



KPMG LLP
One Financial Plaza
755 Main Street
Hartford, CT 06103

Report of Independent Registered Public Accounting Firm

The Board of Directors of Massachusetts Mutual Life Insurance Company and Contract Owners of Massachusetts Mutual Variable Annuity Separate Account 3:

Opinion on the Financial Statements

We have audited the accompanying statements of assets and liabilities of Massachusetts Mutual Variable Annuity Separate Account 3 (comprised of the divisions listed in Appendix A to the opinion) (collectively, “the Separate Account”) as of December 31, 2018, the related statements of operations and changes in net assets for each of the years in the two-year period then ended, and the related notes (collectively, the “financial statements”) and the financial highlights for each of the years in the five-year period then ended (collectively, the “financial highlights”). In our opinion, the financial statements and financial highlights present fairly, in all material respects, the financial position of the Separate Account as of December 31, 2018, the results of its operations and changes in its net assets for each of the years in the two-year period then ended, and the financial highlights for each of the years in the five-year period then ended, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements and financial highlights are the responsibility of the Separate Account’s management. Our responsibility is to express an opinion on these financial statements and financial highlights based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Separate Account in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements and financial highlights are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements and financial highlights, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements and financial highlights. Such procedures also included confirmation of securities owned as of December 31, 2018, by correspondence with the underlying mutual funds or their transfer agent. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements and financial highlights. We believe that our audits provide a reasonable basis for our opinion.

KPMG LLP

We have served as the Separate Account’s auditor since 2004.

Hartford, Connecticut
March 19, 2019

KPMG LLP is a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.

Appendix A

Massachusetts Mutual Variable Annuity Separate Account 3 is comprised of the following divisions and the activities of each division have been included within the accompanying statements of assets and liabilities as of December 31, 2018 and the related statements of operations and changes in net assets for each of the years in the two-year period then ended.

Divisions

MML Blend Division

MML Equity Division

MML Managed Bond Division

MML U.S. Government Money Market Division

Oppenheimer Capital Appreciation Division

Oppenheimer Conservative Balanced Division

Oppenheimer Discovery Mid Cap Growth Division

Oppenheimer Global Division

Oppenheimer Global Strategic Income Division

Oppenheimer Government Money Division

Oppenheimer Main Street Division

Oppenheimer Main Street Small Cap Division

Oppenheimer Total Return Bond Division

Massachusetts Mutual Variable Annuity Separate Account 3

STATEMENTS OF ASSETS AND LIABILITIES

December 31, 2018

	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division	Oppenheimer Conservative Balanced Division	Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Global Division
ASSETS								
Investments								
Number of shares	54,366	64,818	63,517	248,071	178,459	99,047	81,101	213,668
Identified cost	\$1,104,473	\$1,503,902	\$ 809,569	\$ 248,073	\$8,462,750	\$1,224,505	\$4,771,971	\$6,575,201
Value	\$1,106,235	\$1,566,138	\$ 758,038	\$ 248,071	\$8,655,240	\$1,429,244	\$5,567,555	\$8,119,367
Dividends receivable	-	-	-	-	-	-	-	-
Receivable from Massachusetts Mutual Life Insurance Company	-	-	-	2	-	-	-	-
Total assets	1,106,235	1,566,138	758,038	248,073	8,655,240	1,429,244	5,567,555	8,119,367
LIABILITIES								
Annuitant mortality fluctuation reserve	243	282	-	-	2,140	760	1,491	2,205
Payable to Massachusetts Mutual Life Insurance Company	8	8	1	-	69	55	83	64
Total liabilities	251	290	1	-	2,209	815	1,574	2,269
NET ASSETS	\$1,105,984	\$1,565,848	\$ 758,037	\$ 248,073	\$8,653,031	\$1,428,429	\$5,565,981	\$8,117,098
Net Assets:								
Accumulation units – value	\$1,097,870	\$1,556,455	\$ 758,037	\$ 248,073	\$8,581,689	\$1,403,101	\$5,516,285	\$8,043,593
Contracts in payout (annuitization) period	8,114	9,393	-	-	71,342	25,328	49,696	73,505
Net assets	\$1,105,984	\$1,565,848	\$ 758,037	\$ 248,073	\$8,653,031	\$1,428,429	\$5,565,981	\$8,117,098
Outstanding units								
Contract owners	305,386	445,296	293,311	203,373	1,584,932	543,617	1,350,618	1,488,091
UNIT VALUE								
LifeTrust	\$ 3.62	\$ 3.52	\$ 2.58	\$ 1.22	\$ 5.46	\$ 2.63	\$ 4.12	\$ 5.45

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

STATEMENTS OF ASSETS AND LIABILITIES (Continued)

December 31, 2018

	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division	Oppenheimer Main Street Division	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division
ASSETS					
Investments					
Number of shares	760,638	208,241	364,391	56,488	71,038
Identified cost	\$4,012,827	\$ 208,241	\$8,968,937	\$1,338,821	\$ 541,730
Value	\$3,544,573	\$ 208,241	\$9,769,310	\$1,150,102	\$ 532,076
Dividends receivable	-	166	-	-	-
Receivable from Massachusetts Mutual Life Insurance Company	-	-	-	-	-
Total assets	3,544,573	208,407	9,769,310	1,150,102	532,076
LIABILITIES					
Annuitant mortality fluctuation reserve	1,809	240	4,744	38	759
Payable to Massachusetts Mutual Life Insurance Company	92	4	171	2	27
Total liabilities	1,901	244	4,915	40	786
NET ASSETS	\$3,542,672	\$ 208,163	\$9,764,395	\$1,150,062	\$ 531,290
Net Assets:					
Accumulation units – value	\$3,482,378	\$ 200,155	\$9,606,249	\$1,148,788	\$ 505,980
Contracts in payout (annuitization) period	60,294	8,008	158,146	1,274	25,310
Net assets	\$3,542,672	\$ 208,163	\$9,764,395	\$1,150,062	\$ 531,290
Outstanding units					
Contract owners	1,295,192	165,784	2,119,968	339,303	326,142
UNIT VALUE					
LifeTrust	\$ 2.74	\$ 1.26	\$ 4.61	\$ 3.39	\$ 1.63

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

STATEMENTS OF OPERATIONS AND CHANGES IN NET ASSETS For The Year Ended December 31, 2018

	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division	Oppenheimer Conservative Balanced Division	Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Global Division
Investment Income								
Dividends	\$ 26,689	\$ 32,553	\$ 32,847	\$ 3,257	\$ 32,854	\$ 31,349	\$ -	\$ 99,109
Expenses								
Mortality and expense risk fees and administrative expense charges	17,792	25,644	13,737	3,540	145,443	22,319	94,824	140,220
Net investment income (loss)	8,897	6,909	19,110	(283)	(112,589)	9,030	(94,824)	(41,111)
Net realized and unrealized gain (loss) on investments								
Realized gain (loss) on sale of fund shares	50,550	35,917	(24,074)	(1)	530,830	17,738	613,003	479,545
Realized gain distribution	85,343	257,084	-	-	772,673	37,070	922,069	700,694
Realized gain (loss)	135,893	293,001	(24,074)	(1)	1,303,503	54,808	1,535,072	1,180,239
Change in net unrealized appreciation/depreciation of investments	(211,917)	(496,313)	(17,394)	1	(1,815,116)	(169,543)	(1,837,539)	(2,498,637)
Net gain (loss) on investments	(76,024)	(203,312)	(41,468)	-	(511,613)	(114,735)	(302,467)	(1,318,398)
Net increase (decrease) in net assets resulting from operations	(67,127)	(196,403)	(22,358)	(283)	(624,202)	(105,705)	(397,291)	(1,359,509)
Capital transactions:								
Transfer of net premiums	391	927	2,544	-	16,338	-	1,673	2,541
Transfers due to death benefits	(24,136)	(31,947)	-	(15,292)	(98,170)	(44,278)	(4,583)	(40,872)
Transfers due to annuity benefit payments	(1,706)	(1,844)	-	-	(12,233)	(5,719)	(7,849)	(13,633)
Transfers due to withdrawal of funds	(95,788)	(131,946)	(89,979)	(26,148)	(1,104,249)	(97,011)	(963,273)	(881,505)
Transfers due to administrative charges	(467)	(883)	(284)	(235)	(4,038)	(638)	(2,472)	(3,328)
Transfers due to net charge (credit) to annuitant mortality fluctuation	411	564	-	-	1,709	(2,399)	(2,539)	2,875
Transfers between divisions and to/from the Fixed Account	-	4,968	(196,982)	(19,497)	(7,614)	-	118,092	(218,992)
Net increase (decrease) in net assets resulting from capital transactions	(121,295)	(160,161)	(284,701)	(61,172)	(1,208,257)	(150,045)	(860,951)	(1,152,914)
Total increase (decrease)	(188,422)	(356,564)	(307,059)	(61,455)	(1,832,459)	(255,750)	(1,258,242)	(2,512,423)
NET ASSETS, at beginning of the year	1,294,406	1,922,412	1,065,096	309,528	10,485,490	1,684,179	6,824,223	10,629,521
NET ASSETS, at end of the year	\$ 1,105,984	\$ 1,565,848	\$ 758,037	\$ 248,073	\$ 8,653,031	\$ 1,428,429	\$ 5,565,981	\$ 8,117,098

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

*STATEMENTS OF OPERATIONS AND CHANGES IN NET ASSETS (Continued)
For The Year Ended December 31, 2018*

	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division	Oppenheimer Main Street Division	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division
Investment Income					
Dividends	\$ 209,557	\$ 2,850	\$ 128,887	\$ 4,601	\$ 23,909
Expenses					
Mortality and expense risk fees and administrative expense charges	58,967	2,995	157,911	21,656	9,897
Net investment income (loss)	150,590	(145)	(29,024)	(17,055)	14,012
Net realized and unrealized gain (loss) on investments					
Realized gain (loss) on sale of fund shares	(54,659)	-	382,922	224,859	17,666
Realized gain distribution	-	-	969,440	189,497	-
Realized gain (loss)	(54,659)	-	1,352,362	414,356	17,666
Change in net unrealized appreciation/depreciation of investments	(341,619)	-	(2,318,111)	(562,373)	(50,258)
Net gain (loss) on investments	(396,278)	-	(965,749)	(148,017)	(32,592)
Net increase (decrease) in net assets resulting from operations	(245,688)	(145)	(994,773)	(165,072)	(18,580)
Capital transactions:					
Transfer of net premiums	1,135	-	6,177	204	-
Transfers due to death benefits	(41,516)	-	(84,039)	-	(16,034)
Transfers due to annuity benefit payments	(11,203)	(587)	(24,843)	(333)	(3,627)
Transfers due to withdrawal of funds	(742,062)	(11,071)	(1,193,645)	(535,160)	(179,909)
Transfers due to administrative charges	(1,239)	(401)	(3,813)	(467)	(334)
Transfers due to net charge (credit) to annuitant mortality fluctuation	(1,662)	(631)	(887)	80	802
Transfers between divisions and to/from the Fixed Account	(33,672)	-	228,913	104,785	-
Net increase (decrease) in net assets resulting from capital transactions	(830,219)	(12,690)	(1,072,137)	(430,891)	(199,102)
Total increase (decrease)	(1,075,907)	(12,835)	(2,066,910)	(595,963)	(217,682)
NET ASSETS, at beginning of the year	4,618,579	220,998	11,831,305	1,746,025	748,972
NET ASSETS, at end of the year	\$ 3,542,672	\$ 208,163	\$ 9,764,395	\$ 1,150,062	\$ 531,290

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

STATEMENTS OF OPERATIONS AND CHANGES IN NET ASSETS (Continued) For The Year Ended December 31, 2017

	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division	Oppenheimer Conservative Balanced Division	Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Global Division
Investment Income								
Dividends	\$ 26,561	\$ 34,412	\$ 33,732	\$ 1,307	\$ 23,803	\$ 32,931	\$ 1,962	\$ 91,496
Expenses								
Mortality and expense risk fees and administrative expense charges	17,626	26,574	15,164	5,277	141,990	23,644	90,279	139,256
Net investment income (loss)	8,935	7,838	18,568	(3,970)	(118,187)	9,287	(88,317)	(47,760)
Net realized and unrealized gain (loss) on investments								
Realized gain (loss) on sale of fund shares	56,636	61,981	(9,976)	241	745,943	22,596	427,864	256,718
Realized gain distribution	51,256	12,951	-	4	906,236	-	644,631	-
Realized gain (loss)	107,892	74,932	(9,976)	245	1,652,179	22,596	1,072,495	256,718
Change in net unrealized appreciation/depreciation of investments	45,287	172,628	26,103	(244)	730,339	94,574	553,140	2,739,320
Net gain (loss) on investments	153,179	247,560	16,127	1	2,382,518	117,170	1,625,635	2,996,038
Net increase (decrease) in net assets resulting from operations	162,114	255,398	34,695	(3,969)	2,264,331	126,457	1,537,318	2,948,278
Capital transactions:								
Transfer of net premiums	-	25,000	1,800	150	72,923	-	3,070	3,300
Transfers due to death benefits	(51,275)	(56,048)	(14,395)	(131,023)	(156,978)	(68,038)	(123,621)	(154,117)
Transfers due to annuity benefit payments	(1,656)	(1,805)	-	-	(11,031)	(5,259)	(6,198)	(12,327)
Transfers due to withdrawal of funds	(99,310)	(276,568)	(264,109)	(84,435)	(1,280,512)	(80,468)	(472,755)	(1,235,110)
Transfers due to administrative charges	(531)	(955)	(338)	(303)	(4,477)	(711)	(2,669)	(3,592)
Transfers due to net charge (credit) to annuitant mortality fluctuation	292	393	-	-	1,321	175	658	1,302
Transfers between divisions and to/from the Fixed Account	(14,450)	(3,214)	2,610	90,970	(118,333)	(34,843)	(73,389)	(101,037)
Net increase (decrease) in net assets resulting from capital transactions	(166,930)	(313,197)	(274,432)	(124,641)	(1,497,087)	(189,144)	(674,904)	(1,501,581)
Total increase (decrease)	(4,816)	(57,799)	(239,737)	(128,610)	767,244	(62,687)	862,414	1,446,697
NET ASSETS, at beginning of the year	1,299,222	1,980,211	1,304,833	438,138	9,718,246	1,746,866	5,961,809	9,182,824
NET ASSETS, at end of the year	\$ 1,294,406	\$ 1,922,412	\$ 1,065,096	\$ 309,528	\$10,485,490	\$ 1,684,179	\$ 6,824,223	\$10,629,521

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

STATEMENTS OF OPERATIONS AND CHANGES IN NET ASSETS (Continued) For The Year Ended December 31, 2017

	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division	Oppenheimer Main Street Division	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division
Investment Income					
Dividends	\$ 110,366	\$ 872	\$ 145,517	\$ 15,005	\$ 18,223
Expenses					
Mortality and expense risk fees and administrative expense charges	67,740	3,259	163,230	24,135	10,875
Net investment income (loss)	42,626	(2,387)	(17,713)	(9,130)	7,348
Net realized and unrealized gain (loss) on investments					
Realized gain (loss) on sale of fund shares	21,840	-	456,558	103,799	(37,413)
Realized gain distribution	-	-	195,233	92,108	-
Realized gain (loss)	21,840	-	651,791	195,907	(37,413)
Change in net unrealized appreciation/depreciation of investments	164,859	-	1,019,428	16,578	54,516
Net gain (loss) on investments	186,699	-	1,671,219	212,485	17,103
Net increase (decrease) in net assets resulting from operations	229,325	(2,387)	1,653,506	203,355	24,451
Capital transactions:					
Transfer of net premiums	540	-	6,135	-	-
Transfers due to death benefits	(54,812)	-	(162,021)	(3,250)	-
Transfers due to annuity benefit payments	(10,599)	(452)	(22,223)	(313)	(3,329)
Transfers due to withdrawal of funds	(483,485)	(98,064)	(877,507)	(94,207)	(104,190)
Transfers due to administrative charges	(1,510)	(444)	(4,411)	(509)	(369)
Transfers due to net charge (credit) to annuitant mortality fluctuation	1,252	99	2,786	55	729
Transfers between divisions and to/from the Fixed Account	(41,281)	92,661	(125,370)	28,772	(10,427)
Net increase (decrease) in net assets resulting from capital transactions	(589,895)	(6,200)	(1,182,611)	(69,452)	(117,586)
Total increase (decrease)	(360,570)	(8,587)	470,895	133,903	(93,135)
NET ASSETS, at beginning of the year	4,979,149	229,585	11,360,410	1,612,122	842,107
NET ASSETS, at end of the year	\$ 4,618,579	\$ 220,998	\$11,831,305	\$ 1,746,025	\$ 748,972

See Notes to Financial Statements.

Massachusetts Mutual Variable Annuity Separate Account 3

Notes To Financial Statements

1. ORGANIZATION

Massachusetts Mutual Variable Annuity Separate Account 3 (“the Separate Account”) is a separate investment account of Massachusetts Mutual Life Insurance Company (“MassMutual”) established on January 12, 1994. The Separate Account is registered as a unit investment trust under the Investment Company Act of 1940 (“the 1940 Act”).

The assets and liabilities of the Separate Account are clearly identified and distinguished from MassMutual’s other assets and liabilities. The Separate Account’s assets are not chargeable with liabilities arising from any other MassMutual business.

2. INVESTMENT OF THE SEPARATE ACCOUNT’S ASSETS

As of December 31, 2018, the Separate Account consists of thirteen divisions which invest in the following mutual funds:

Divisions	The division listed in the first column invests in the fund in this column
MML Blend Division	MML Blend Fund ¹
MML Equity Division	MML Equity Fund ¹
MML Managed Bond Division	MML Managed Bond Fund ¹
MML U.S. Government Money Market Division	MML U.S. Government Money Market Fund ¹
Oppenheimer Capital Appreciation Division	Oppenheimer Capital Appreciation Fund/VA ²
Oppenheimer Conservative Balanced Division	Oppenheimer Conservative Balanced Fund/VA ²
Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Discovery Mid Cap Growth Fund/VA ²
Oppenheimer Global Division	Oppenheimer Global Fund/VA ²
Oppenheimer Global Strategic Income Division	Oppenheimer Global Strategic Income Fund/VA ²
Oppenheimer Government Money Division	Oppenheimer Government Money Fund/VA ²
Oppenheimer Main Street Division	Oppenheimer Main Street Fund [®] /VA ²
Oppenheimer Main Street Small Cap Division	Oppenheimer Main Street Small Cap Fund [®] /VA ²
Oppenheimer Total Return Bond Division	Oppenheimer Total Return Bond Fund/VA ²

In addition to the thirteen divisions, some contract owners may also allocate funds to the Fixed Interest Account (“FIA”), which is part of MassMutual’s general investment account (“General Account”). Because of exemptive and exclusionary provisions in the securities law, interests in the FIA are not registered under the Securities Act of 1933, and the General Account and the FIA are not registered as an investment company under the 1940 Act.

¹ MML Investment Advisers, LLC is the investment adviser to this Fund.

² OFI Global Asset Management, Inc. is the investment adviser to this Fund.

3. SIGNIFICANT ACCOUNTING POLICIES

The following is a summary of significant accounting policies followed by the Separate Account in preparation of the financial statements in conformity with generally accepted accounting principles. Separate Account Massachusetts Mutual Variable Annuity Separate Account 3 follows the accounting and reporting guidance in FASB Accounting Standards Codification 946.

A. Investment Valuation

Investments in the investment divisions are valued at the closing net asset value of each of the respective underlying funds, which value their investment securities at fair value.

Notes To Financial Statements (Continued)

B. Accounting for Investments

Investment transactions are accounted for on a trade-date basis and identified cost is the basis followed in determining the cost of investments sold for financial statement purposes. Dividend income and gains from realized gain distributions are recorded on the ex-distribution date, and they are generally reinvested in the underlying investment divisions.

C. Federal Income Taxes

MassMutual is taxed under federal law as a life insurance company under the provisions of the 1986 Internal Revenue Code, as amended. Under existing federal law, no taxes are payable on net investment income and net realized capital gains attributable to contracts which depend on the Separate Account's investment performance. Accordingly, no provision for federal income tax has been made. MassMutual may, however, make such a charge in the future if an unanticipated change of current law results in a company tax liability attributable to the Separate Account.

D. Contract Charges

See Note 8B for charges associated with the contracts

E. Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

F. Annuitant Mortality Fluctuation

The Separate Account maintains a reserve as required by regulatory authorities to provide for mortality losses incurred. The reserve is adjusted quarterly for mortality losses and gains and its proportionate share of changes in value. Transfers to or from MassMutual are then made quarterly to adjust the Separate Account. Net transfers from the Separate Account to MassMutual totaled \$1,678 for the year ended December 31, 2018. Net transfers from MassMutual to the Separate Account totaled \$9,755 for the year ended December 31, 2017. The reserve is subject to a maximum of 3% of the Separate Account's annuity reserves. Any mortality losses in excess of this reserve will be borne by MassMutual. The reserve is not available to owners of the contracts except to the extent necessary to cover mortality losses under the contracts.

G. Annuity Reserves

Annuity reserves are developed by using accepted actuarial methods and are computed using the 1994 MGDB table.

4. FAIR VALUE OF FINANCIAL INSTRUMENTS

The Separate Account defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In determining fair value, the Separate Account generally uses the market approach as the valuation technique due to the nature of the mutual fund investments offered in the Separate Account. This technique maximizes the use of observable inputs and minimizes the use of unobservable inputs. Investments in mutual funds are valued at the mutual fund's closing net asset value per share on the day of valuation.

Valuation Inputs: Various inputs are used to determine the value of the Separate Account's investments. These inputs are summarized in the three broad levels listed below:

- **Level 1** – quoted prices in active markets for identical securities
- **Level 2** – observable inputs other than Level 1 quoted prices (including, but not limited to, quoted prices for similar securities, interest rates, prepayment speeds and credit risk)
- **Level 3** – unobservable inputs

The net assets of the Separate Account are measured at fair value. All the net assets are categorized as Level 1 as of December 31, 2018. There have been no transfers between levels for the year ended December 31, 2018.

Notes To Financial Statements (Continued)

5. RELATED PARTY TRANSACTIONS

A. Sales Agreements

Pursuant to separate underwriting agreements with MassMutual, on its own behalf and on behalf of the Separate Account, MML Investors Services, LLC (“MMLIS”) serves as principal underwriter of the contracts sold by its registered representatives, and MML Strategic Distributors, LLC (“MSD”) serves as principal underwriter of the contracts sold by registered representatives of other broker-dealers who have entered into distribution agreements with MSD.

Both MMLIS and MSD are registered with the Securities and Exchange Commission (the “SEC”) as broker-dealers under the Securities Exchange Act of 1934 and are members of the Financial Industry Regulatory Authority (“FINRA”). Commissions for sales of contracts by MMLIS registered representatives are paid on behalf of MMLIS to its registered representatives. Commissions for sales of contracts by registered representatives of other broker-dealers are paid on behalf of MSD to those broker-dealers. MMLIS and MSD also receive compensation for their actions as principal underwriters of the contracts.

The contracts are no longer offered for sale to the public. Contract owners may continue, however, to make purchase payments under existing contracts.

B. Receivable from/Payable to MassMutual

Certain fees such as cost of insurance fees and mortality and expense risk fees are charges paid between the General Account and the Separate Account.

6. PURCHASES AND SALES OF INVESTMENTS

The cost of purchases and proceeds from sales of investments for the year ended December 31, 2018 were as follows:

	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division
Cost of purchases	\$ 112,209	\$ 297,889	\$ 35,491	\$ 38,686	\$ 834,979
Proceeds from sales	(139,324)	(194,144)	(301,079)	(100,153)	(1,383,525)
	Oppenheimer Conservative Balanced Division	Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Global Division	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division
Cost of purchases	\$ 75,446	\$ 1,081,337	\$ 859,587	\$ 228,468	\$ 6,190
Proceeds from sales	(179,286)	(1,114,857)	(1,353,648)	(908,152)	(19,075)
	Oppenheimer Main Street Division	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division		
Cost of purchases	\$ 1,339,852	\$ 321,699	\$ 23,929		
Proceeds from sales	(1,472,033)	(580,168)	(209,127)		

7. NET INCREASE (DECREASE) IN OUTSTANDING UNITS

The changes in outstanding units for the two years ended December 31, 2018 were as follows:

	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division
2018					
Units purchased	203	363	989	-	3,614
Units withdrawn	(31,942)	(41,579)	(34,995)	(34,174)	(202,533)
Units transferred between division sand to/from the Fixed Account	-	1,325	(77,269)	(16,002)	(1,376)
Net increase (decrease)	<u>(31,739)</u>	<u>(39,891)</u>	<u>(111,275)</u>	<u>(50,176)</u>	<u>(200,295)</u>

Notes To Financial Statements (Continued)

	Oppenheimer Conservative Balanced Division	Oppenheimer Discovery Mid Cap Growth Division	Oppenheimer Global Division	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division
2018 (continued)					
Units purchased	4,710	4,573	792	5,485	2,606
Units withdrawn	(59,447)	(213,412)	(144,179)	(289,775)	(12,720)
Units transferred between divisions and to/from the Fixed Account	-	25,991	(36,710)	(12,241)	-
Net increase (decrease)	<u>(54,736)</u>	<u>(182,849)</u>	<u>(180,097)</u>	<u>(296,532)</u>	<u>(10,114)</u>
	Oppenheimer Main Street Division	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division		
2018 (continued)					
Units purchased	6,281	73	480		
Units withdrawn	(264,564)	(142,157)	(123,045)		
Units transferred between divisions and to/from the Fixed Account	45,188	25,898	-		
Net increase (decrease)	<u>(213,095)</u>	<u>(116,187)</u>	<u>(122,565)</u>		
	MML Blend Division	MML Equity Division	MML Managed Bond Division	MML U.S. Government Money Market Division	Oppenheimer Capital Appreciation Division
2017					
Units purchased	92	6,845	691	123	13,833
Units withdrawn	(43,326)	(91,495)	(108,837)	(176,038)	(275,722)
Units transferred between divisions and to/from the Fixed Account	(4,231)	(845)	1,003	74,273	(22,378)
Net increase (decrease)	<u>(47,465)</u>	<u>(85,495)</u>	<u>(107,143)</u>	<u>(101,642)</u>	<u>(284,267)</u>
	Oppenheimer Conservative Balanced Division	Oppenheimer Global Division	Oppenheimer Global Strategic Income Division	Oppenheimer Government Money Division	Oppenheimer Main Street Division
2017 (continued)					
Units purchased	82	964	661	78	2,006
Units withdrawn	(57,536)	(257,075)	(192,906)	(78,181)	(225,468)
Units transferred between divisions and to/from the Fixed Account	(12,835)	(17,948)	(14,365)	73,100	(26,189)
Net increase (decrease)	<u>(70,290)</u>	<u>(274,059)</u>	<u>(206,609)</u>	<u>(5,003)</u>	<u>(249,650)</u>
	Oppenheimer Main Street Small Cap Division	Oppenheimer Total Return Bond Division	Oppenheimer Discovery Mid Cap Growth Division		
2017 (continued)					
Units purchased	17	459	1,009		
Units withdrawn	(27,279)	(65,661)	(150,979)		
Units transferred between divisions and to/from the Fixed Account	9,314	(6,415)	(18,038)		
Net increase (decrease)	<u>(17,948)</u>	<u>(71,618)</u>	<u>(168,009)</u>		

Notes To Financial Statements (Continued)

8. FINANCIAL HIGHLIGHTS

- A. A summary of units outstanding, unit values, net assets, investment income ratios, expense ratios (excluding expenses of the underlying funds) and total return ratios for each of the five years in the period ended December 31, 2018 follows:

	At December 31,			For the Years Ended December 31,		
	Units	Net Assets		Investment Income Ratio ¹	Expense Ratio ²	Total Return ³
		Unit Value ³	Amount			
MML Blend Division						
2018	305,386	\$3.62	\$ 1,105,984	2.11%	1.40%	(5.68)%
2017	337,125	3.84	1,294,406	2.10	1.40	13.66
2016	384,590	3.38	1,299,222	2.14	1.40	7.90
2015	422,659	3.13	1,323,271	2.13	1.40	(1.31)
2014	496,109	3.17	1,573,885	2.06	1.40	9.45
MML Equity Division						
2018	445,296	3.52	1,565,848	1.79	1.40	(11.25)
2017	485,187	3.96	1,922,412	1.81	1.40	14.19
2016	570,682	3.47	1,980,211	1.74	1.40	11.03
2015	637,696	3.13	1,992,891	2.06	1.40	(4.77)
2014	706,240	3.28	2,317,742	1.56	1.40	10.02
MML Managed Bond Division						
2018	293,311	2.58	758,037	3.37	1.40	(1.83)
2017	404,587	2.63	1,065,096	3.11	1.40	3.24
2016	511,730	2.55	1,304,833	2.82	1.40	1.32
2015	574,521	2.52	1,445,785	2.85	1.40	(2.13)
2014	578,798	2.57	1,488,250	3.18	1.40	4.98
MML U.S. Government Money Market Division						
2018	203,373	1.22	248,073	1.30	1.40	(0.08)
2017	253,549	1.22	309,528	0.35	1.40	(1.03)
2016	355,192	1.23	438,138	-	1.40	(1.28)
2015	635,868	1.25	794,529	-	1.40	(1.39)
2014	610,191	1.27	773,171	-	1.40	(1.39)
Oppenheimer Capital Appreciation Division						
2018	1,584,932	5.46	8,653,031	0.32	1.40	(7.05)
2017	1,785,227	5.87	10,485,490	0.23	1.40	25.08
2016	2,069,494	4.70	9,718,246	0.41	1.40	(3.56)
2015	2,246,441	4.87	10,938,408	0.09	1.40	2.10
2014	2,419,749	4.77	11,539,500	0.45	1.40	13.80
Oppenheimer Conservative Balanced Division						
2018	543,617	2.63	1,428,429	1.98	1.40	(6.65)
2017	598,353	2.81	1,684,179	1.95	1.40	7.74
2016	668,643	2.61	1,746,866	2.41	1.40	3.80
2015	891,991	2.52	2,245,066	2.26	1.40	(0.57)
2014	996,377	2.53	2,522,186	2.09	1.40	6.69
Oppenheimer Discovery Mid Cap Growth Division						
2018	1,350,618	4.12	5,565,981	-	1.40	(7.40)
2017	1,533,467	4.45	6,824,223	0.03	1.40	27.01
2016	1,701,476	3.50	5,961,809	-	1.40	0.92
2015	1,889,493	3.47	6,560,530	-	1.40	5.12
2014	2,080,816	3.30	6,872,672	-	1.40	4.31

Notes To Financial Statements (Continued)

8. FINANCIAL HIGHLIGHTS (Continued)

	At December 31,			For the Years Ended December 31,		
	Units	Net Assets		Investment Income Ratio ¹	Expense Ratio ²	Total Return ³
	Unit Value ³	Amount				
Oppenheimer Global Division						
2018	1,488,091	\$5.45	\$ 8,117,098	0.99%	1.40%	(14.39)%
2017	1,668,188	6.37	10,629,521	0.92	1.40	34.77
2016	1,942,248	4.73	9,182,824	1.06	1.40	(1.31)
2015	2,062,174	4.79	9,878,839	1.29	1.40	2.50
2014	2,269,287	4.67	10,605,986	1.10	1.40	0.87
Oppenheimer Global Strategic Income Division						
2018	1,295,192	2.74	3,542,672	5.01	1.40	(5.73)
2017	1,591,724	2.90	4,618,579	2.28	1.40	4.80
2016	1,798,333	2.77	4,979,149	4.99	1.40	5.06
2015	1,964,482	2.64	5,177,424	5.87	1.40	(3.62)
2014	2,166,007	2.73	5,922,912	4.64	1.40	1.41
Oppenheimer Government Money Division						
2018	165,784	1.26	208,163	1.34	1.40	(0.06)
2017	175,898	1.26	220,998	0.37	1.40	(1.00)
2016	180,901	1.27	229,585	0.01	1.40	(1.38)
2015	787,169	1.29	1,012,958	0.01	1.40	(1.38)
2014	812,577	1.30	1,060,278	0.01	1.40	(1.38)
Oppenheimer Main Street Division						
2018	2,119,968	4.61	9,764,395	1.15	1.40	(9.17)
2017	2,333,063	5.07	11,831,305	1.24	1.40	15.29
2016	2,582,713	4.40	11,360,410	1.11	1.40	10.07
2015	2,841,199	4.00	11,354,089	0.93	1.40	1.89
2014	3,146,778	3.92	12,341,779	0.84	1.40	9.16
Oppenheimer Main Street Small Cap Division						
2018	339,303	3.39	1,150,062	0.30	1.40	(11.58)
2017	455,490	3.83	1,746,025	0.87	1.40	12.57
2016	473,438	3.41	1,612,122	0.51	1.40	16.42
2015	486,618	2.92	1,423,344	0.89	1.40	(7.21)
2014	524,245	3.15	1,652,500	0.87	1.40	10.38
Oppenheimer Total Return Bond Division						
2018	326,142	1.63	531,290	3.40	1.40	(2.41)
2017	448,707	1.67	748,972	2.34	1.40	3.14
2016	520,325	1.62	842,107	3.69	1.40	1.84
2015	577,863	1.59	918,351	4.06	1.40	(0.44)
2014	620,103	1.60	989,854	5.41	1.40	5.77

¹ The investment income ratios represent the dividends, excluding distributions of capital gains, received by the division from the underlying mutual fund, net of management fees assessed by the fund manager, divided by the average net assets. These ratios exclude those expenses, such as mortality and expense charges, that are assessed against contract owner accounts either through reductions in the unit values or the redemption of units. The recognition of investment income by the division is affected by the timing of the declaration of dividends by the underlying fund in which the division invests.

² The expense ratios represent the annualized contract expenses of the Separate Account, consisting primarily of mortality and expense charges, for each period indicated. The ratios include only those expenses that result in a direct reduction of unit values. Charges made directly to contract owner accounts through the redemption of units and expenses of the underlying fund have been excluded.

³ The total returns are for the periods indicated, including changes in the value of the underlying fund, and the expenses assessed through the reduction of unit values. These ratios do not include any expenses assessed through the redemption of units. Investment options with a date notation indicate the effective date of that investment option in the variable account. The total return is calculated for each period indicated or from the effective date through the end of the reporting period.

Notes To Financial Statements (Continued)

8. FINANCIAL HIGHLIGHTS (Continued)

- B. The Separate Account assesses charges associated with the contract. These charges are either assessed as a direct reduction in unit values or through a redemption of units for all contracts contained within the Separate Account.

Mortality and Expense Risk Charge This charge is assessed through reduction of unit values.	This charge is equal, on an annual basis, to 1.15% of the daily value of the assets invested in each fund.
Administrative Expense Charge This charge is assessed through reduction of unit values.	This charge is equal, on an annual basis, to 0.15% of the daily value of the assets invested in each fund.
Death Benefit Charge This charge is assessed through reduction of unit values.	This charge is equal, on an annual basis, to 0.10% of the daily value of the assets invested in each fund.
Administrative Charge This charge is assessed through the redemption of units.	\$30 per contract, annually. These charges are not applicable to contracts with values of \$50,000 or more.
Contingent Deferred Sales Charge This charge is assessed through the redemption of units.	0% - 7%

9. SUBSEQUENT EVENTS

The Separate Account's management has reviewed events occurring through March 19, 2019, the date the financial statements were issued, and no subsequent events occurred requiring accrual or disclosure.

