	13,600	1,338	5/11/63	(200 bp) — Monthly	(149)
CMBX NAA.6 Index	(1,031)	9,600	945	5/11/63	(200 bp) — Monthly	(90)
CMBX NAA.6 Index	(629)	6,400	630	5/11/63	(200 bp) — Monthly	(2)
CMBX NAA.6 Index	(333)	3,200	315	5/11/63	(200 bp) — Monthly	(20)
CMBX NAA.6 Index	(248)	2,400	236	5/11/63	(200 bp) — Monthly	(12)
CMBX NAA.6 Index	(244)	2,400	236	5/11/63	(200 bp) — Monthly	(9)
CMBX NAA.6 Index	(193)	1,600	157	5/11/63	(200 bp) — Monthly	(36)
CMBX NAA.6 Index	(165)	1,600	157	5/11/63	(200 bp) — Monthly	(8)
CMBX NAA.6 Index	(163)	1,600	157	5/11/63	(200 bp) — Monthly	(6)
CMBX NAA.6 Index	(66)	800	79	5/11/63	(200 bp) — Monthly	12

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION PURCHASED at 6/30/22 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Upfront premium received (paid)**	Notional amount	Value	Termination date	Payments (paid) by fund	Unrealized appreciation/ (depreciation)
Goldman Sachs International cont.						
CMBX NA BB.8 Index	\$(15,652)	\$44,450	\$16,504	10/17/57	(500 bp) — Monthly	\$815
CMBX NA BB.8 Index	(6,660)	18,360	6,817	10/17/57	(500 bp) — Monthly	142
CMBX NA BB.8 Index	(6,671)	18,360	6,817	10/17/57	(500 bp) — Monthly	130
CMBX NA BB.8 Index	(7,000)	18,360	6,817	10/17/57	(500 bp) — Monthly	(198)
CMBX NA BB.8 Index	(5,039)	13,528	5,023	10/17/57	(500 bp) — Monthly	(28)
CMBX NA BB.8 Index	(906)	7,731	2,870	10/17/57	(500 bp) — Monthly	1,958
CMBX NA BBB-.10 Index	(3,500)	16,000	2,789	11/17/59	(300 bp) — Monthly	(719)
CMBX NA BBB-.14 Index	(4,157)	66,000	13,768	12/16/72	(300 bp) — Monthly	9,578
CMBX NA BBB-.14 Index	(579)	9,000	1,877	12/16/72	(300 bp) — Monthly	1,294
CMBX NA BBB-.6 Index	(39,785)	131,135	30,056	5/11/63	(300 bp) — Monthly	(9,795)
JPMorgan Securities LLC						
CMBX NAA.6 Index	(162)	1,600	157	5/11/63	(200 bp) — Monthly	(5)
CMBX NAA.6 Index	(81)	800	79	5/11/63	(200 bp) — Monthly	(3)
CMBX NA BB.11 Index	(5,148)	9,198	3,573	5/11/63	(500 bp) — Monthly	(1,582)
CMBX NA BB.11 Index	(545)	1,000	196	11/18/54	(500 bp) — Monthly	(350)
CMBX NA BB.8 Index	(16,356)	31,888	11,840	10/17/57	(500 bp) — Monthly	(4,542)
CMBX NA BBB-.10 Index	(21,940)	174,000	30,328	11/17/59	(300 bp) — Monthly	8,301
CMBX NA BBB-.14 Index	(4,937)	81,000	16,897	12/16/72	(300 bp) — Monthly	11,919
CMBX NA BBB-.14 Index	(10,479)	62,000	12,933	12/16/72	(300 bp) — Monthly	2,423
CMBX NA BBB-.6 Index	(87,642)	352,985	80,904	5/11/63	(300 bp) — Monthly	(6,914)
CMBX NA BBB-.7 Index	(56,108)	239,000	44,669	1/17/47	(300 bp) — Monthly	(11,559)
CMBX NA BBB-.8 Index	(11,516)	83,000	14,334	10/17/57	(300 bp) — Monthly	2,776
Merrill Lynch International						
CMBX NA BB.10 Index	(1,366)	24,000	7,807	11/17/59	(500 bp) — Monthly	6,422
CMBX NA BBB-.10 Index	(6,933)	32,000	5,578	11/17/59	(300 bp) — Monthly	(1,372)
Morgan Stanley & Co. International PLC						
CMBX NAA.6 Index	(5,038)	41,600	4,093	5/11/63	(200 bp) — Monthly	(959)
CMBX NAA.6 Index	(3,218)	26,400	2,598	5/11/63	(200 bp) — Monthly	(629)
CMBX NAA.6 Index	(2,124)	17,600	1,732	5/11/63	(200 bp) — Monthly	(399)
CMBX NAA.6 Index	(1,626)	13,600	1,338	5/11/63	(200 bp) — Monthly	(292)
CMBX NAA.6 Index	(1,199)	11,200	1,102	5/11/63	(200 bp) — Monthly	(101)
CMBX NAA.6 Index	(503)	4,800	472	5/11/63	(200 bp) — Monthly	(32)
CMBX NAA.6 Index	(490)	4,800	472	5/11/63	(200 bp) — Monthly	(19)
CMBX NA BB.10 Index	(10,024)	33,000	10,735	11/17/59	(500 bp) — Monthly	684
CMBX NA BB.10 Index	(1,154)	11,000	3,578	11/17/59	(500 bp) — Monthly	2,415
CMBX NA BB.8 Index	(12,480)	34,787	12,917	10/17/57	(500 bp) — Monthly	408
CMBX NA BB.8 Index	(8,092)	21,259	7,893	10/17/57	(500 bp) — Monthly	(216)
CMBX NA BB.8 Index	(6,701)	18,360	6,817	10/17/57	(500 bp) — Monthly	100
CMBX NA BB.8 Index	(6,242)	16,427	6,099	10/17/57	(500 bp) — Monthly	(157)
CMBX NA BB.8 Index	(3,174)	8,697	3,229	10/17/57	(500 bp) — Monthly	48
CMBX NA BB.8 Index	(2,174)	5,798	2,153	10/17/57	(500 bp) — Monthly	(26)
CMBX NA BB.9 Index	(4,754)	33,000	9,659	9/17/58	(500 bp) — Monthly	4,878
CMBX NA BB.9 Index	(2,309)	27,000	7,903	9/17/58	(500 bp) — Monthly	5,571
CMBX NA BB.9 Index	(2,188)	16,000	4,683	9/17/58	(500 bp) — Monthly	2,482
CMBX NA BB.9 Index	(757)	5,000	1,464	9/17/58	(500 bp) — Monthly	703
CMBX NA BBB-.10 Index	(19,618)	159,000	27,714	11/17/59	(300 bp) — Monthly	8,016
CMBX NA BBB-.10 Index	(11,034)	87,000	15,164	11/17/59	(300 bp) — Monthly	4,087
CMBX NA BBB-.10 Index	(7,188)	83,000	14,467	11/17/59	(300 bp) — Monthly	7,238
CMBX NA BBB-.10 Index	(9,946)	59,000	10,284	11/17/59	(300 bp) — Monthly	308
CMBX NA BBB-.10 Index	(8,751)	37,000	6,449	11/17/59	(300 bp) — Monthly	(2,320)
CMBX NA BBB-.10 Index	(7,801)	32,000	5,578	11/17/59	(300 bp) — Monthly	(2,240)
CMBX NA BBB-.10 Index	(3,171)	25,000	4,358	11/17/59	(300 bp) — Monthly	1,174
CMBX NA BBB-.10 Index	(4,005)	23,000	4,009	11/17/59	(300 bp) — Monthly	(8)

OTC CREDIT DEFAULT CONTRACTS OUTSTANDING — PROTECTION PURCHASED at 6/30/22 (Unaudited) cont.

Swap counterparty/ Referenced debt*	Upfront premium received (paid)**	Notional amount	Value	Termi- nation date	Payments (paid) by fund	Unrealized appreciation/ (depreciation)
Morgan Stanley & Co. International PLC cont.						
CMBX NA BBB-.10 Index	\$(4,362)	\$19,000	\$3,312	11/17/59	(300 bp) — Monthly	\$(1,060)
CMBX NA BBB-.10 Index	(1,993)	19,000	3,312	11/17/59	(300 bp) — Monthly	1,309
CMBX NA BBB-.10 Index	(3,929)	18,000	3,137	11/17/59	(300 bp) — Monthly	(801)
CMBX NA BBB-.10 Index	(2,168)	10,000	1,743	11/17/59	(300 bp) — Monthly	(430)
CMBX NA BBB-.10 Index	(1,946)	9,000	1,569	11/17/59	(300 bp) — Monthly	(382)
CMBX NA BBB-.11 Index	(2,361)	15,000	2,417	11/18/54	(300 bp) — Monthly	48
CMBX NA BBB-.12 Index	(5,797)	28,000	5,040	8/17/61	(300 bp) — Monthly	(771)
CMBX NA BBB-.12 Index	(2,921)	14,000	2,520	8/17/61	(300 bp) — Monthly	(408)
CMBX NA BBB-.12 Index	(1,237)	4,000	720	8/17/61	(300 bp) — Monthly	(519)
CMBX NA BBB-.13 Index	(4,191)	68,000	13,559	12/16/72	(300 bp) — Monthly	9,334
CMBX NA BBB-.14 Index	(24,372)	154,000	32,124	12/16/72	(300 bp) — Monthly	7,675
CMBX NA BBB-.14 Index	(21,322)	133,000	27,744	12/16/72	(300 bp) — Monthly	6,355
CMBX NA BBB-.14 Index	(810)	13,000	2,712	12/16/72	(300 bp) — Monthly	1,895
CMBX NA BBB-.7 Index	(4,063)	64,000	11,962	1/17/47	(300 bp) — Monthly	7,866
CMBX NA BBB-.8 Index	(10,734)	75,000	12,953	10/17/57	(300 bp) — Monthly	2,181
CMBX NA BBB-.8 Index	(8,951)	66,000	11,398	10/17/57	(300 bp) — Monthly	2,414
CMBX NA BBB-.8 Index	(8,993)	66,000	11,398	10/17/57	(300 bp) — Monthly	2,373
CMBX NA BBB-.8 Index	(9,409)	60,000	10,362	10/17/57	(300 bp) — Monthly	923
CMBX NA BBB-.8 Index	(9,141)	59,000	10,189	10/17/57	(300 bp) — Monthly	1,018
CMBX NA BBB-.8 Index	(9,063)	58,000	10,017	10/17/57	(300 bp) — Monthly	925
CMBX NA BBB-.8 Index	(6,090)	48,000	8,290	10/17/57	(300 bp) — Monthly	2,176
CMBX NA BBB-.8 Index	(6,112)	48,000	8,290	10/17/57	(300 bp) — Monthly	1,992
CMBX NA BBB-.8 Index	(2,660)	19,000	3,281	10/17/57	(300 bp) — Monthly	612
CMBX NA BBB-.8 Index	(2,401)	17,000	2,936	10/17/57	(300 bp) — Monthly	526
CMBX NA BBB-.8 Index	(1,916)	14,000	2,418	10/17/57	(300 bp) — Monthly	495
CMBX NA BBB-.8 Index	(622)	4,000	691	10/17/57	(300 bp) — Monthly	67
Upfront premium received	—					Unrealized appreciation
						262,014
Upfront premium (paid)	(961,046)					Unrealized (depreciation)
						(91,999)
Total	\$(961,046)		Total			\$170,015

* 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:

	Valuation inputs		
	Level 1	Level 2	Level 3
Investments in securities:			
Asset-backed securities	\$—	\$988,402	\$—
Mortgage-backed securities	—	26,779,763	—
Purchased options outstanding	—	336,446	—
Purchased swap options outstanding	—	244,864	—
U.S. government and agency mortgage obligations	—	29,689,466	—
Short-term investments	150,000	8,771,284	—
Totals by level	\$150,000	\$66,810,225	\$—

	Valuation inputs		
	Level 1	Level 2	Level 3
Other financial instruments:			
Futures contracts	\$255,427	\$—	\$—
Written options outstanding	—	(262,000)	—
Written swap options outstanding	—	(2,075,894)	—
Forward premium swap option contracts	—	(147,185)	—
TBA sale commitments	—	(16,101,013)	—
Interest rate swap contracts	—	846,430	—
Credit default contracts	—	(2,420,633)	—
Totals by level	\$255,427	\$(20,160,295)	\$—

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

6/30/22 (Unaudited)

Assets

Investment in securities, at value (Notes 1 and 8):	
Unaffiliated issuers (identified cost \$66,911,427)	\$64,672,829
Affiliated issuers (identified cost \$2,287,396) (Notes 1 and 5)	2,287,396
Cash	75,157
Interest and other receivables	296,564
Receivable for shares of the fund sold	4,683
Receivable for investments sold	342,717
Receivable for sales of TBA securities (Note 1)	27,230,790
Receivable from Manager (Note 2)	33,648
Receivable for variation margin on centrally cleared swap contracts (Note 1)	255,909
Unrealized appreciation on forward premium swap option contracts (Note 1)	2,499,508
Unrealized appreciation on OTC swap contracts (Note 1)	465,154
Premium paid on OTC swap contracts (Note 1)	965,373
Total assets	99,129,728

Liabilities

Payable for investments purchased	667,438
Payable for purchases of TBA securities (Note 1)	38,199,375
Payable for shares of the fund repurchased	28,215
Payable for custodian fees (Note 2)	29,134
Payable for investor servicing fees (Note 2)	4,084
Payable for Trustee compensation and expenses (Note 2)	51,045
Payable for administrative services (Note 2)	125
Payable for distribution fees (Note 2)	3,472
Payable for variation margin on futures contracts (Note 1)	115,851
Payable for variation margin on centrally cleared swap contracts (Note 1)	352,952
Unrealized depreciation on OTC swap contracts (Note 1)	1,903,188
Premium received on OTC swap contracts (Note 1)	1,947,972
Unrealized depreciation on forward premium swap option contracts (Note 1)	2,646,693
Written options outstanding, at value (premiums \$2,791,483) (Note 1)	2,337,894
TBA sale commitments, at value (proceeds receivable \$15,993,711) (Note 1)	16,101,013
Collateral on certain derivative contracts, at value (Notes 1 and 8)	150,000
Other accrued expenses	48,882
Total liabilities	64,587,333
Net assets	\$34,542,395

Represented by

Paid-in capital (Unlimited shares authorized) (Notes 1 and 4)	\$57,867,934
Total distributable earnings (Note 1)	(23,325,539)
Total — Representing net assets applicable to capital shares outstanding	\$34,542,395

Computation of net asset value Class IA

Net assets	\$17,760,062
Number of shares outstanding	2,381,817
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$7.46

Computation of net asset value Class IB

Net assets	\$16,782,333
Number of shares outstanding	2,258,411
Net asset value, offering price and redemption price per share (net assets divided by number of shares outstanding)	\$7.43

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

Statement of operations

Six months ended 6/30/22 (Unaudited)

Investment income

Interest (including interest income of \$4,400 from investments in affiliated issuers) (Note 5)	\$1,006,843
Total investment income	1,006,843

Expenses

Compensation of Manager (Note 2)	70,372
Investor servicing fees (Note 2)	12,884
Custodian fees (Note 2)	28,032
Trustee compensation and expenses (Note 2)	773
Distribution fees (Note 2)	21,851
Administrative services (Note 2)	369
Reports to shareholders	9,762
Auditing and tax fees	41,233
Other	8,835
Fees waived and reimbursed by Manager (Note 2)	(80,936)
Total expenses	113,175
Expense reduction (Note 2)	(121)
Net expenses	113,054
Net investment income	893,789

Realized and unrealized gain (loss)

Net realized gain (loss) on:	
Securities from unaffiliated issuers (Notes 1 and 3)	(4,042,522)
Futures contracts (Note 1)	1,863,200
Swap contracts (Note 1)	(1,958,592)
Written options (Note 1)	(2,762,688)
Total net realized loss	(6,900,602)
Change in net unrealized appreciation (depreciation) on:	
Securities from unaffiliated issuers and TBA sale commitments	715,448
Futures contracts	252,967
Swap contracts	2,677,574
Written options	(2,242)
Total change in net unrealized appreciation	3,643,747
Net loss on investments	(3,256,855)
Net decrease in net assets resulting from operations	\$(2,363,066)

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

Statement of changes in net assets

	Six months ended 6/30/22*	Year ended 12/31/21
Decrease in net assets		
Operations:		
Net investment income	\$893,789	\$1,962,256
Net realized loss on investments	(6,900,602)	(1,957,562)
Change in net unrealized appreciation (depreciation) of investments	3,643,747	(1,580,884)
Net decrease in net assets resulting from operations	(2,363,066)	(1,576,190)
Distributions to shareholders (Note 1):		
From ordinary income		
Net investment income		
Class IA	(1,724,359)	—
Class IB	(1,487,430)	—
Decrease from capital share transactions (Note 4)	(694,171)	(4,359,618)
Total decrease in net assets	(6,269,026)	(5,935,808)
Net assets:		
Beginning of period	40,811,421	46,747,229
End of period	\$34,542,395	\$40,811,421

* Unaudited.

Financial highlights

(For a common share outstanding throughout the period)

Period ended	INVESTMENT OPERATIONS:				LESS DISTRIBUTIONS:				RATIOS AND SUPPLEMENTAL DATA:					
	Net asset value, beginning of period	Net investment income (loss) ^a	Net realized and unrealized gain (loss) on investments	Total from investment operations	From net investment income	From net realized gain on investments	From return of capital	Total distributions	Net asset value, end of period	Total return at net asset value (%) ^{b,c}	Net assets, end of period (in thousands)	Ratio of expenses to average net assets (%) ^{b,d}	Ratio of net investment income (loss) to average net assets (%)	Portfolio turnover (%) ^e
Class IA														
6/30/22 †	\$8.74	.20	(.72)	(.52)	(.76)	—	—	(.76)	\$7.46	(6.31)*	\$17,760	.25*f	2.49*f	874*
12/31/21	9.05	.40	(.71)	(.31)	—	—	—	—	8.74	(3.43)	20,386	.50f	4.44f	904
12/31/20	10.18	.35	(.57)	(.22)	(.87)	(.02)	(.02)	(.91)	9.05	(1.29)	26,269	.50f	3.89f	895
12/31/19	9.21	.36	.85	1.21	(.24)	—	—	(.24)	10.18	13.36	31,822	.50f	3.68f	1,171
12/31/18	9.55	.35	(.41)	(.06)	(.28)	—	—	(.28)	9.21	(.62)	31,249	.56f	3.80f	1,142
12/31/17	9.59	.27	(.06)	.21	(.25)	—	—	(.25)	9.55	2.27	35,852	.66	2.85	1,188
Class IB														
6/30/22 †	\$8.69	.19	(.71)	(.52)	(.74)	—	—	(.74)	\$7.43	(6.42)*	\$16,782	.37*f	2.37*f	874*
12/31/21	9.02	.38	(.71)	(.33)	—	—	—	—	8.69	(3.66)	20,425	.75f	4.19f	904
12/31/20	10.16	.33	(.58)	(.25)	(.85)	(.02)	(.02)	(.89)	9.02	(1.68)	20,478	.75f	3.64f	895
12/31/19	9.18	.33	.86	1.19	(.21)	—	—	(.21)	10.16	13.20	26,965	.75f	3.44f	1,171
12/31/18	9.52	.33	(.41)	(.08)	(.26)	—	—	(.26)	9.18	(.90)	23,232	.81f	3.54f	1,142
12/31/17	9.56	.25	(.07)	.18	(.22)	—	—	(.22)	9.52	1.96	27,524	.91	2.60	1,188

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.

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

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

^c Total return assumes dividend reinvestment.

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

^e Portfolio turnover includes TBA purchase and sale commitments.

^f 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, 2022	0.22%
December 31, 2021	0.28
December 31, 2020	0.24
December 31, 2019	0.22
December 31, 2018	0.25

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

Notes to financial statements 6/30/22 (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, 2022 through June 30, 2022.

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 currently has significant investment exposure to commercial mortgage-backed securities.

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.

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

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 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, if any, 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 pledged to the fund is held in a segregated account by the fund's custodian and, with respect to those amounts which can be sold or repledged, 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 \$4,579,325 on open derivative contracts subject to the Master Agreements. Collateral pledged by the fund at period end for these agreements totaled \$5,295,529 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 Bank Funding Rate for the committed line of credit and 1.30% plus the higher of (1) the Federal Funds rate and (2) the Overnight Bank Funding Rate for the uncommitted line of credit. A closing fee equal to 0.04% of the committed line of credit and 0.04% of the uncommitted line of credit has been paid by the participating funds. In addition, a commitment fee of 0.21% per annum on any unutilized portion of the committed line of credit is allocated to the participating funds based on their relative net assets and paid quarterly. During the reporting period, the fund had no borrowings against these arrangements.

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

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

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, 2021, 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
\$13,450,163	\$1,402,889	\$14,853,052

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 \$49,367,276, resulting in gross unrealized appreciation and depreciation of \$8,036,067 and \$10,347,986, respectively, or net unrealized depreciation of \$2,311,919.

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 32.7% 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 0.191% of the fund's average net assets.

Putnam Management has contractually agreed, through April 30, 2024, 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 \$52,389 as a result of this limit.

Putnam Management has also contractually agreed to waive fees (and, to the extent necessary, bear other expenses) of the fund through April 30, 2024, 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 \$28,547 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 0.20% (prior to July 1, 2022, the annual rate was 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	\$6,714
Class IB	6,170
Total	\$12,884

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 \$121 under the expense offset arrangements.

Each Independent Trustee of the fund receives an annual Trustee fee, of which \$27, as a quarterly retainer, has been allocated to the fund, and an additional fee for each Trustees meeting attended. Trustees also are reimbursed for expenses they incur relating to their services as Trustees.

The fund has adopted a Trustee Fee Deferral Plan (the Deferral Plan) which allows the Trustees to defer the receipt of all or a portion of Trustees fees payable on or after July 1, 1995. The deferred fees remain invested in certain Putnam funds until distribution in accordance with the Deferral Plan.

The fund has adopted an unfunded noncontributory defined benefit pension plan (the Pension Plan) covering all Trustees of the fund who have served as a Trustee for at least five years and were first elected prior to 2004. Benefits under the Pension Plan are equal to 50% of the Trustee's average annual attendance and retainer fees for the three years ended December 31, 2005. The retirement benefit is payable during a Trustee's lifetime, beginning the year following retirement, for the number of years of service through December 31, 2006. Pension expense for the fund is included in Trustee compensation and expenses in the Statement of operations. Accrued pension liability is included in Payable for Trustee compensation and expenses in the Statement of assets and liabilities. The Trustees have terminated the Pension Plan with respect to any Trustee first elected after 2003.

The fund has adopted a distribution plan (the Plan) with respect to its class IB shares pursuant to Rule 12b-1 under the Investment Company Act of 1940. The purpose of the Plan is to compensate Putnam Retail Management Limited Partnership, an indirect wholly-owned subsidiary of Putnam Investments, LLC, for services provided and expenses incurred in distributing shares of the fund. The Plan provides for payment by the fund to Putnam Retail Management Limited Partnership at an annual rate of up to 0.35% of the average net assets attributable to the fund's class IB shares. The Trustees have approved payment by the fund at an annual rate of 0.25% of the average net assets attributable to the fund's class IB

shares. The expenses related to distribution fees during the reporting period are included in Distribution fees in the Statement of operations.

Note 3 — Purchases and sales of securities

During the reporting period, the cost of purchases and the proceeds from sales, excluding short-term investments, were as follows:

	Cost of purchases	Proceeds from sales
Investments in securities, including TBA commitments (Long-term)	\$391,712,065	\$389,608,967
U.S. government securities (Long-term)	—	—
Total	\$391,712,065	\$389,608,967

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 6/30/22		Year ended 12/31/21		Six months ended 6/30/22		Year ended 12/31/21	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Shares sold	20,793	\$172,389	112,155	\$1,018,232	308,877	\$2,482,139	831,192	\$7,646,971
Shares issued in connection with reinvestment of distributions	220,789	1,724,359	—	—	190,941	1,487,430	—	—
	241,582	1,896,748	112,155	1,018,232	499,818	3,969,569	831,192	7,646,971
Shares repurchased	(193,541)	(1,569,667)	(681,507)	(6,198,791)	(591,370)	(4,990,821)	(750,333)	(6,826,030)
Net increase (decrease)	48,041	\$327,081	(569,352)	\$(5,180,559)	(91,552)	\$(1,021,252)	80,859	\$820,941

Note 5 — Affiliated transactions

Transactions during the reporting period with any company which is under common ownership or control were as follows:

Name of affiliate	Fair value as of 12/31/21	Purchase cost	Sale proceeds	Investment income	Shares outstanding and fair value as of 6/30/22
Short-term investments					
Putnam Short Term Investment Fund*	\$4,807,545	\$10,135,071	\$12,655,220	\$4,400	\$2,287,396
Total Short-term investments	\$4,807,545	\$10,135,071	\$12,655,220	\$4,400	\$2,287,396

*Management fees charged to Putnam Short Term Investment Fund have been waived by Putnam Management. There were no realized or unrealized gains or losses during the period.

Note 6 — Market, credit and other risks

In the normal course of business, the fund trades financial instruments and enters into financial transactions where risk of potential loss exists due to changes in the market (market risk) or failure of the contracting party to the transaction to perform (credit risk). The fund may be exposed to additional credit risk that an institution or other entity with which the fund has unsettled or open transactions will default. 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.

On July 27, 2017, the United Kingdom's Financial Conduct Authority ("FCA"), which regulates LIBOR, announced its intention to cease compelling banks to provide the quotations needed to sustain LIBOR after 2021. ICE Benchmark Administration, the administrator of LIBOR, ceased publication of most LIBOR settings on a representative basis at the end of 2021 and is expected to cease publication of a majority of U.S. dollar LIBOR settings on a representative basis after June 30, 2023. In addition, global regulators have announced that, with limited exceptions, no new LIBOR-based contracts should be entered into after 2021. LIBOR has historically been a common benchmark interest rate index used to make adjustments to variable-rate loans. It is used throughout global banking and financial industries to determine interest rates for a variety of financial instruments and borrowing arrangements. Actions by regulators have resulted in the establishment of alternative reference rates to LIBOR in most major currencies. Various financial industry groups have been planning for the transition away from LIBOR, but there are obstacles to converting certain longer-term securities and transactions to new reference rates. Markets are developing slowly and questions around liquidity in these rates and how to appropriately adjust these rates to mitigate any economic value transfer at the time of transition remain a significant concern. Neither the effect of the transition process nor its ultimate success can yet be known. The transition process might lead to increased volatility and illiquidity in markets that rely on LIBOR to determine interest rates. It could also lead to a reduction in the value of some LIBOR-based investments and reduce the effectiveness of related transactions, such as hedges. While some LIBOR-based instruments may contemplate a scenario where LIBOR is no longer available by providing for an alternative rate-setting methodology, not all may have such provisions and there may be significant uncertainty regarding the effectiveness of any such alternative methodologies. Since the usefulness of LIBOR as a benchmark could deteriorate during the transition period, these effects could occur at any time.

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

Note 7 — Summary of derivative activity

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

Purchased TBA commitment option contracts (contract amount)	\$35,100,000
Purchased swap option contracts (contract amount)	\$151,300,000
Written TBA commitment option contracts (contract amount)	\$35,100,000
Written swap option contracts (contract amount)	\$117,200,000
Futures contracts (number of contracts)	300
Centrally cleared interest rate swap contracts (notional)	\$84,800,000
Centrally cleared total return swap contracts (notional)	\$760,000
OTC credit default contracts (notional)	\$22,700,000

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	\$1,131,061	Payables	\$3,551,694
Interest rate contracts	Investments, Receivables, Net assets — Unrealized appreciation	5,455,903*	Payables, Net assets — Unrealized depreciation	6,257,815*
Total		\$6,586,964		\$9,809,509

*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	\$—	\$—	\$(827,555)	\$(827,555)
Interest rate contracts	(3,582,200)	1,863,200	(1,131,037)	\$(2,850,037)
Total	\$(3,582,200)	\$1,863,200	\$(1,958,592)	\$(3,677,592)

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	\$—	\$—	\$1,652,505	\$1,652,505
Interest rate contracts	527,310	252,967	1,025,069	\$1,805,346
Total	\$527,310	\$252,967	\$2,677,574	\$3,457,851

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Note 8 — Offsetting of financial and derivative assets and liabilities

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

	Bank of America N.A.	Barclays Bank PLC	Barclays Capital, Inc. (clearing broker)	Citibank, N.A.	Citigroup Global Markets, Inc.	Credit Suisse International	Deutsche Bank AG
Assets:							
Centrally cleared interest rate swap contracts [§]	\$—	\$—	\$255,909	\$—	\$—	\$—	\$—
OTC Credit default contracts — protection sold**	—	—	—	—	—	—	—
OTC Credit default contracts — protection purchased**	—	—	—	—	401,643	19,792	—
Futures contracts [§]	—	—	—	—	—	—	—
Forward premium swap option contracts [#]	709,007	107,943	—	790,943	—	—	202,606
Purchased swap options**#	1,655	—	—	—	—	—	—
Purchased options**#	—	—	—	—	—	—	—
Total Assets	\$710,662	\$107,943	\$255,909	\$790,943	\$401,643	\$19,792	\$202,606
Liabilities:							
Centrally cleared interest rate swap contracts [§]	—	—	352,952	—	—	—	—
OTC Credit default contracts — protection sold**	—	—	—	—	1,125,019	237,685	103,939
OTC Credit default contracts — protection purchased**	—	—	—	—	—	—	—
Futures contracts [§]	—	—	—	—	—	—	—
Forward premium swap option contracts [#]	843,188	95,625	—	666,342	—	—	229,370
Written swap options [#]	504,731	—	—	167,237	—	—	—
Written options [#]	—	—	—	—	—	—	—
Total Liabilities	\$1,347,919	\$95,625	\$352,952	\$833,579	\$1,125,019	\$237,685	\$333,309
Total Financial and Derivative Net Assets	\$(637,257)	\$12,318	\$(97,043)	\$(42,636)	\$(723,376)	\$(217,893)	\$(130,703)
Total collateral received (pledged)†##	\$(637,257)	\$—	\$—	\$—	\$(723,376)	\$(217,893)	\$(110,956)
Net amount	\$—	\$12,318	\$(97,043)	\$(42,636)	\$—	\$—	\$(19,747)
<i>Controlled collateral received (including TBA commitments)**</i>	\$—	\$—	\$—	\$—	\$—	\$—	\$—
<i>Uncontrolled collateral received</i>	\$—	\$—	\$—	\$—	\$—	\$—	\$—
<i>Collateral (pledged) (including TBA commitments)**</i>	\$(733,575)	\$—	\$—	\$—	\$(782,268)	\$(272,891)	\$(110,956)

* Excludes premiums, if any. Included in unrealized appreciation and depreciation on OTC swap contracts on the Statement of assets and liabilities.

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

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

Covered by master netting agreement (Note 1).

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

§ Includes current day's variation margin only as reported on the Statement of assets and liabilities, which is not collateralized. Cumulative appreciation/(depreciation) for futures contracts and centrally cleared swap contracts is represented in the tables listed after the fund's portfolio. Collateral pledged for initial margin on futures contracts and centrally cleared swap contracts, which is not included in the table above, amounted to \$228,805 and \$420,666, respectively.

Goldman Sachs International	JPMorgan Chase Bank N.A.	JPMorgan Securities LLC	Merrill Lynch International	Morgan Stanley & Co. International PLC	Toronto-Dominion Bank	UBS AG	Wells Fargo Bank, N.A.	Total
\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$255,909
—	—	—	—	—	—	—	—	—
101,047	—	215,378	13,349	379,852	—	—	—	1,131,061
—	—	—	—	—	—	—	—	—
34,866	263,563	—	—	1,125	39,551	162,310	187,594	2,499,508
—	—	—	—	243,209	—	—	—	244,864
—	336,446	—	—	—	—	—	—	336,446
\$135,913	\$600,009	\$215,378	\$13,349	\$624,186	\$39,551	\$162,310	\$187,594	\$4,467,788
—	—	—	—	—	—	—	—	352,952
387,074	—	35,444	156,027	1,506,506	—	—	—	3,551,694
—	—	—	—	—	—	—	—	—
—	—	115,851	—	—	—	—	—	115,851
297,649	261,715	—	—	17,882	23,767	86,232	124,923	2,646,693
178,912	286,304	—	—	793,900	31,703	113,107	—	2,075,894
—	262,000	—	—	—	—	—	—	262,000
\$863,635	\$810,019	\$151,295	\$156,027	\$2,318,288	\$55,470	\$199,339	\$124,923	\$9,005,084
\$(727,722)	\$(210,010)	\$64,083	\$(142,678)	\$(1,694,102)	\$(15,919)	\$(37,029)	\$62,671	\$(4,537,296)
\$(727,722)	\$(210,010)	\$64,083	\$(142,678)	\$(1,686,004)	\$—	\$(19,980)	\$—	
\$—	\$—	\$—	\$—	\$(8,098)	\$(15,919)	\$(17,049)	\$62,671	
\$—	\$—	\$150,000	\$—	\$—	\$—	\$—	\$—	\$150,000
\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$—
\$(746,575)	\$(719,450)	\$—	\$(223,830)	\$(1,686,004)	\$—	\$(19,980)	\$—	\$(5,295,529)

Shareholder meeting results (Unaudited)

June 29, 2022 special meeting

At the meeting, each of the nominees for Trustees was elected, with all funds of the Trust voting together as a single class, as follows:

	Votes for	Votes withheld
Liaquat Ahamed	367,407,973	17,233,651
Barbara M. Baumann	368,543,732	16,097,891
Katinka Domotorffy	370,405,107	14,236,517
Catharine Bond Hill	368,981,588	15,660,035
Kenneth R. Leibler	368,097,861	16,543,762
Jennifer W. Murphy	369,061,225	15,580,398
Marie Pillai	369,504,026	15,137,598
George Putnam, III	368,189,409	16,452,215
Robert L. Reynolds	369,089,761	15,551,863
Manoj P. Singh	369,110,059	15,531,565
Mona K. Sutphen	371,262,782	13,378,842

All tabulations are rounded to the nearest whole number.

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 considered any possible changes to the annual contract review materials furnished to the Contract Committee during the course of the previous year's review and, as applicable, identified those changes to Putnam Management. 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 2022, 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 2022, 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 2022 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 contract and the approval of your fund's amended and restated sub-management contract, effective July 1, 2022. (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 any 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 certain exceptions primarily involving newer or repositioned funds, the current fee arrangements under the vast majority of the funds' 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. Under its management contract, your fund has the benefit of breakpoints in its management fee schedule that provide shareholders with reduced fee levels as assets under management in the Putnam family of funds increase. 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.) The Trustees considered that the proposed amended and restated sub-management contract would lower the sub-management fees paid by Putnam Management to PIL.

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 schedule for your fund would be appropriate at this time.

As in the past, the Trustees also focused on the competitiveness of each fund's total expense ratio. 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 2021. These expense limitations were: (i) a contractual expense limitation applicable to specified open-end funds, including your fund, 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 2021. However, in the case of your fund, the second expense limitation applied during its fiscal year ending in 2021. Putnam Management and PSERV have agreed to maintain these expense limitations until at least April 30, 2024. 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, 2024. During its fiscal year ending in 2021, your fund's expenses were reduced as a result of this expense limitation. Putnam Management and PSERV's commitment to these expense limitation arrangements, which were intended to support an effort to have fund expenses meet competitive standards, was an important factor in the Trustees' decision to approve the continuance of your fund's management contract and to approve your fund's amended and restated sub-management contract.

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, 2021. 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, 2021 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 the revenues, expenses and profitability of Putnam Management and its affiliates, 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 for the Putnam funds, including the fee schedule for your fund, represented reasonable compensation for the services being provided and represented an appropriate sharing between fund shareholders and Putnam Management of any 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 services provided and fees charged by Putnam Management

and its affiliates to other clients, including collective investment trusts offered in the defined contribution and defined benefit retirement plan markets, sub-advised mutual funds, private funds sponsored by affiliates of Putnam Management, model-only separately managed accounts and Putnam Management's exchange-traded funds. This information included, in cases where a 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 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 marketplaces. The Trustees considered the fact that in many cases fee rates across different asset classes are higher on average for mutual funds than for other 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 Putnam Management's 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 individual portfolio managers and with senior management 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, in the aggregate, the Putnam funds' performance was generally solid in 2021 against a backdrop of strong U.S. economic and financial market growth. The Trustees considered Putnam Management's observation that, despite an environment of generally strong growth, there had been various headwinds experienced in 2021. For the one-year period ended December 31, 2021, the Trustees noted that the Putnam funds, on an asset-weighted basis, ranked in the 52nd percentile of their peers as determined by Lipper Inc. ("Lipper") and, on an asset-weighted-basis, delivered a gross return that trailed their benchmarks by 0.1%. Over the longer-term, the Committee noted that, on an asset-weighted basis, the Putnam funds delivered strong aggregate performance relative to their Lipper peers over the three-, five- and ten-year periods ended December 31, 2021, ranking in the 31st, 29th and 21st percentiles, respectively, and that the funds, in the aggregate, outperformed their benchmarks on a gross basis for each of those periods.

In addition to the performance of the individual Putnam funds, the Trustees considered, as they had in prior years, the performance of The Putnam Fund complex versus competitor fund complexes. In particular, the Trustees considered The Putnam Fund complex's performance as reported in the Barron's/Lipper Fund Families survey (the "Survey"),

which ranks mutual fund companies based on their performance across a variety of asset types. The Trustees noted that The Putnam Fund complex continued to rank highly in the Survey, especially over the longer-term, with The Putnam Funds ranking as the 6th best performing mutual fund complex out of 45 complexes for the ten-year period and 13th out of 49 complexes for the five-year period. The Trustees noted that 2021 marked the fifth consecutive year that The Putnam Funds have ranked in the top ten fund complexes for the ten-year period. The Trustees also considered that The Putnam Fund complex's Survey performance over the one-year period was solid, with The Putnam Funds ranking 27th out of 51 complexes. In addition to the Survey, the Trustees also considered the Putnam funds' ratings assigned by Morningstar Inc., noting that 25 of the funds were four- or five-star rated at the end of 2021 (representing a decrease of one fund year-over-year) and that this included nine funds that had achieved a five-star rating (representing an increase of two funds year-over-year). They also noted, however, the disappointing investment performance of some Putnam funds for periods ended December 31, 2021 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 and evaluate whether additional actions to address areas of underperformance may be 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 to 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) — U.S. Mortgage Funds) for the one-year, three-year and five-year periods ended December 31, 2021 (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	3rd	4th

Over the one-year, three-year and five-year periods ended December 31, 2021, there were 13, 13 and 11 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 and five-year periods ended December 31, 2021 (the fund was repositioned on April 30, 2018 and, therefore, the fund's performance prior to that date occurred when the fund was managed with a materially different investment strategy) and considered the circumstances that may have contributed to this disappointing performance. The Trustees considered Putnam Management's observation that significant underperformance in the securitized products sector in 2021 had contributed to the fund's disappointing results, noting that prepayment strategies had suffered as a result of significantly elevated refinancing (given strong home price appreciation and low interest rates) relative to expectations. The Trustees considered that the fund's underperformance was also driven by significant underperformance in

the securitized products sector in 2020, which resulted from the outsized impact of the COVID-19 pandemic on the commercial mortgage sector. In addition, the Trustees considered the negative impact that the fund's term structure strategies had on performance in 2021 and Putnam Management's observation that term structure strategies had positively contributed to the fund's performance in 2019 and 2020 and over the three-year period ended December 31, 2021.

The Trustees considered Putnam Management's observation that a number of the investment strategies that had detracted from the fund's performance had begun to recover as of March 31, 2022 and that the fund had solid performance year to date relative to its peers, as of March 31, 2022. The Trustees noted 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 certain initiatives, including structuring compensation for portfolio managers 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 and internal promotions in 2021 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. The Trustees also considered that Putnam Management has made changes in light of subpar investment performance when warranted. Based on Putnam Management's willingness to take appropriate measures to address fund performance issues, the Trustees concluded that it continued 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 soft-dollar allocations; investor servicing

The Trustees considered various potential benefits that Putnam Management may receive in connection with the services it provides under the management contract with your fund. These include benefits related to brokerage allocation and the use of soft dollars, whereby a portion of the commissions paid by a fund for brokerage may be used to acquire research services that are expected to be useful to Putnam Management in managing the assets of the fund and of other clients. Subject to policies established by the Trustees, soft dollars generated by these means are used predominantly to acquire brokerage and research services (including third-party research and market data) that enhance Putnam Management's investment capabilities and supplement Putnam Management's internal research efforts. The Trustees indicated their continued intent to monitor regulatory and industry developments in this area with the assistance of their Brokerage Committee. In addition, with the assistance of their Brokerage Committee, the Trustees 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 contract 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 investor services provided by PSERV 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, 2022, are available in the Individual Investors section of putnam.com and on the Securities and Exchange Commission's (SEC) website at www.sec.gov. If you have questions about finding forms on the SEC's website, you may call the SEC at 1-800-SEC-0330. You may also obtain the Putnam funds' proxy voting guidelines and procedures at no charge by calling Putnam's Shareholder Services at 1-800-225-1581.

Fund portfolio holdings

The fund will file a complete schedule of its portfolio holdings with the SEC for the first and third quarters of each fiscal year on Form N-PORT within 60 days of the end of such fiscal quarter. Shareholders may obtain the fund's Form N-PORT from the SEC's website at www.sec.gov.

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

Liquidity risk management program

Putnam, as the administrator of the fund's liquidity risk management program (appointed by the Board of Trustees), presented the most recent annual report on the program to the Trustees in April 2022. The report covered the structure of the program, including the program documents and related policies and procedures adopted to comply with Rule 22e-4 under the Investment Company Act of 1940, and reviewed the operation of the program from January 2021 through December 2021. The report included a description of the annual liquidity assessment of the fund that Putnam performed in November 2021. The report noted that there were no material compliance exceptions identified under Rule 22e-4 during the period. The report included a review of the governance of the program and the methodology for classification of the fund's investments. The report also included a discussion of liquidity monitoring during the period, including during the market liquidity challenges caused by the Covid-19 pandemic, and the impact those challenges had on the liquidity of the fund's investments. Putnam concluded that the program has been operating effectively and adequately to ensure compliance with Rule 22e-4.

Fund information

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Investment Sub-Advisor

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Catharine Bond Hill
Jennifer Williams Murphy
Marie Pillai
George Putnam, III
Robert L. Reynolds
Manoj P. Singh
Mona K. Sutphen

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

