



LIFE AND ACCIDENT AND HEALTH COMPANIES - ASSOCIATION EDITION

# ANNUAL STATEMENT

FOR THE YEAR ENDED DECEMBER 31, 2016  
OF THE CONDITION AND AFFAIRS OF THE

## Massachusetts Mutual Life Insurance Company

NAIC Group Code 0435 0435 NAIC Company Code 65935 Employer's ID Number 04-1590850  
(Current) (Prior)

Organized under the Laws of Massachusetts, State of Domicile or Port of Entry MA

Country of Domicile United States of America

Incorporated/Organized 05/15/1851 Commenced Business 08/01/1851

Statutory Home Office 1295 State Street, Springfield, MA, US 01111  
(Street and Number) (City or Town, State, Country and Zip Code)

Main Administrative Office 1295 State Street  
(Street and Number)  
Springfield, MA, US 01111, 413-788-8411  
(City or Town, State, Country and Zip Code) (Area Code) (Telephone Number)

Mail Address 1295 State Street, Springfield, MA, US 01111  
(Street and Number or P.O. Box) (City or Town, State, Country and Zip Code)

Primary Location of Books and Records 1295 State Street  
(Street and Number)  
Springfield, MA, US 01111, 413-788-8411  
(City or Town, State, Country and Zip Code) (Area Code) (Telephone Number)

Internet Website Address www.massmutual.com

Statutory Statement Contact Tammy A. Peatman, 413-744-6327  
(Name) (Area Code) (Telephone Number)  
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### OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Todd Garrett Picken  
Secretary Pia Denise Flanagan Appointed Actuary Douglas Wright Taylor

### OTHER

Elizabeth Ward Chicares #, Executive Vice President, Chief Financial Officer and Chief Actuary Michael Robert Fanning, Executive Vice President Melvin Timothy Corbett, Executive Vice President and Chief Investment Officer  
Robert Joseph Casale, Executive Vice President and Chief Information Officer Mark Douglas Roellig, Executive Vice President and General Counsel Elaine Anne Sarsynski, Executive Vice President  
Adnan Omar Ahmed, Executive Vice President and Chief Human Resources Officer

### DIRECTORS OR TRUSTEES

Roger William Crandall - Chairman Karen Hall Bechtel # Mark Thomas Bertolini  
Kathleen Ann Corbet - Lead Director James Henry DeGraffenreidt, Jr. Patricia Diaz Dennis  
Robert Alan Essner Isabella Davidov Goren Raymond Walter LeBoeuf  
Jeffrey Marc Leiden Cathy Elizabeth Minehan Marc Francis Racicot  
Laura Jeanne Sen William Taylor Spitz Howard Todd Stitzer

State of Massachusetts SS:  
County of Hampden

The officers of this reporting entity being duly sworn, each depose and say that they are the described officers of said reporting entity, and that on the reporting period stated above, all of the herein described assets were the absolute property of the said reporting entity, free and clear from any liens or claims thereon, except as herein stated, and that this statement, together with related exhibits, schedules and explanations therein contained, annexed or referred to, is a full and true statement of all the assets and liabilities and of the condition and affairs of the said reporting entity as of the reporting period stated above, and of its income and deductions therefrom for the period ended, and have been completed in accordance with the NAIC Annual Statement Instructions and Accounting Practices and Procedures manual except to the extent that: (1) state law may differ; or, (2) that state rules or regulations require differences in reporting not related to accounting practices and procedures, according to the best of their information, knowledge and belief, respectively. Furthermore, the scope of this attestation by the described officers also includes the related corresponding electronic filing with the NAIC, when required, that is an exact copy (except for formatting differences due to electronic filing) of the enclosed statement. The electronic filing may be requested by various regulators in lieu of or in addition to the enclosed statement.

Roger William Crandall  
President and Chief Executive Officer

Pia Denise Flanagan  
Secretary

Todd Garrett Picken  
Treasurer

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

- a. Is this an original filing? ..... Yes [ X ] No [ ]  
b. If no,  
1. State the amendment number.....  
2. Date filed .....  
3. Number of pages attached.....

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSETS**

	Current Year			Prior Year
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	4 Net Admitted Assets
1. Bonds (Schedule D) .....	83,820,817,695		83,820,817,695	79,546,596,121
2. Stocks (Schedule D):				
2.1 Preferred stocks .....	464,925,273		464,925,273	532,949,649
2.2 Common stocks .....	15,363,384,808		15,363,384,808	9,099,961,966
3. Mortgage loans on real estate (Schedule B):				
3.1 First liens .....	20,961,091,565		20,961,091,565	22,007,729,394
3.2 Other than first liens .....				
4. Real estate (Schedule A):				
4.1 Properties occupied by the company (less \$ .....	158,135,975		158,135,975	170,369,606
encumbrances) .....				
4.2 Properties held for the production of income (less				
\$ .....671,199,688 encumbrances) .....	737,451,103		737,451,103	756,333,883
4.3 Properties held for sale (less \$ .....39,000,000				
encumbrances) .....	81,092,879		81,092,879	1,473,276
5. Cash (\$ .....(95,241,558) , Schedule E - Part 1), cash equivalents				
(\$ .....3,113,185,611 , Schedule E - Part 2) and short-term				
investments (\$ .....707,992,227 , Schedule DA) .....	3,725,936,280		3,725,936,280	3,048,645,110
6. Contract loans (including \$ ..... premium notes) .....	12,461,811,467	520,912	12,461,290,555	11,812,577,658
7. Derivatives (Schedule DB) .....	9,763,460,825		9,763,460,825	9,268,078,124
8. Other invested assets (Schedule BA) .....	7,233,113,042	46,223,980	7,186,889,062	7,473,266,370
9. Receivables for securities .....	161,585,825		161,585,825	41,926,626
10. Securities lending reinvested collateral assets (Schedule DL) .....				
11. Aggregate write-ins for invested assets .....				
12. Subtotals, cash and invested assets (Lines 1 to 11) .....	154,932,806,737	46,744,892	154,886,061,845	143,759,907,783
13. Title plants less \$ ..... charged off (for Title insurers				
only) .....				
14. Investment income due and accrued .....	1,916,725,786	5,059,678	1,911,666,108	1,833,663,950
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection .....	145,019,164	3,926,072	141,093,092	126,174,738
15.2 Deferred premiums and agents' balances and installments booked but				
deferred and not yet due (including \$ .....				
earned but unbilled premiums) .....	642,564,314		642,564,314	633,398,443
15.3 Accrued retrospective premiums (\$ ..... ) and				
contracts subject to redetermination (\$ ..... ) .....				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers .....	41,664,064		41,664,064	45,318,929
16.2 Funds held by or deposited with reinsured companies .....				
16.3 Other amounts receivable under reinsurance contracts .....	(8,316,304)		(8,316,304)	24,423,453
17. Amounts receivable relating to uninsured plans .....				
18.1 Current federal and foreign income tax recoverable and interest thereon .....	44,148,885		44,148,885	65,324,933
18.2 Net deferred tax asset .....	1,650,444,662	44,391,726	1,606,052,936	1,298,531,068
19. Guaranty funds receivable or on deposit .....	26,092,893		26,092,893	26,501,012
20. Electronic data processing equipment and software .....	368,328,598	359,047,909	9,280,689	38,454,169
21. Furniture and equipment, including health care delivery assets				
(\$ ..... ) .....	32,900,406	32,900,406		
22. Net adjustment in assets and liabilities due to foreign exchange rates .....				
23. Receivables from parent, subsidiaries and affiliates .....	81,345,245	12,459,835	68,885,410	54,081,461
24. Health care (\$ ..... ) and other amounts receivable .....				
25. Aggregate write-ins for other than invested assets .....	3,223,486,841	1,126,211,030	2,097,275,811	2,067,381,553
26. Total assets excluding Separate Accounts, Segregated Accounts and				
Protected Cell Accounts (Lines 12 to 25) .....	163,097,211,291	1,630,741,548	161,466,469,743	149,973,161,492
27. From Separate Accounts, Segregated Accounts and Protected Cell				
Accounts .....	62,203,995,882		62,203,995,882	60,385,549,743
28. Total (Lines 26 and 27) .....	225,301,207,173	1,630,741,548	223,670,465,625	210,358,711,235
<b>DETAILS OF WRITE-INS</b>				
1101. ....				
1102. ....				
1103. ....				
1198. Summary of remaining write-ins for Line 11 from overflow page .....				
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above) .....				
2501. Corporate owned life insurance .....	1,980,550,440		1,980,550,440	1,926,962,561
2502. Fully refundable deposits, prepayments and other miscellaneous assets				
.....	133,146,148	87,932,203	45,213,945	67,948,505
2503. Employee insurance plan advances .....	40,091,324		40,091,324	39,614,950
2598. Summary of remaining write-ins for Line 25 from overflow page .....	1,069,698,929	1,038,278,827	31,420,102	32,855,537
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above) .....	3,223,486,841	1,126,211,030	2,097,275,811	2,067,381,553

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**LIABILITIES, SURPLUS AND OTHER FUNDS**

	1 Current Year	2 Prior Year
1. Aggregate reserve for life contracts \$ .....109,391,085,184 (Exh. 5, Line 9999999) less \$ ..... included in Line 6.3 (including \$ .....117,803,079 Modco Reserve) .....	109,391,085,184	99,942,257,473
2. Aggregate reserve for accident and health contracts (including \$ .....79,851,954 Modco Reserve) .....	2,794,862,457	2,683,981,025
3. Liability for deposit-type contracts (Exhibit 7, Line 14, Col. 1) (including \$ ..... Modco Reserve) .....	11,574,147,866	10,491,117,975
4. Contract claims:		
4.1 Life (Exhibit 8, Part 1, Line 4.4, Col. 1 less sum of Cols. 9, 10 and 11) .....	340,468,688	420,273,237
4.2 Accident and health (Exhibit 8, Part 1, Line 4.4, sum of Cols. 9, 10 and 11) .....	22,534,817	24,268,522
5. Policyholders' dividends \$ .....10,022,581 and coupons \$ ..... due and unpaid (Exhibit 4, Line 10) .....	10,022,581	10,210,995
6. Provision for policyholders' dividends and coupons payable in following calendar year - estimated amounts:		
6.1 Dividends apportioned for payment (including \$ ..... Modco) .....	1,599,171,763	1,731,292,553
6.2 Dividends not yet apportioned (including \$ ..... Modco) .....		
6.3 Coupons and similar benefits (including \$ ..... Modco) .....		
7. Amount provisionally held for deferred dividend policies not included in Line 6 .....		
8. Premiums and annuity considerations for life and accident and health contracts received in advance less \$ ..... discount; including \$ .....9,405,641 accident and health premiums (Exhibit 1, Part 1, Col. 1, sum of lines 4 and 14) .....	29,443,441	30,048,083
9. Contract liabilities not included elsewhere:		
9.1 Surrender values on canceled contracts .....		
9.2 Provision for experience rating refunds, including the liability of \$ ..... accident and health experience rating refunds of which \$ ..... is for medical loss ratio rebate per the Public Health Service Act .....	9,612,909	12,956,022
9.3 Other amounts payable on reinsurance, including \$ .....26,282,838 assumed and \$ .....8,134,055 ceded .....	34,416,893	27,318,900
9.4 Interest maintenance reserve (IMR, Line 6) .....	4,863,663	349,152,262
10. Commissions to agents due or accrued-life and annuity contracts \$ .....23,110,967 accident and health \$ .....250,172 and deposit-type contract funds \$ .....9,928,386 .....	33,289,525	28,117,416
11. Commissions and expense allowances payable on reinsurance assumed .....	5,176,675	5,301,675
12. General expenses due or accrued (Exhibit 2, Line 12, Col. 6) .....	1,120,711,796	958,827,158
13. Transfers to Separate Accounts due or accrued (net) (including \$ .....(176,924,714) accrued for expense allowances recognized in reserves, net of reinsured allowances) .....	(188,589,116)	(245,896,321)
14. Taxes, licenses and fees due or accrued, excluding federal income taxes (Exhibit 3, Line 9, Col. 5) .....	60,440,244	37,853,252
15.1 Current federal and foreign income taxes, including \$ ..... on realized capital gains (losses) .....		
15.2 Net deferred tax liability .....		
16. Unearned investment income .....	147,178,617	130,995,421
17. Amounts withheld or retained by company as agent or trustee .....	31,994,760	35,064,726
18. Amounts held for agents' account, including \$ ..... agents' credit balances .....	301,711,951	259,075,424
19. Remittances and items not allocated .....	(382,509,320)	(21,613,176)
20. Net adjustment in assets and liabilities due to foreign exchange rates .....	1,892	9,554
21. Liability for benefits for employees and agents if not included above .....	183,613,798	176,535,932
22. Borrowed money \$ .....249,940,070 and interest thereon \$ .....	249,940,070	276,817,818
23. Dividends to stockholders declared and unpaid .....		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve (AVR, Line 16, Col. 7) .....	3,178,008,369	2,817,138,360
24.02 Reinsurance in unauthorized and certified (\$ ..... ) companies .....		
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$ ..... ) reinsurers .....		
24.04 Payable to parent, subsidiaries and affiliates .....	36,595,902	18,212,103
24.05 Drafts outstanding .....		
24.06 Liability for amounts held under uninsured plans .....		
24.07 Funds held under coinsurance .....		
24.08 Derivatives .....	6,014,042,701	5,840,340,713
24.09 Payable for securities .....	168,191,017	142,215,754
24.10 Payable for securities lending .....		
24.11 Capital notes \$ ..... and interest thereon \$ .....		
25. Aggregate write-ins for liabilities .....	9,281,690,021	8,817,870,120
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25) .....	146,052,119,164	134,999,742,976
27. From Separate Accounts Statement .....	62,194,856,505	60,376,436,122
28. Total liabilities (Lines 26 and 27) .....	208,246,975,669	195,376,179,098
29. Common capital stock .....		
30. Preferred capital stock .....		
31. Aggregate write-ins for other than special surplus funds .....		
32. Surplus notes .....	2,231,930,599	2,231,637,183
33. Gross paid in and contributed surplus (Page 3, Line 33, Col. 2 plus Page 4, Line 51.1, Col. 1) .....		
34. Aggregate write-ins for special surplus funds .....	3,250,000	3,250,000
35. Unassigned funds (surplus) .....	13,188,309,357	12,747,644,954
36. Less treasury stock, at cost:		
36.1 ..... shares common (value included in Line 29 \$ ..... ) .....		
36.2 ..... shares preferred (value included in Line 30 \$ ..... ) .....		
37. Surplus (Total Lines 31+32+33+34+35-36) (including \$ .....9,139,377 in Separate Accounts Statement) .....	15,423,489,956	14,982,532,137
38. Totals of Lines 29, 30 and 37 (Page 4, Line 55) .....	15,423,489,956	14,982,532,137
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3) .....	223,670,465,625	210,358,711,235
<b>DETAILS OF WRITE-INS</b>		
2501. Repurchase agreements .....	4,735,731,002	5,134,118,339
2502. Derivative collateral .....	2,839,407,087	2,126,484,960
2503. Derivative interest liability .....	1,626,497,813	1,474,873,702
2598. Summary of remaining write-ins for Line 25 from overflow page .....	80,054,119	82,393,119
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above) .....	9,281,690,021	8,817,870,120
3101. ....		
3102. ....		
3103. ....		
3198. Summary of remaining write-ins for Line 31 from overflow page .....		
3199. Totals (Lines 3101 thru 3103 plus 3198)(Line 31 above) .....		
3401. Designated surplus for group annuities .....	2,500,000	2,500,000
3402. Designated surplus for separate account business .....	750,000	750,000
3403. ....		
3498. Summary of remaining write-ins for Line 34 from overflow page .....		
3499. Totals (Lines 3401 thru 3403 plus 3498)(Line 34 above) .....	3,250,000	3,250,000

**SUMMARY OF OPERATIONS**

	1 Current Year	2 Prior Year
1. Premiums and annuity considerations for life and accident and health contracts (Exhibit 1, Part 1, Line 20.4, Col. 1, less Col. 11) .....	21,408,422,772	21,530,383,076
2. Considerations for supplementary contracts with life contingencies .....	23,549,023	12,366,075
3. Net investment income (Exhibit of Net Investment Income, Line 17) .....	6,198,498,167	6,246,441,543
4. Amortization of Interest Maintenance Reserve (IMR, Line 5) .....	135,288,595	140,397,231
5. Separate Accounts net gain from operations excluding unrealized gains or losses .....	3,135	(13,121)
6. Commissions and expense allowances on reinsurance ceded (Exhibit 1, Part 2, Line 26.1, Col. 1) .....	398,451,052	110,106,393
7. Reserve adjustments on reinsurance ceded .....	82,715,440	16,029,021
8. Miscellaneous Income:		
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts .....	355,790,536	361,717,460
8.2 Charges and fees for deposit-type contracts .....		
8.3 Aggregate write-ins for miscellaneous income .....	446,735,033	309,723,915
9. Total (Lines 1 to 8.3) .....	29,049,453,753	28,727,151,593
10. Death benefits .....	1,691,839,821	1,763,896,509
11. Matured endowments (excluding guaranteed annual pure endowments) .....	22,098,524	15,080,860
12. Annuity benefits (Exhibit 8, Part 2, Line 6.4, Cols. 4 + 8) .....	1,716,610,953	1,469,389,047
13. Disability benefits and benefits under accident and health contracts .....	364,195,418	365,311,161
14. Coupons, guaranteed annual pure endowments and similar benefits .....		
15. Surrender benefits and withdrawals for life contracts .....	14,003,404,091	12,368,838,810
16. Group conversions .....		
17. Interest and adjustments on contract or deposit-type contract funds .....	313,262,892	283,860,603
18. Payments on supplementary contracts with life contingencies .....	11,491,950	10,866,006
19. Increase in aggregate reserves for life and accident and health contracts .....	9,611,871,345	9,344,994,281
20. Totals (Lines 10 to 19) .....	27,734,774,994	25,622,237,277
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only) (Exhibit 1, Part 2, Line 31, Col. 1) .....	835,574,160	743,202,207
22. Commissions and expense allowances on reinsurance assumed (Exhibit 1, Part 2, Line 26.2, Col. 1) .....	102,861,238	126,121,762
23. General insurance expenses (Exhibit 2, Line 10, Cols. 1, 2, 3 and 4) .....	2,242,669,265	1,789,844,929
24. Insurance taxes, licenses and fees, excluding federal income taxes (Exhibit 3, Line 7, Cols. 1 + 2 + 3) .....	237,373,881	187,133,089
25. Increase in loading on deferred and uncollected premiums .....	43,039,144	5,389,038
26. Net transfers to or (from) Separate Accounts net of reinsurance .....	(2,224,883,854)	(753,445,438)
27. Aggregate write-ins for deductions .....	(1,355,695,597)	(921,194,332)
28. Totals (Lines 20 to 27) .....	27,615,713,231	26,799,288,532
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28) .....	1,433,740,522	1,927,863,061
30. Dividends to policyholders .....	1,565,630,560	1,727,593,543
31. Net gain from operations after dividends to policyholders and before federal income taxes (Line 29 minus Line 30) .....	(131,890,038)	200,269,518
32. Federal and foreign income taxes incurred (excluding tax on capital gains) .....	(326,418,900)	(153,275,542)
33. Net gain from operations after dividends to policyholders and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32) .....	194,528,862	353,545,060
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ ..... (15,342,602) (excluding taxes of \$ ..... (24,257,586) transferred to the IMR) .....	(208,411,773)	58,635,533
35. Net income (Line 33 plus Line 34) .....	(13,882,911)	412,180,593
<b>CAPITAL AND SURPLUS ACCOUNT</b>		
36. Capital and surplus, December 31, prior year (Page 3, Line 38, Col. 2) .....	14,982,532,137	14,231,326,051
37. Net income (Line 35) .....	(13,882,911)	412,180,593
38. Change in net unrealized capital gains (losses) less capital gains tax of \$ ..... 178,925,252 .....	1,104,826,359	194,731,062
39. Change in net unrealized foreign exchange capital gain (loss) .....	(440,578,518)	(225,759,636)
40. Change in net deferred income tax .....	247,381,944	231,108,817
41. Change in nonadmitted assets .....	(326,288,254)	(15,892,928)
42. Change in liability for reinsurance in unauthorized and certified companies .....		
43. Change in reserve on account of change in valuation basis, (increase) or decrease .....	(700,000)	
44. Change in asset valuation reserve .....	(360,870,009)	(196,860,334)
45. Change in treasury stock (Page 3, Lines 36.1 and 36.2, Col. 2 minus Col. 1) .....		
46. Surplus (contributed to) withdrawn from Separate Accounts during period .....	137,379	(30,580)
47. Other changes in surplus in Separate Accounts Statement .....	22,620	(833,061)
48. Change in surplus notes .....	293,417	491,416,033
49. Cumulative effect of changes in accounting principles .....		2,617,428
50. Capital changes:		
50.1 Paid in .....		
50.2 Transferred from surplus (Stock Dividend) .....		
50.3 Transferred to surplus .....		
51. Surplus adjustment:		
51.1 Paid in .....		
51.2 Transferred to capital (Stock Dividend) .....		
51.3 Transferred from capital .....		
51.4 Change in surplus as a result of reinsurance .....		
52. Dividends to stockholders .....		
53. Aggregate write-ins for gains and losses in surplus .....	230,615,792	(141,471,308)
54. Net change in capital and surplus for the year (Lines 37 through 53) .....	440,957,819	751,206,086
55. Capital and surplus, December 31, current year (Lines 36 + 54) (Page 3, Line 38) .....	15,423,489,956	14,982,532,137
<b>DETAILS OF WRITE-INS</b>		
08.301. Administrative fee and other income .....	446,735,033	372,823,915
08.302. Corporate owned life insurance benefit funding cost .....		(63,100,000)
08.303. ....		
08.398. Summary of remaining write-ins for Line 8.3 from overflow page .....		
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398)(Line 8.3 above) .....	446,735,033	309,723,915
2701. Change in reserves due to reinsurance agreement .....	(1,509,796,199)	(941,820,541)
2702. Market value adjustment transfer .....	(64,542,484)	(17,283,670)
2703. Reinsurance ceded adjustment .....	189,419,444	
2798. Summary of remaining write-ins for Line 27 from overflow page .....	29,223,642	37,909,879
2799. Totals (Lines 2701 thru 2703 plus 2798)(Line 27 above) .....	(1,355,695,597)	(921,194,332)
5301. Reinsurance ceded adjustment .....	189,419,444	
5302. Other changes in surplus .....	34,927,403	8,701,713
5303. Change in minimum pension liability .....	6,268,945	(150,173,021)
5398. Summary of remaining write-ins for Line 53 from overflow page .....		
5399. Totals (Lines 5301 thru 5303 plus 5398)(Line 53 above) .....	230,615,792	(141,471,308)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**CASH FLOW**

	1	2
	Current Year	Prior Year
<b>Cash from Operations</b>		
1. Premiums collected net of reinsurance .....	20,433,595,404	20,016,614,129
2. Net investment income .....	6,393,738,365	6,213,099,970
3. Miscellaneous income .....	1,251,485,821	824,995,376
4. Total (Lines 1 through 3) .....	28,078,819,590	27,054,709,475
5. Benefit and loss related payments .....	17,832,334,133	16,260,499,766
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts .....	(2,282,031,154)	(770,582,444)
7. Commissions, expenses paid and aggregate write-ins for deductions .....	1,844,829,215	1,964,915,482
8. Dividends paid to policyholders .....	1,697,939,764	1,565,323,828
9. Federal and foreign income taxes paid (recovered) net of \$ .....101,782,032 tax on capital gains (losses) .....	(352,810,012)	234,355,069
10. Total (Lines 5 through 9) .....	18,740,261,946	19,254,511,701
11. Net cash from operations (Line 4 minus Line 10) .....	9,338,557,644	7,800,197,774
<b>Cash from Investments</b>		
12. Proceeds from investments sold, matured or repaid:		
12.1 Bonds .....	14,659,729,714	12,495,748,943
12.2 Stocks .....	651,548,869	1,211,212,794
12.3 Mortgage loans .....	3,846,629,207	2,574,694,271
12.4 Real estate .....	59,477,126	110,006,251
12.5 Other invested assets .....	907,794,485	2,560,163,094
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments .....	(38,360,762)	2,935,660
12.7 Miscellaneous proceeds .....	460,436,688	161,376,236
12.8 Total investment proceeds (Lines 12.1 to 12.7) .....	20,547,255,327	19,116,137,249
13. Cost of investments acquired (long-term only):		
13.1 Bonds .....	21,393,094,405	15,011,821,492
13.2 Stocks .....	1,877,459,425	1,114,663,420
13.3 Mortgage loans .....	3,504,567,522	5,296,118,174
13.4 Real estate .....	200,908,436	283,415,424
13.5 Other invested assets .....	1,568,129,204	3,443,452,757
13.6 Miscellaneous applications .....	511,793,079	28,944,756
13.7 Total investments acquired (Lines 13.1 to 13.6) .....	29,055,952,071	25,178,416,023
14. Net increase (decrease) in contract loans and premium notes .....	647,665,084	657,744,827
15. Net cash from investments (Line 12.8 minus Line 13.7 minus Line 14) .....	(9,156,361,828)	(6,720,023,601)
<b>Cash from Financing and Miscellaneous Sources</b>		
16. Cash provided (applied):		
16.1 Surplus notes, capital notes .....	293,417	491,416,033
16.2 Capital and paid in surplus, less treasury stock .....		
16.3 Borrowed funds .....	(26,916,744)	8,903,849
16.4 Net deposits on deposit-type contracts and other insurance liabilities .....	755,330,761	830,860,713
16.5 Dividends to stockholders .....		
16.6 Other cash provided (applied) .....	(233,612,080)	(1,242,727,751)
17. Net cash from financing and miscellaneous sources (Lines 16.1 to 16.4 minus Line 16.5 plus Line 16.6) .....	495,095,354	88,452,844
<b>RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS</b>		
18. Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17) .....	677,291,170	1,168,627,017
19. Cash, cash equivalents and short-term investments:		
19.1 Beginning of year .....	3,048,645,110	1,880,018,093
19.2 End of year (Line 18 plus Line 19.1) .....	3,725,936,280	3,048,645,110

**Note: Supplemental disclosures of cash flow information for non-cash transactions:**

20.0001. Acquisition of affiliated common stock for bonds and mortgage loans .....	3,286,679,337	
20.0002. Premium recognized for a group annuity contract .....	905,045,062	1,470,936,408
20.0003. Bonds received as consideration for a group annuity contract .....	905,045,062	1,466,416,514
20.0004. Other invested assets contributed to subsidiary .....	682,102,736	
20.0005. Bond conversions and refinancing .....	419,261,516	1,196,967,823
20.0006. Other invested assets stock distribution .....	105,936,231	5,075,094
20.0007. Transfer of mortgage loan to other than invested assets .....	98,392,208	
20.0008. Bonds converted from long-term to short-term .....	88,838,415	
20.0009. Other invested assets to bonds .....	79,797,836	
20.0010. Change in market value of COLI .....	58,874,190	
20.0011. Dividend reinvestment .....	28,860,653	16,248,526
20.0012. Stock conversions .....	22,066,669	33,907,076
20.0013. Net investment income payment in-kind bonds .....	3,999,576	11,870,342

**ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company**

Note: Supplemental disclosures of cash flow information for non-cash transactions:

20.0014. Bank loan rollovers .....	4,591,260	142,660,534
20.0015. Interest capitalization for long-term debt .....	1,844,174	3,178,617
20.0016. Transfer from other invested assets to real estate in connection with a change in accounting principle .....		23,950,611
20.0017. Bonds received as consideration for assignment of deposit-type liabilities .....		690,233,257
20.0018. Deposit-type liabilities assigned in exchange for bonds .....		690,233,257
20.0019. Bonds received in exchange for equity of an indirect subsidiary .....		184,795,000
20.0020. Transfers from bonds to other invested assets .....		19,216,790
20.0021. Other invested assets received as consideration for a group annuity contract .....		4,519,894

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ANALYSIS OF OPERATIONS BY LINES OF BUSINESS**

	1 Total	2 Industrial Life	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health			12 Aggregate of All Other Lines of Business
			3 Life Insurance	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance (a)	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other	
1. Premiums and annuity considerations for life and accident and health contracts	21,408,422,772		5,309,185,416	2,428,309,004			1,428,628,637	11,655,352,697			586,947,018	
2. Considerations for supplementary contracts with life contingencies	23,549,023				23,549,023							
3. Net investment income	6,198,498,167		2,808,614,115	601,647,234	68,469,648		1,071,728,919	1,462,748,950	881,318		184,407,983	
4. Amortization of Interest Maintenance Reserve (IMR)	135,288,595		67,777,586	5,878,011	881,667		17,776,518	41,283,880	(8,472)		1,699,405	
5. Separate Accounts net gain from operations excluding unrealized gains or losses	3,135		(9)	2	(1)			3,143				
6. Commissions and expense allowances on reinsurance ceded	398,451,052		374,466,548				4,163				23,980,341	
7. Reserve adjustments on reinsurance ceded	82,715,440		66,362,527				9,330,809				7,022,104	
8. Miscellaneous Income:												
8.1 Fees associated with income from investment management, administration and contract guarantees from Separate Accounts	355,790,536		44,103,649	199,060,989			22,488,623	90,137,275				
8.2 Charges and fees for deposit-type contracts												
8.3 Aggregate write-ins for miscellaneous income	446,735,033		96,184,974	31,385,407	859,442		7,802,042	306,891,933	6,546		3,604,689	
9. Totals (Lines 1 to 8.3)	29,049,453,753		8,766,694,806	3,266,280,647	93,759,779		2,557,759,711	13,556,417,878	879,392		807,661,540	
10. Death benefits	1,691,839,821		1,519,874,877				171,964,944					
11. Matured endowments (excluding guaranteed annual pure endowments)	22,098,524		22,090,452				8,072					
12. Annuity benefits	1,716,610,953			671,339,128				1,045,271,825				
13. Disability benefits and benefits under accident and health contracts	364,195,418		25,996,686				163,104				338,035,628	
14. Coupons, guaranteed annual pure endowments and similar benefits												
15. Surrender benefits and withdrawals for life contracts	14,003,404,091		1,089,858,940	1,286,941,105			46,587,559	11,580,013,438			3,049	
16. Group conversions												
17. Interest and adjustments on contract or deposit-type contract funds	313,262,892		33,361,461	7,697,916	15,818,403		2,745,904	253,629,958			9,250	
18. Payments on supplementary contracts with life contingencies	11,491,950				11,491,950							
19. Increase in aggregate reserves for life and accident and health contracts	9,611,871,345		3,271,691,628	1,329,437,948	16,036,346		2,068,416,088	2,815,407,903			110,881,432	
20. Totals (Lines 10 to 19)	27,734,774,994		5,962,874,044	3,295,416,097	43,346,699		2,289,885,671	15,694,323,124			448,929,359	
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	835,574,160		504,122,636	107,496,423			59,962,027	83,765,266			80,227,808	
22. Commissions and expense allowances on reinsurance assumed	102,861,238		14,935,995	147,781,747			5,738,728	82,186,515				
23. General insurance expenses	2,242,669,265		1,292,619,638	147,057,537	1,640,886		66,792,582	564,104,483	4,791		169,725,138	
24. Insurance taxes, licenses and fees, excluding federal income taxes	237,373,881		147,057,537	7,945,539	230,238		35,909,048	25,703,207	4,421		20,523,891	
25. Increase in loading on deferred and uncollected premiums	43,039,144		43,002,067				1,036				36,041	
26. Net transfers to or (from) Separate Accounts net of reinsurance	(2,224,883,854)		(5,088,671)	(434,764,710)			(25,515,471)	(1,759,515,002)				
27. Aggregate write-ins for deductions	(1,355,695,597)		179,798,227	351,585	421,244		505,544	(1,537,859,307)	9,924		1,077,186	
28. Totals (Lines 20 to 27)	27,615,713,231		8,139,321,473	3,124,226,681	45,639,067		2,433,279,165	13,152,708,286	19,136		720,519,423	
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	1,433,740,522		627,373,333	142,053,966	48,120,712		124,480,546	403,709,592	860,256		87,142,117	
30. Dividends to policyholders	1,565,630,560		1,562,712,183	3,210,422	76,390		(24,943,424)	(927)			24,575,916	
31. Net gain from operations after dividends to policyholders and before federal income taxes (Line 29 minus Line 30)	(131,890,038)		(935,338,850)	138,843,544	48,044,322		149,423,970	403,710,519	860,256		62,566,201	
32. Federal income taxes incurred (excluding tax on capital gains)	(326,418,900)		(482,464,791)	33,560,669	6,237,795		32,073,707	64,188,570	60,134		19,925,016	
33. Net gain from operations after dividends to policyholders and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	194,528,862		(452,874,059)	105,282,875	41,806,527		117,350,263	339,521,949	800,122		42,641,185	
<b>DETAILS OF WRITE-INS</b>												
08.301. Administrative fee and other income	446,735,033		96,184,974	31,385,407	859,442		7,802,042	306,891,933	6,546		3,604,689	
08.302.												
08.303.												
08.398. Summary of remaining write-ins for Line 8.3 from overflow page												
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	446,735,033		96,184,974	31,385,407	859,442		7,802,042	306,891,933	6,546		3,604,689	
2701. Change in reserves due to reinsurance agreement	(1,509,796,199)							(1,509,796,199)				
2702. Market Value adjustment transfer	(64,542,484)		(33,079,772)					(31,462,712)				
2703. Reinsurance ceded adjustment	189,419,444		189,419,444									
2798. Summary of remaining write-ins for Line 27 from overflow page	29,223,642		23,458,555	351,585	421,244		505,544	3,399,604	9,924		1,077,186	
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	(1,355,695,597)		179,798,227	351,585	421,244		505,544	(1,537,859,307)	9,924		1,077,186	

(a) Includes the following amounts for FEGLI/SGLI: Line 1 \_\_\_\_\_, Line 10 \_\_\_\_\_, Line 16 \_\_\_\_\_, Line 23 \_\_\_\_\_, Line 24 \_\_\_\_\_

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ANALYSIS OF INCREASE IN RESERVES DURING THE YEAR**

	1 Total	2 Industrial Life	Ordinary			6 Credit Life (Group and Individual)	Group	
			3 Life Insurance	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance	8 Annuities
Involving Life or Disability Contingencies (Reserves)								
(Net of Reinsurance Ceded)								
1. Reserve December 31, prior year .....	99,942,257,473		50,573,788,304	12,052,875,526	96,014,339		16,381,394,171	20,838,185,132
2. Tabular net premiums or considerations .....	21,570,932,268		6,039,049,175	2,428,309,004	23,549,023		1,424,672,369	11,655,352,697
3. Present value of disability claims incurred .....	(544,161)		(544,161)		XXX			
4. Tabular interest .....	4,426,491,198		2,322,445,733	434,680,783	5,135,772		910,400,907	753,828,003
5. Tabular less actual reserve released .....	(85,064,862)		(903,101)	(83,005,262)	(1,156,499)			
6. Increase in reserve on account of change in valuation basis .....	700,000							700,000
7. Other increases (net) .....	(459,905,933)		(336,968,297)	52,271,033			(4,306,724)	(170,901,945)
8. Totals (Lines 1 to 7) .....	125,394,865,983		58,596,867,653	14,885,131,084	123,542,635		18,712,160,723	33,077,163,887
9. Tabular cost .....	2,701,086,866		2,549,231,710	38,404	XXX		151,816,752	
10. Reserves released by death .....	1,071,985,780		965,667,743	XXX	XXX		106,318,037	XXX
11. Reserves released by other terminations (net) .....	14,295,271,031		1,369,390,039	1,292,878,295			52,989,259	11,580,013,438
12. Annuity, supplementary contract and disability payments involving life contingencies .....	1,753,166,991		25,996,686	670,243,426	11,491,950		163,104	1,045,271,825
13. Net transfers to or (from) Separate Accounts .....	(3,817,729,869)		(39,789,408)	(456,943,733)			(51,685,528)	(3,269,311,200)
14. Total Deductions (Lines 9 to 13) .....	16,003,780,799		4,870,496,770	1,506,216,392	11,491,950		259,601,624	9,355,974,063
15. Reserve December 31, current year	109,391,085,184		53,726,370,883	13,378,914,692	112,050,685		18,452,559,099	23,721,189,824

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT OF NET INVESTMENT INCOME**

	1 Collected During Year	2 Earned During Year
1. U.S. Government bonds	(a) 332,957,664	331,888,916
1.1 Bonds exempt from U.S. tax	(a)	
1.2 Other bonds (unaffiliated)	(a) 2,964,481,386	3,004,622,347
1.3 Bonds of affiliates	(a) 245,891,447	246,409,061
2.1 Preferred stocks (unaffiliated)	(b) 23,578,224	23,578,224
2.11 Preferred stocks of affiliates	(b)	
2.2 Common stocks (unaffiliated)	59,452,509	58,879,367
2.21 Common stocks of affiliates	431,934,235	431,053,429
3. Mortgage loans	(c) 1,006,700,662	1,008,509,723
4. Real estate	(d) 179,135,565	174,172,535
5. Contract loans	759,621,155	757,432,466
6. Cash, cash equivalents and short-term investments	(e) 33,430,936	33,435,601
7. Derivative instruments	(f) 454,897,154	342,799,413
8. Other invested assets	622,802,035	460,217,607
9. Aggregate write-ins for investment income	(413,309)	(414,810)
10. Total gross investment income	7,114,469,663	6,872,583,879
11. Investment expenses		(g) 347,367,325
12. Investment taxes, licenses and fees, excluding federal income taxes		(g) 27,913,929
13. Interest expense		(h) 192,141,762
14. Depreciation on real estate and other invested assets		(i) 106,662,695
15. Aggregate write-ins for deductions from investment income		
16. Total deductions (Lines 11 through 15)		674,085,711
17. Net investment income (Line 10 minus Line 16)		6,198,498,168
<b>DETAILS OF WRITE-INS</b>		
0901. Miscellaneous	(413,309)	(414,810)
0902.		
0903.		
0998. Summary of remaining write-ins for Line 9 from overflow page		
0999. Totals (Lines 0901 thru 0903 plus 0998) (Line 9, above)	(413,309)	(414,810)
1501.		
1502.		
1503.		
1598. Summary of remaining write-ins for Line 15 from overflow page		
1599. Totals (Lines 1501 thru 1503 plus 1598) (Line 15, above)		

- (a) Includes \$ 333,689,372 accrual of discount less \$ 170,788,494 amortization of premium and less \$ 82,077,998 paid for accrued interest on purchases.
- (b) Includes \$ accrual of discount less \$ amortization of premium and less \$ paid for accrued dividends on purchases.
- (c) Includes \$ 2,678,460 accrual of discount less \$ (652,780) amortization of premium and less \$ paid for accrued interest on purchases.
- (d) Includes \$ 115,960 for company's occupancy of its own buildings; and excludes \$ 23,033,111 interest on encumbrances.
- (e) Includes \$ 32,715,130 accrual of discount less \$ 5,778 amortization of premium and less \$ paid for accrued interest on purchases.
- (f) Includes \$ accrual of discount less \$ amortization of premium.
- (g) Includes \$ investment expenses and \$ investment taxes, licenses and fees, excluding federal income taxes, attributable to segregated and Separate Accounts.
- (h) Includes \$ 151,187,500 interest on surplus notes and \$ interest on capital notes.
- (i) Includes \$ 106,662,695 depreciation on real estate and \$ depreciation on other invested assets.

**EXHIBIT OF CAPITAL GAINS (LOSSES)**

	1	2	3	4	5
	Realized Gain (Loss) On Sales or Maturity	Other Realized Adjustments	Total Realized Capital Gain (Loss) (Columns 1 + 2)	Change in Unrealized Capital Gain (Loss)	Change in Unrealized Foreign Exchange Capital Gain (Loss)
1. U.S. Government bonds	(127,377,963)		(127,377,963)	(11,343,626)	
1.1 Bonds exempt from U.S. tax					
1.2 Other bonds (unaffiliated)	33,973,418	(133,331,167)	(99,357,749)	(9,041,749)	(448,066,167)
1.3 Bonds of affiliates	(2,600,530)	(18,771,748)	(21,372,278)	22,458,151	(14,763,865)
2.1 Preferred stocks (unaffiliated)	9,754,185	(673,200)	9,080,985	(64,240)	(21,023,200)
2.11 Preferred stocks of affiliates					
2.2 Common stocks (unaffiliated)	(27,640,679)	(21,182,468)	(48,823,147)	182,054,599	2,094,082
2.21 Common stocks of affiliates	18,529		18,529	872,345,098	
3. Mortgage loans	1,181,348	(14,917,556)	(13,736,208)	(2,250,000)	(159,297,451)
4. Real estate	14,852,798	(1,118,221)	13,734,577		
5. Contract loans	(5,585)		(5,585)		
6. Cash, cash equivalents and short-term investments	100,194	(38,460,957)	(38,360,763)		
7. Derivative instruments	72,251,320	(79,705,271)	(7,453,951)	293,972,794	228,453
8. Other invested assets	2,648,328	(97,071,760)	(94,423,432)	(17,504,148)	(44,247,946)
9. Aggregate write-ins for capital gains (losses)	42,678	35,564,825	35,607,503	(46,875,268)	7,262,989
10. Total capital gains (losses)	(22,801,959)	(369,667,523)	(392,469,482)	1,283,751,611	(677,813,105)
<b>DETAILS OF WRITE-INS</b>					
0901. Miscellaneous gains (losses)	42,678	35,564,825	35,607,503	(46,875,268)	7,262,989
0902.					
0903.					
0998. Summary of remaining write-ins for Line 9 from overflow page					
0999. Totals (Lines 0901 thru 0903 plus 0998) (Line 9, above)	42,678	35,564,825	35,607,503	(46,875,268)	7,262,989

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT - 1 PART 1 - PREMIUMS AND ANNUITY CONSIDERATIONS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS**

	1 Total	2 Industrial Life	Ordinary		5 Credit Life (Group and Individual)	Group		Accident and Health			11 Aggregate of All Other Lines of Business
			3 Life Insurance	4 Individual Annuities		6 Life Insurance	7 Annuities	8 Group	9 Credit (Group and Individual)	10 Other	
<b>FIRST YEAR (other than single)</b>											
1. Uncollected	4,127,027		3,563,319								563,708
2. Deferred and accrued	132,664,264		132,905,911								(241,647)
3. Deferred, accrued and uncollected:											
3.1 Direct	139,219,815		136,469,229								2,750,586
3.2 Reinsurance assumed											
3.3 Reinsurance ceded	2,428,525										2,428,525
3.4 Net (Line 1 + Line 2)	136,791,290		136,469,229								322,061
4. Advance											
5. Line 3.4 - Line 4	136,791,290		136,469,229								322,061
6. Collected during year:											
6.1 Direct	3,932,477,098		645,092,577	814,840,764		5,517,327	2,411,952,678				55,073,752
6.2 Reinsurance assumed	1,335,815,958						1,335,815,958				
6.3 Reinsurance ceded	41,287,816		37,030,361			1,418,460					2,838,995
6.4 Net	5,227,005,240		608,062,216	814,840,764		4,098,867	3,747,768,636				52,234,757
7. Line 5 + Line 6.4	5,363,796,530		744,531,445	814,840,764		4,098,867	3,747,768,636				52,556,818
8. Prior year (uncollected + deferred and accrued - advance)	114,542,715		114,174,914								367,801
9. First year premiums and considerations:											
9.1 Direct	3,954,613,792		667,386,892	814,840,764		5,517,327	2,411,952,678				54,916,131
9.2 Reinsurance assumed	1,335,815,958						1,335,815,958				
9.3 Reinsurance ceded	41,175,935		37,030,361			1,418,460					2,727,114
9.4 Net (Line 7 - Line 8)	5,249,253,815		630,356,531	814,840,764		4,098,867	3,747,768,636				52,189,017
<b>SINGLE</b>											
10. Single premiums and considerations:											
10.1 Direct	6,468,560,777		1,824,961,835	1,238,172,197		1,376,689,484	2,014,138,855				14,598,406
10.2 Reinsurance assumed	116,418						116,418				
10.3 Reinsurance ceded											
10.4 Net	6,468,677,195		1,824,961,835	1,238,172,197		1,376,689,484	2,014,255,273				14,598,406
<b>RENEWAL</b>											
11. Uncollected	141,104,495		132,904,475			635,386					7,564,634
12. Deferred and accrued	553,075,842		563,306,202	5,768		(165,006)					(10,071,122)
13. Deferred, accrued and uncollected:											
13.1 Direct	801,861,075		801,207,931			(7,260,448)					7,913,592
13.2 Reinsurance assumed	11,308,839		12,641,877	5,768		(1,338,806)					
13.3 Reinsurance ceded	118,989,576		117,639,130			(9,069,634)					10,420,080
13.4 Net (Line 11 + Line 12)	694,180,338		696,210,678	5,768		470,380					(2,506,488)
14. Advance	29,443,441		20,037,800								9,405,641
15. Line 13.4 - Line 14	664,736,897		676,172,878	5,768		470,380					(11,912,129)
16. Collected during year:											
16.1 Direct	10,796,668,424		3,842,134,365	375,257,917		99,700,166	5,840,320,195	160,081			639,095,700
16.2 Reinsurance assumed	107,059,000		53,944,275	38,485		145,388	52,930,852				
16.3 Reinsurance ceded	1,260,775,732		1,085,019,412			55,420,965		160,081			120,175,274
16.4 Net	9,642,951,692		2,811,059,228	375,296,402		44,424,589	5,893,251,047				518,920,426
17. Line 15 + Line 16.4	10,307,688,589		3,487,232,106	375,302,170		44,894,969	5,893,251,047				507,008,297
18. Prior year (uncollected + deferred and accrued - advance)	615,992,538		632,161,474	6,503		(2,946,400)	(77,742)				(13,151,297)
19. Renewal premiums and considerations:											
19.1 Direct	10,872,714,094		3,913,879,154	375,257,917		103,038,612	5,840,397,937	160,081			639,980,393
19.2 Reinsurance assumed	106,098,683		52,995,245	37,750		134,836	52,930,852				
19.3 Reinsurance ceded	1,287,116,726		1,111,803,768			55,332,079		160,081			119,820,798
19.4 Net (Line 17 - Line 18)	9,691,696,051		2,855,070,631	375,295,667		47,841,369	5,893,328,789				520,159,595
<b>TOTAL</b>											
20. Total premiums and annuity considerations:											
20.1 Direct	21,295,888,663		6,406,227,881	2,428,270,878		1,485,245,423	10,266,489,470	160,081			709,494,930
20.2 Reinsurance assumed	1,442,031,059		52,995,245	37,750		134,836	1,388,863,228				
20.3 Reinsurance ceded	1,328,292,661		1,148,834,129			56,750,539		160,081			122,547,912
20.4 Net (Lines 9.4 + 10.4 + 19.4)	21,409,627,061		5,310,388,997	2,428,308,628		1,428,629,720	11,655,352,698				586,947,018

**EXHIBIT - 1 PART 2 - DIVIDENDS AND COUPONS APPLIED, REINSURANCE COMMISSIONS AND EXPENSE ALLOWANCES AND COMMISSIONS INCURRED (Direct Business Only)**

	1 Total	2 Industrial Life	Ordinary		5 Credit Life (Group and Individual)	Group		Accident and Health			11 Aggregate of All Other Lines of Business
			3 Life Insurance	4 Individual Annuities		6 Life Insurance	7 Annuities	8 Group	9 Credit (Group and Individual)	10 Other	
<b>DIVIDENDS AND COUPONS APPLIED (included in Part 1)</b>											
21. To pay renewal premiums .....	134,341,038		133,980,966	5,992							354,080
22. All other .....	1,371,321,250		1,368,148,405	3,172,845							
<b>REINSURANCE COMMISSIONS AND EXPENSE ALLOWANCES INCURRED</b>											
23. First year (other than single):											
23.1 Reinsurance ceded .....	35,789,138		33,027,330			393					2,761,415
23.2 Reinsurance assumed .....											
23.3 Net ceded less assumed .....	35,789,138		33,027,330			393					2,761,415
24. Single:											
24.1 Reinsurance ceded .....											
24.2 Reinsurance assumed .....											
24.3 Net ceded less assumed .....											
25. Renewal:											
25.1 Reinsurance ceded .....	362,661,914		341,439,217			3,771					21,218,926
25.2 Reinsurance assumed .....	102,861,238		14,935,994			5,738,728	82,186,516				
25.3 Net ceded less assumed .....	259,800,676		326,503,223			(5,734,957)	(82,186,516)				21,218,926
26. Totals:											
26.1 Reinsurance ceded (Page 6, Line 6) .....	398,451,052		374,466,547			4,164					23,980,341
26.2 Reinsurance assumed (Page 6, Line 22) .....	102,861,238		14,935,994			5,738,728	82,186,516				
26.3 Net ceded less assumed .....	295,589,814		359,530,553			(5,734,564)	(82,186,516)				23,980,341
<b>COMMISSIONS INCURRED (direct business only)</b>											
27. First year (other than single) .....	342,091,900		265,430,610	33,593,496		2,570,326	14,141,873				26,355,595
28. Single .....	87,891,021		7,739,359	44,177,833		31,856,714	3,450,000				667,115
29. Renewal .....	405,591,239		230,952,667	29,725,093		25,534,988	66,173,393				53,205,098
30. Deposit-type contract funds .....											
31. Totals (to agree with Page 6, Line 21)	835,574,160		504,122,636	107,496,422		59,962,028	83,765,266				80,227,808

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 2 - GENERAL EXPENSES**

	Insurance				5 Investment	6 Total
	1 Life	2 Accident and Health		4 All Other Lines of Business		
		2 Cost Containment	3 All Other			
1. Rent	101,013,023		7,391,672		1,566,207	109,970,902
2. Salaries and wages	1,020,097,334	2,559,751	72,086,318		15,816,610	1,110,560,013
3.11 Contributions for benefit plans for employees	184,864,503	554,368	12,973,173		2,866,324	201,258,368
3.12 Contributions for benefit plans for agents	96,121,784		7,033,754		1,490,368	104,645,906
3.21 Payments to employees under non-funded benefit plans						
3.22 Payments to agents under non-funded benefit plans						
3.31 Other employee welfare	8,985,454		657,515		139,319	9,782,288
3.32 Other agent welfare						
4.1 Legal fees and expenses	30,532,360	1,443,276	790,943		473,404	33,239,983
4.2 Medical examination fees	16,759,813		1,226,407		259,861	18,246,081
4.3 Inspection report fees	(104,367)		(7,637)		(1,618)	(113,622)
4.4 Fees of public accountants and consulting actuaries	5,673,791		415,182		87,972	6,176,945
4.5 Expense of investigation and settlement of policy claims	3,378,847	2,621,738			52,389	6,052,974
5.1 Traveling expenses	31,281,441		2,289,033		485,019	34,055,493
5.2 Advertising	27,141,694		1,986,105		420,832	29,548,631
5.3 Postage, express, telegraph and telephone	39,070,642		2,859,011		605,790	42,535,443
5.4 Printing and stationery	26,352,974		1,928,390		408,603	28,689,967
5.5 Cost or depreciation of furniture and equipment	31,905,588		2,334,705		494,696	34,734,989
5.6 Rental of equipment	49,249,662		3,603,866		763,616	53,617,144
5.7 Cost or depreciation of EDP equipment and software	39,454,632		667,327		141,399	40,263,358
6.1 Books and periodicals	4,751,145		347,667		73,667	5,172,479
6.2 Bureau and association fees	5,961,540		436,238		92,434	6,490,212
6.3 Insurance, except on real estate	9,356,037		684,632		145,065	10,185,734
6.4 Miscellaneous losses	17,329,174		1,268,070		268,689	18,865,933
6.5 Collection and bank service charges	6,937,403		507,648		107,564	7,552,615
6.6 Sundry general expenses	2,515,850		184,098		39,008	2,738,956
6.7 Group service and administration fees	227,451,764		14,269,393		3,526,640	245,247,797
6.8 Reimbursements by uninsured plans						
7.1 Agency expense allowance	319,292,410		23,364,362		4,950,629	347,607,401
7.2 Agents' balances charged off (less \$ recovered)						
7.3 Agency conferences other than local meetings	26,431,635		1,934,146		409,823	28,775,604
9.1 Real estate expenses					37,587,129	37,587,129
9.2 Investment expenses not included elsewhere					287,247,467	287,247,467
9.3 Aggregate write-ins for expenses	(258,866,798)		1,318,777		(13,151,582)	(270,699,603)
10. General expenses incurred	2,072,939,335	7,179,133	162,550,795		347,367,324	(a) 2,590,036,587
11. General expenses unpaid December 31, prior year	863,393,004	3,375,335	75,566,564		16,492,256	958,827,158
12. General expenses unpaid December 31, current year	1,029,422,185	3,181,757	72,146,662		15,961,192	1,120,711,796
13. Amounts receivable relating to uninsured plans, prior year						
14. Amounts receivable relating to uninsured plans, current year						
15. General expenses paid during year (Lines 10+11-12-13+14)	1,906,910,154	7,372,711	165,970,697		347,898,388	2,428,151,949
<b>DETAILS OF WRITE-INS</b>						
09.301. Management services income	(276,888,919)				(13,431,015)	(290,319,934)
09.302. Miscellaneous	18,022,121		1,318,777		279,433	19,620,331
09.303. _____						
09.398. Summary of remaining write-ins for Line 9.3 from overflow page 09.399.	(258,866,798)		1,318,777		(13,151,582)	(270,699,603)

(a) Includes management fees of \$ 270,283,629 to affiliates and \$ \_\_\_\_\_ to non-affiliates.

**EXHIBIT 3 - TAXES, LICENSES AND FEES (EXCLUDING FEDERAL INCOME TAXES)**

	Insurance			4 Investment	5 Total
	1 Life	2 Accident and Health	3 All Other Lines of Business		
1. Real estate taxes				26,861,150	26,861,150
2. State insurance department licenses and fees	3,002,175	309,028			3,311,203
3. State taxes on premiums	105,252,166	11,091,689			116,343,855
4. Other state taxes, including \$ for employee benefits	29,381,158	2,358,591			31,739,749
5. U.S. Social Security taxes	76,145,174	6,453,519		1,052,779	83,651,472
6. All other taxes	3,064,896	315,484			3,380,380
7. Taxes, licenses and fees incurred	216,845,569	20,528,311		27,913,929	265,287,809
8. Taxes, licenses and fees unpaid December 31, prior year	30,281,261	2,778,318		4,793,673	37,853,252
9. Taxes, licenses and fees unpaid December 31, current year	49,403,699	4,676,944		6,359,601	60,440,244
10. Taxes, licenses and fees paid during year (Lines 7 + 8 - 9)	197,723,131	18,629,685		26,348,001	242,700,817

**EXHIBIT 4 - DIVIDENDS OR REFUNDS**

	1 Life	2 Accident and Health
	1. Applied to pay renewal premiums	133,986,958
2. Applied to shorten the endowment or premium-paying period		
3. Applied to provide paid-up additions	1,368,148,405	
4. Applied to provide paid-up annuities	3,172,845	
5. Total Lines 1 through 4	1,505,308,208	354,080
6. Paid in cash	104,214,095	24,996,069
7. Left on deposit	33,880,305	
8. Aggregate write-ins for dividend or refund options	29,187,005	
9. Total Lines 5 through 8	1,672,589,613	25,350,149
10. Amount due and unpaid	9,976,986	45,594
11. Provision for dividends or refunds payable in the following calendar year	1,557,420,070	22,595,477
12. Terminal dividends	19,156,217	
13. Provision for deferred dividend contracts		
14. Amount provisionally held for deferred dividend contracts not included in Line 13		
15. Total Lines 10 through 14	1,586,553,273	22,641,071
16. Total from prior year	1,718,088,243	23,415,306
17. Total dividends or refunds (Lines 9 + 15 - 16)	1,541,054,643	24,575,914
<b>DETAILS OF WRITE-INS</b>		
0801. Applied to reduce policy indebtedness	29,187,005	
0802. _____		
0803. _____		
0898. Summary of remaining write-ins for Line 8 from overflow page		
0899. Totals (Lines 0801 thru 0803 plus 0898) (Line 8 above)	29,187,005	

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS**

1	2	3	4	5	6
Valuation Standard	Total	Industrial	Ordinary	Credit (Group and Individual)	Group
0100001. AE 3.00% NLP CRF	45,646,015		45,646,015		
0100002. AE 4.00% NLP CRF	1,433,404		1,433,404		
0100003. AM 2.50%	27,901				27,901
0100004. 41 CSO 2.50%	1,218,774				1,218,774
0100005. 41 CSO 2.50% NLP	138,218,626		138,218,626		
0100006. 41 CSO 4.00% NLP	1,112,391		1,112,391		
0100007. 41 CSO 2.50% NLP CRF	648,246,761		648,246,761		
0100008. 41 CSO 2.75% NLP CRF	240,033		240,033		
0100009. 41 CSO 4.00% NLP CRF	364,706		364,706		
0100010. 58 CET 2.50% NLP	275,296		275,296		
0100011. 58 CET 3.00% NLP	86,369		86,369		
0100012. 58 CET 3.50% NLP	142,126		142,126		
0100013. 58 CET 4.00% NLP	11,328,878		11,328,878		
0100014. 58 CET 4.50% NLP	746,908		746,908		
0100015. 58 CET 3.50%/20/2.50% NLP	190,427		190,427		
0100016. 58 CSO 2.75%	27,045				27,045
0100017. 58 CSO 3.00%	164,081				164,081
0100018. 58 CSO 3.50%	502,567				502,567
0100019. 58 CSO 4.00%	1,449,952				1,449,952
0100020. 58 CSO 3.50% CRVM	263,254,677		263,254,677		
0100021. 58 CSO 4.00% CRVM	1,608,026,489		1,608,026,489		
0100022. 58 CSO 4.50% CRVM	3,898,245,212		3,898,245,212		
0100023. 58 CSO 4.00% MOD CRVM	7,098,362		7,098,362		
0100024. 58 CSO 2.50% NLP	1,662,699,481		1,662,699,481		
0100025. 58 CSO 3.00% NLP	697,294,023		697,294,023		
0100026. 58 CSO 3.50% NLP	375,017,030		375,017,030		
0100027. 58 CSO 4.00% NLP	283,814,856		283,814,856		
0100028. 58 CSO 4.50% NLP	13,744,055		13,744,055		
0100029. 58 CSO 3.50%/20/2.50% NLP	1,133,823,175		1,133,823,175		
0100030. 58 CSO 2.75% NLP CRF	28,912,193		28,912,193		
0100031. 58 CSO 4.50% MOD CRVM	1,283,448,639		1,283,448,639		
0100032. 58 CSO 6.00% CRVM	9,981,319		9,981,319		
0100033. 70 INTO CO GRP DIS 3.50%	8,211,325				8,211,325
0100034. 80 CET 4.00% NLP	1,047,075		1,047,075		
0100035. 80 CET 4.50% NLP	2,174,576		2,174,576		
0100036. 80 CET 5.00% NLP	876,718		876,718		
0100037. 80 CET 5.50% NLP	2,156,237		2,156,237		
0100038. 80 CET 6.00% NLP	56,345		56,345		
0100039. 80 CSO 3.00%	4,660,688,649		9,382,053		4,651,306,596
0100040. 80 CSO 4.00%	6,086,340,563				6,086,340,563
0100041. 80 CSO 4.50%	3,829,659				3,829,659
0100042. 80 CSO 5.50%	51,291				51,291
0100043. 80 CSO 6.00%	158,129				158,129
0100044. 80 CSO 4.00% CALIFORNIA	1,073,219,157				1,073,219,157
0100045. 80 CSO 4.50% CALIFORNIA	144,360,600				144,360,600
0100046. 80 CSO 3.50% CRVM	5,527		5,527		
0100047. 80 CSO 4.00% CRVM	3,544,170,434		3,544,170,434		
0100048. 80 CSO 4.50% CRVM	11,257,705,833		11,257,705,833		
0100049. 80 CSO 5.00% CRVM	5,688,658,006		5,688,658,006		
0100050. 80 CSO 5.50% CRVM	7,681,509,423		7,681,509,423		
0100051. 80 CSO 6.00% CRVM	675,560,853		675,560,853		
0100052. 80 CSO 4.25% CRVM CRF	60,697		60,697		
0100053. 80 CSO 4.50% CRVM CRF	19,763,488		19,763,488		
0100054. 80 CSO 5.00% CRVM CRF	501,221,394		501,221,394		
0100055. 80 CSO 5.50% CRVM CRF	36,329		36,329		
0100056. 80 CSO 5.50% MOD CRF	149,930,734		149,930,734		
0100057. 80 CSO 4.00% NLP	327,653		327,653		
0100058. 80 CSO 4.50% NLP	162,700,056		162,700,056		
0100059. 80 CSO 5.00% NLP	6,960,779		6,960,779		
0100060. 80 CSO 5.50% NLP	748,831		748,831		
0100061. 80 CSO 6.00% NLP	19,274		19,274		
0100062. 80 CSO 4.50% NLP CRF	78,643,536		78,643,536		
0100063. 80 CSO 5.00% NLP CRF	1,115,721		1,115,721		
0100064. 80 CSO 5.50% NLP CRF	2,766,759		2,766,759		
0100065. T CSO 58 4.50%	38,756				38,756
0100066. T CSO 58 6.00%	2,022,474				2,022,474
0100067. 2001 CSO 3.50%	4,081,427,242				4,081,427,242
0100068. 2001 CSO 4.00%	2,445,151,560				2,445,151,560
0100069. 2001 CSO 3.50% CRVM	3,873,174,016		3,873,174,016		
0100070. 2001 CSO 4.00% CRVM	8,648,057,539		8,648,057,539		
0100071. 2001 CSO 4.50% CRVM	138,334,004		138,334,004		
0100072. 2001 CSO 3.50% NLP	291,321,180		291,321,180		
0100073. 2001 CSO 4.00% NLP	199,403,127		199,403,127		
0199997. Totals (Gross)	73,550,787,320		55,051,279,648		18,499,507,672
0199998. Reinsurance ceded	2,916,939,692		2,867,921,181		49,018,511
0199999. Life Insurance: Totals (Net)	70,633,847,629		52,183,358,467		18,450,489,161
0200001. 37 SA 2.50%	197,701	XXX	197,701	XXX	
0200002. 37 SA 3.00%	530	XXX	530	XXX	
0200003. 37 SA 3.50%	47,218	XXX	47,218	XXX	
0200004. a-1949 2.75%	30,205	XXX	30,205	XXX	
0200005. a-1949 3.00%	90,936	XXX	90,936	XXX	
0200006. a-1949 3.50%	479,746	XXX	479,746	XXX	
0200007. 51 GAM 3.50%	6,463,191	XXX	6,463,191	XXX	
0200008. 51 GAM 2.50% DYN	4,741	XXX		XXX	4,741
0200009. 51 GAM PROJ TO 54 2.63%	11,239	XXX		XXX	11,239
0200010. 51 GAM PROJ TO 54 2.75%	4,243	XXX		XXX	4,243
0200011. 51 GAM PROJ TO 54 3.00%	3,067	XXX		XXX	3,067
0200012. 51 GAM PROJ TO 70 3.25%	1,952,698	XXX		XXX	1,952,698
0200013. 51 GAM PROJ TO 70 3.50%	314,552	XXX		XXX	314,552
0200014. 51 GAM PROJ TO 2000 3.25%	7,415	XXX		XXX	7,415
0200015. 51 GAM PROJ TO 2001 3.00%	14,963	XXX		XXX	14,963
0200016. 51 IAM 4.00%	167,430	XXX		XXX	167,430

## ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS**

1	2	3	4	5	6
Valuation Standard	Total	Industrial	Ordinary	Credit (Group and Individual)	Group
0200017. 71 GAM 3.50%	16,027,158	XXX	16,027,158	XXX	
0200018. 71 GAM 4.00%	2,183,449	XXX	2,183,449	XXX	
0200019. 71 GAM 6.00%	2,144,459	XXX		XXX	2,144,459
0200020. 71 GAM 6.75%	3,719,497	XXX		XXX	3,719,497
0200021. 71 GAM 7.50%	48,395,250	XXX		XXX	48,395,250
0200022. 71 GAM 8.25%	1,300,445	XXX		XXX	1,300,445
0200023. 71 GAM 9.00%	308,437	XXX		XXX	308,437
0200024. 71 GAM 9.50%	2,016,488	XXX		XXX	2,016,488
0200025. 71 GAM 9.75%	44,223,331	XXX		XXX	44,223,331
0200026. 71 GAM 10.75%	16,317,069	XXX		XXX	16,317,069
0200027. 71 GAM 11.25%	24,753,406	XXX		XXX	24,753,406
0200028. 71 IAM 3.50%	30,261	XXX	30,261	XXX	
0200029. 71 IAM 6.00%	327,977	XXX	198,314	XXX	129,663
0200030. 71 IAM 6.50%	176,388	XXX		XXX	176,388
0200031. 71 IAM 6.75%	1,407,832	XXX		XXX	1,407,832
0200032. 71 IAM 7.50%	1,868,199	XXX	1,868,199	XXX	
0200033. 71 IAM 9.50%	242,841	XXX		XXX	242,841
0200034. 71 IAM 11.25%	2,492,981	XXX	2,492,981	XXX	
0200035. 83a 6.25%	4,036,451	XXX	4,036,451	XXX	
0200036. 83a 6.50%	2,823,260	XXX	2,823,260	XXX	
0200037. 83a 6.75%	6,449,177	XXX	6,449,177	XXX	
0200038. 83a 7.00%	1,760,775	XXX	1,760,775	XXX	
0200039. 83a 7.25%	3,559,323	XXX	3,559,323	XXX	
0200040. 83a 7.75%	2,605,542	XXX	2,605,542	XXX	
0200041. 83a 8.00%	2,823,632	XXX	2,823,632	XXX	
0200042. 83a 8.25%	7,960,343	XXX	7,960,343	XXX	
0200043. 83a 8.75%	4,180,378	XXX	4,180,378	XXX	
0200044. 83a 9.25%	899,885	XXX	899,885	XXX	
0200045. 83a 11.00%	1,180,671	XXX	1,180,671	XXX	
0200046. 83a CIF/No-FIG	499,277	XXX	499,277	XXX	
0200047. 83a IY/FIG	34,893,750	XXX	34,893,750	XXX	
0200048. 83 GAM 4.75%	129,047	XXX		XXX	129,047
0200049. 83 GAM 5.00%	254,165	XXX		XXX	254,165
0200050. 83 GAM 5.25%	1,037,247	XXX		XXX	1,037,247
0200051. 83 GAM 5.50%	781,909	XXX		XXX	781,909
0200052. 83 GAM 5.75%	4,369,422	XXX		XXX	4,369,422
0200053. 83 GAM 6.00%	16,954,219	XXX		XXX	16,954,219
0200054. 83 GAM 6.25%	29,141,448	XXX		XXX	29,141,448
0200055. 83 GAM 6.50%	25,125,953	XXX		XXX	25,125,953
0200056. 83 GAM 6.75%	27,395,294	XXX		XXX	27,395,294
0200057. 83 GAM 7.00%	36,696,428	XXX		XXX	36,696,428
0200058. 83 GAM 7.25%	32,884,045	XXX		XXX	32,884,045
0200059. 83 GAM 7.50%	63,915,104	XXX		XXX	63,915,104
0200060. 83 GAM 7.75%	29,403,528	XXX		XXX	29,403,528
0200061. 83 GAM 8.00%	77,137,085	XXX		XXX	77,137,085
0200062. 83 GAM 8.25%	32,670,286	XXX		XXX	32,670,286
0200063. 83 GAM 8.50%	10,654,826	XXX		XXX	10,654,826
0200064. 83 GAM 8.75%	58,544,752	XXX		XXX	58,544,752
0200065. 83 GAM 9.00%	33,021	XXX		XXX	33,021
0200066. 83 GAM 9.25%	29,607,554	XXX		XXX	29,607,554
0200067. 83 GAM 9.50%	69,017,797	XXX		XXX	69,017,797
0200068. 83 GAM 10.50%	28,419,857	XXX		XXX	28,419,857
0200069. 83 GAM 11.00%	45,473,305	XXX		XXX	45,473,305
0200070. 83 IAM 4.00%	2,488	XXX	2,488	XXX	
0200071. 83 IAM 4.25%	1,515,733	XXX	1,515,733	XXX	
0200072. 83 IAM 4.50%	730,643	XXX	730,643	XXX	
0200073. 83 IAM 4.75%	3,231,455	XXX	3,231,455	XXX	
0200074. 83 IAM 5.00%	13,737,585	XXX	286,616	XXX	13,450,969
0200075. 83 IAM 5.25%	442,476,882	XXX	436,159,427	XXX	6,317,455
0200076. 83 IAM 5.50%	213,392,616	XXX	213,392,616	XXX	
0200077. 83 IAM 5.75%	5,653,855	XXX		XXX	5,653,855
0200078. 83 IAM 6.00%	103,375,894	XXX	103,375,894	XXX	
0200079. 83 IAM 6.50%	127,830,866	XXX	115,881,401	XXX	11,949,465
0200080. 83 IAM 6.75%	87,596,024	XXX	82,256,884	XXX	5,339,140
0200081. 83 IAM 7.00%	21,758,590	XXX	6,509,447	XXX	15,249,143
0200082. 83 IAM 7.25%	10,101,280	XXX		XXX	10,101,280
0200083. 83 IAM 7.75%	8,965,468	XXX		XXX	8,965,468
0200084. 83 IAM 8.00%	1,976,373	XXX		XXX	1,976,373
0200085. 83 IAM 8.25%	14,247,770	XXX		XXX	14,247,770
0200086. 83 IAM 8.75%	7,188,367	XXX		XXX	7,188,367
0200087. 83 IAM 9.50%	2,479,044	XXX		XXX	2,479,044
0200088. 1994 GAR 3.50%	1,944,569	XXX		XXX	1,944,569
0200089. 1994 GAR 3.75%	20,872,365	XXX		XXX	20,872,365
0200090. 1994 GAR 4.00%	5,109,232,824	XXX		XXX	5,109,232,824
0200091. 1994 GAR 4.25%	388,534,484	XXX		XXX	388,534,484
0200092. 1994 GAR 4.50%	466,206,689	XXX		XXX	466,206,689
0200093. 1994 GAR 4.75%	12,118,542	XXX		XXX	12,118,542
0200094. 1994 GAR 5.00%	205,939,076	XXX		XXX	205,939,076
0200095. 1994 GAR 5.25%	127,859,559	XXX		XXX	127,859,559
0200096. 1994 GAR 5.50%	463,561,609	XXX		XXX	463,561,609
0200097. 1994 GAR 5.75%	9,792,527	XXX		XXX	9,792,527
0200098. 1994 GAR 6.00%	217,824,262	XXX		XXX	217,824,262
0200099. 1994 GAR 6.25%	4,326,458	XXX		XXX	4,326,458
0200100. 1994 GAR 6.50%	11,057,882	XXX		XXX	11,057,882
0200101. 1994 GAR 6.75%	14,926,559	XXX		XXX	14,926,559
0200102. 1994 MGDB Table IY / FIG	1,144,789,733	XXX	1,144,789,733	XXX	
0200103. 1994 MGDB Table IY / NO FIG	98,200,241	XXX	98,200,241	XXX	
0200104. 1995 GAR 7.00%	34,900,297	XXX		XXX	34,900,297
0200105. a-2000 3.50%	10,758,693	XXX	10,758,693	XXX	
0200106. a-2000 3.75%	266,977,223	XXX	266,977,223	XXX	
0200107. a-2000 4.00%	811,550,801	XXX	804,914,142	XXX	6,636,659
0200108. a-2000 4.25%	603,773,022	XXX	599,767,444	XXX	4,005,578

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS**

1	2	3	4	5	6
Valuation Standard	Total	Industrial	Ordinary	Credit (Group and Individual)	Group
0200109. a-2000 4.50%	873,840,944	XXX	870,524,338	XXX	3,316,606
0200110. a-2000 5.00%	283,638,682	XXX	279,523,603	XXX	4,115,079
0200111. a-2000 5.25%	352,886,711	XXX	328,525,258	XXX	24,361,453
0200112. a-2000 5.50%	150,372,952	XXX	124,163,507	XXX	26,209,445
0200113. a-2000 6.00%	245,675,359	XXX	215,103,303	XXX	30,572,056
0200114. a-2000 6.25%	6,146,278	XXX	5,251,240	XXX	895,038
0200115. a-2000 6.50%	55,575,579	XXX	33,650,094	XXX	21,925,485
0200116. a-2000 6.75%	24,112,263	XXX	9,445,677	XXX	14,666,586
0200117. a-2000 7.00%	8,666,661	XXX	8,193,330	XXX	473,331
0200118. a-2012 3.50%	2,461,430	XXX	2,461,430	XXX	
0200119. a-2012 3.75%	21,276,991	XXX	21,276,991	XXX	
0200120. a-2012 4.00%	1,945,183,526	XXX	1,945,183,526	XXX	
0200121. a-2000 CIF / NO FIG	340,860	XXX	340,860	XXX	
0200122. a-2012 CIF / NO FIG	171,945	XXX	171,945	XXX	
0200123. a-2000 IY / FIG	2,820,651,041	XXX	2,820,651,041	XXX	
0200124. a-2012 IY / FIG	227,060,013	XXX	227,060,013	XXX	
0200125. a-2000 IY / No FIG	1,423,257,744	XXX	1,423,257,744	XXX	
0200126. a-2012 IY / No FIG	295,492,983	XXX	295,492,983	XXX	
0200127. RA 2.50%	226,003	XXX	226,003	XXX	
0200128. RA 2.75%	15,684,026	XXX	15,684,026	XXX	
0200129. RA 3.00%	48,756	XXX	48,756	XXX	
0200130. RA 3.50%	32,455,339	XXX	32,455,339	XXX	
0200131. RA 4.00%	76,862,710	XXX	76,862,710	XXX	
0200132. Rx FUNDS AT VARIOUS INT RATES '47-72 Var	1,825,250	XXX		XXX	1,825,250
0200133. SAT 2.25%	1,180	XXX		XXX	1,180
0200134. SAT 2.50%	570,846	XXX		XXX	570,846
0200135. Other - Fund Balance Reserves	15,620,815,107	XXX		XXX	15,620,815,107
0200136. T 51UNP 3.50%	924,449	XXX		XXX	924,449
0299997. Totals (Gross)	36,448,678,077	XXX	12,728,086,152	XXX	23,720,591,925
0299998. Reinsurance ceded		XXX		XXX	
0299999. Annuities: Totals (Net)	36,448,678,077	XXX	12,728,086,152	XXX	23,720,591,925
0300001. 37 SA 2.50%	495				495
0300002. 37 SA 3.50%	186,575		186,575		
0300003. 51GAM Proj to 54 3.00%	304				304
0300004. 71 IAM 3.50%	67,660		67,660		
0300005. 71 IAM 6.00%	601,141		601,141		
0300006. 71 IAM 7.50%	1,767,309		1,767,309		
0300007. 71 IAM 11.25%	363,659		363,659		
0300008. 83a 6.25%	899,546		899,546		
0300009. 83a 6.50%	928,305		928,305		
0300010. 83a 6.75%	1,207,848		1,207,848		
0300011. 83a 7.00%	734,858		734,858		
0300012. 83a 7.25%	541,772		541,772		
0300013. 83a 7.75%	864,453		864,453		
0300014. 83a 8.00%	332,777		332,777		
0300015. 83a 8.25%	1,631,136		1,631,136		
0300016. 83a 8.75%	1,044,502		1,044,502		
0300017. 83a 9.25%	352,686		352,686		
0300018. 83a 11.00%	377,840		377,840		
0300019. a-1949 3.50%	262,791		262,791		
0300020. a-2000 4.00%	14,182,373		14,182,373		
0300021. a-2000 4.25%	11,873,683		11,873,683		
0300022. a-2000 4.50%	12,535,871		12,535,871		
0300023. a-2000 5.00%	9,777,272		9,777,272		
0300024. a-2000 5.25%	6,892,044		6,892,044		
0300025. a-2000 5.50%	5,455,494		5,455,494		
0300026. a-2000 6.00%	2,381,798		2,381,798		
0300027. a-2000 6.25%	836,402		836,402		
0300028. a-2000 6.50%	1,303,493		1,303,493		
0300029. a-2000 6.75%	790,585		790,585		
0300030. a-2000 7.00%	884,645		884,645		
0300031. a-2012 4.00%	32,972,168		32,972,168		
0300032. 51 GA 3.00%	361,384				361,384
0399997. Totals (Gross)	112,412,869		112,050,686		362,183
0399998. Reinsurance ceded	361,384				361,384
0399999. SCWLC: Totals (Net)	112,051,485		112,050,686		799
0400001. 59 ADB 3.00%	593,047		536,955		56,092
0400002. 59 ADB + 58 CSO 2.50%	95,748		95,748		
0400003. 59 ADB + 58 CSO 3.50%	516,018		516,018		
0400004. 59 ADB + 58 CSO 4.50%	478,894		478,894		
0400005. 59 ADB + 58 CSO 5.50%	94		94		
0400006. 59 ADB + 58 CSO 6.00%	25		25		
0400007. 59 ADB + 80 CSO 4.00%	2		2		
0400008. 59 ADB + 80 CSO 4.50%	1,460,976		1,460,976		
0400009. 59 ADB + 80 CSO 5.00%	6		6		
0400010. 59 ADB + 80 CSO 5.50%	79		79		
0400011. 59 ADB + 80 CSO 6.00%	88		88		
0400012. 110% INTERCO DI + AE 3.00%	136		136		
0400013. 110% INTERCO DI + 41 CSO 2.50%	7,954		7,954		
0400014. INTERCO DI 2.50%	12		12		
0400015. 59 ADB + 2001 CSO 4.50%	17,014		17,014		
0499997. Totals (Gross)	3,170,093		3,114,001		56,092
0499998. Reinsurance ceded					
0499999. Accidental Death Benefits: Totals (Net)	3,170,093		3,114,001		56,092
0500001. 35-39 INTERCO + 46-49 2.50%	52		52		
0500002. 35-39 INTERCO + 58 CSO 2.50%	94,190		94,190		
0500003. 35-39 INTERCO + 58 CSO 3.50%	3,753,662		3,753,662		
0500004. 35-39 INTERCO + 58 CSO 4.00%	1,289		1,289		
0500005. 35-39 INTERCO + 58 CSO 4.50%	230		230		
0500006. 35-39 INTERCO + 80 CSO 4.50%	41,280,510		41,280,510		
0500007. 120% 52 INTERCO DISA 2.50%	19,594		19,594		
0500008. 120% 52 INTERCO DISA 3.00%	51,343		51,343		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS**

1	2	3	4	5	6
Valuation Standard	Total	Industrial	Ordinary	Credit (Group and Individual)	Group
0500009. 120% 52 INTERCO DISA 3.50%	4,840,675		4,840,675		
0500010. 120% 52 INTERCO DISA 4.00%	176,178		176,178		
0500011. 120% 52 INTERCO DISA 4.50%	54,728		54,728		
0500012. 120% 52 INTERCO DISA 5.00%	160		160		
0500013. 120% 52 INTERCO DISA 5.50%	3,167		3,167		
0500014. 120% 52 INTERCO DISA 6.00%	1,673		1,673		
0500015. 1958 CSO Benefit 5 2.50%	8,309				8,309
0500016. 1985 NHHS 80 CSO 4.50%	11,063,224		11,063,224		
0500017. 1985 CIDA 4.00%	168,687				168,687
0500018. 35-39 INTERCO + 2001 CSO 3.50%	22,019		22,019		
0500019. 35-39 INTERCO + 2001 CSO 4.00%	40,490,874		40,490,874		
0500020. 35-39 INTERCO DISA + 58 CSO 4.50%	23,029		23,029		
0500021. MOD 52 DISAB TABLE BEN 5 4.00%	1,656				1,656
0599997. Totals (Gross)	102,055,249		101,876,597		178,652
0599998. Reinsurance ceded					
0599999. Disability-Active Lives: Totals (Net)	102,055,249		101,876,597		178,652
0600001. 35-39 INTERCO DISA + 58 CSO 2.50%	113,979		113,979		
0600002. MOD 52 DISAB TABLE BEN 5 4.00%	536,556				536,556
0600003. 1985 CIDA 4.00%	1,298,637				1,298,637
0600004. 1985 NHHS 80 CSO 4.00%	2,130,131		2,130,131		
0600005. 70 INTERCO DISA	226,999				226,999
0600006. 52 DISAB TABLE BEN 5 3.50%	2,344,470		2,344,470		
0600007. 52 DISAB TABLE BEN 5 4.00%	103,754,449		103,754,449		
0600008. 52 DISAB TABLE BEN 5 4.50%	103,750,198		103,750,198		
0600009. 52 DISAB TABLE BEN 5 5.00%	11,469,856		11,469,856		
0600010. 52 DISAB TABLE BEN 5 5.50%	24,669,561		24,669,561		
0600011. 52 DISAB TABLE BEN 5 6.00%	815,908		815,908		
0699997. Totals (Gross)	251,110,744		249,048,552		2,062,192
0699998. Reinsurance ceded	226,999				226,999
0699999. Disability-Disabled Lives: Totals (Net)	250,883,745		249,048,552		1,835,193
0700001. AG43 Reserve	325,691,280		325,691,280		
0700002. Apportionable	9,336,334		9,336,334		
0700003. Asset Adequacy Reserve	325,000,000		325,000,000		
0700004. Cash Flow Testing	231,000,000		231,000,000		
0700005. GMDB	267,667				267,667
0700006. Minimum Death Benefit	478,621,224		478,621,224		
0700007. Policy Loans	343,617		343,617		
0700008. Premium Deficiency	458,660,065		458,660,065		
0700009. Term Conversions	28,321,999		28,321,999		
0700010. Term Cost Reserve	46		46		
0700011. VACARVM - direct	329,434				329,434
0700012. VA GMDB	39		39		
0799997. Totals (Gross)	1,857,571,705		1,856,974,604		597,101
0799998. Reinsurance ceded	17,172,799		17,172,799		
0799999. Miscellaneous Reserves: Totals (Net)	1,840,398,906		1,839,801,805		597,101
9999999. Totals (Net) - Page 3, Line 1	109,391,085,184		67,217,336,261		42,173,748,923

**EXHIBIT 5 - INTERROGATORIES**

- 1.1 Has the reporting entity ever issued both participating and non-participating contracts?..... Yes [ X ] No [ ]  
 1.2 If not, state which kind is issued. ....
- 2.1 Does the reporting entity at present issue both participating and non-participating contracts?..... Yes [ X ] No [ ]  
 2.2 If not, state which kind is issued. ....
3. Does the reporting entity at present issue or have in force contracts that contain non-guaranteed elements?..... Yes [ X ] No [ ]  
 If so, attach a statement that contains the determination procedures, answers to the interrogatories and an actuarial opinion as described in the instructions.
4. Has the reporting entity any assessment or stipulated premium contracts in force? ..... Yes [ ] No [ X ]  
 If so, state:  
 4.1 Amount of insurance? ..... \$ .....  
 4.2 Amount of reserve? ..... \$ .....  
 4.3 Basis of reserve: .....  
 4.4 Basis of regular assessments: .....  
 4.5 Basis of special assessments: .....  
 4.6 Assessments collected during the year ..... \$ .....
5. If the contract loan interest rate guaranteed in any one or more of its currently issued contracts is less than 5%, not in advance, state the contract loan rate guarantees on any such contracts. ....
6. Does the reporting entity hold reserves for any annuity contracts that are less than the reserves that would be held on a standard basis? ..... Yes [ ] No [ X ]  
 6.1 If so, state the amount of reserve on such contracts on the basis actually held: ..... \$ .....  
 6.2 That would have been held (on an exact or approximate basis) using the actual ages of the annuitants; the interest rate(s) used in 6.1; and the same mortality basis used by the reporting entity for the valuation of comparable annuity benefits issued to standard lives. If the reporting entity has no comparable annuity benefits for standard lives to be valued, the mortality basis shall be the table most recently approved by the state of domicile for valuing individual annuity benefits: ..... \$ .....  
 Attach statement of methods employed in their valuation.
7. Does the reporting entity have any Synthetic GIC contracts or agreements in effect as of December 31 of the current year? ..... Yes [ X ] No [ ]  
 7.1 If yes, state the total dollar amount of assets covered by these contracts or agreements ..... \$ ..... 1,083,796,170  
 7.2 Specify the basis (fair value, amortized cost, etc.) for determining the amount:  
 Fair Value .....  
 7.3 State the amount of reserves established for this business: ..... \$ ..... 0  
 7.4 Identify where the reserves are reported in the blank: .....
8. Does the reporting entity have any Contingent Deferred Annuity contracts or agreements in effect as of December 31 of the current year? ..... Yes [ ] No [ X ]  
 8.1 If yes, state the total dollar amount of account value covered by these contracts or agreements: ..... \$ .....  
 8.2 State the amount of reserves established for this business: ..... \$ .....  
 8.3 Identify where the reserves are reported in the blank: .....
9. Does the reporting entity have any Guaranteed Lifetime Income Benefit contracts, agreements or riders in effect as of December 31 of the current year? ..... Yes [ ] No [ X ]  
 9.1 If yes, state the total dollar amount of any account value associated with these contracts, agreements or riders: ..... \$ .....  
 9.2 State the amount of reserves established for this business: ..... \$ .....  
 9.3 Identify where the reserves are reported in the blank: .....

**EXHIBIT 5A - CHANGES IN BASES OF VALUATION DURING THE YEAR**

1 Description of Valuation Class	Valuation Basis		4 Increase in Actuarial Reserve Due to Change
	2 Changed From	3 Changed To	
Pension Buy Out	Various tables (old basis)	83 GAM (new basis)	700,000
0199999. Subtotal (Page 7, Line 6)	XXX	XXX	700,000
9999999 - Total (Column 4, only)			700,000

**EXHIBIT 6 - AGGREGATE RESERVES FOR ACCIDENT AND HEALTH CONTRACTS**

	1 Total	2 Group Accident and Health	3 Credit Accident and Health (Group and Individual)	4 Collectively Renewable	Other Individual Contracts				
					5 Non-Cancelable	6 Guaranteed Renewable	7 Non-Renewable for Stated Reasons Only	8 Other Accident Only	9 All Other
<b>ACTIVE LIFE RESERVE</b>									
1. Unearned premium reserves .....	79,859,018				43,087,393	36,289,032	482,593		
2. Additional contract reserves (a) .....	2,021,126,086				526,195,806	1,494,904,101	26,179		
3. Additional actuarial reserves-Asset/Liability analysis .....	189,200,000					189,200,000			
4. Reserve for future contingent benefits .....									
5. Reserve for rate credits .....									
6. Aggregate write-ins for reserves .....									
7. Totals (Gross) .....	2,290,185,104				569,283,199	1,720,393,133	508,772		
8. Reinsurance ceded .....	1,391,242,827					1,391,242,827			
9. Totals (Net) .....	898,942,277				569,283,199	329,150,306	508,772		
<b>CLAIM RESERVE</b>									
10. Present value of amounts not yet due on claims .....	2,057,533,142	1,272,805			1,915,240,427	138,886,678	2,133,232		
11. Additional actuarial reserves-Asset/Liability analysis .....									
12. Reserve for future contingent benefits .....									
13. Aggregate write-ins for reserves .....									
14. Totals (Gross) .....	2,057,533,142	1,272,805			1,915,240,427	138,886,678	2,133,232		
15. Reinsurance ceded .....	161,612,963	1,272,805			34,264,966	126,075,192			
16. Totals (Net) .....	1,895,920,179				1,880,975,461	12,811,486	2,133,232		
17. TOTAL (Net) .....	2,794,862,456				2,450,258,660	341,961,792	2,642,004		
18. TABULAR FUND INTEREST .....	110,437,574				98,967,487	11,359,556	110,531		
<b>DETAILS OF WRITE-INS</b>									
0601. ....									
0602. ....									
0603. ....									
0698. Summary of remaining write-ins for Line 6 from overflow page .....									
0699. TOTALS (Lines 0601 thru 0603 plus 0698) (Line 6 above) .....									
1301. ....									
1302. ....									
1303. ....									
1398. Summary of remaining write-ins for Line 13 from overflow page .....									
1399. TOTALS (Lines 1301 thru 1303 plus 1398) (Line 13 above) .....									

(a) Attach statement as to valuation standard used in calculating this reserve, specifying reserve bases, interest rates and methods.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT 7 - DEPOSIT TYPE CONTRACTS**

	1	2	3	4	5	6
	Total	Guaranteed Interest Contracts	Annuities Certain	Supplemental Contracts	Dividend Accumulations or Refunds	Premium and Other Deposit Funds
1. Balance at the beginning of the year before reinsurance .....	7,268,698,838	5,816,209,259	204,031,122	547,105,348	538,355,379	162,997,730
2. Deposits received during the year .....	4,140,015,208	1,792,775,913		215,636,262	33,883,439	2,097,719,594
3. Investment earnings credited to the account .....	169,395,752	115,191,119	10,440,763	15,818,403	19,337,090	8,608,377
4. Other net change in reserves .....	(7,300,601)	(7,262,087)			(24)	(38,490)
5. Fees and other charges assessed .....	149,895					149,895
6. Surrender charges .....						
7. Net surrender or withdrawal payments .....	1,925,426,463	1,326,975,487	21,445,897	163,033,859	59,987,759	353,983,461
8. Other net transfers to or (from) Separate Accounts .....	1,183,023,274	(252,215,000)				1,435,238,274
9. Balance at the end of current year before reinsurance (Lines 1+2+3+4-5-6-7-8) .....	8,462,209,565	6,642,153,717	193,025,988	615,526,154	531,588,125	479,915,581
10. Reinsurance balance at the beginning of the year .....	3,222,419,137					3,222,419,137
11. Net change in reinsurance assumed .....	(110,480,836)					(110,480,836)
12. Net change in reinsurance ceded .....						
13. Reinsurance balance at the end of the year (Lines 10+11-12) .....	3,111,938,301					3,111,938,301
14. Net balance at the end of current year after reinsurance (Lines 9 + 13)	11,574,147,866	6,642,153,717	193,025,988	615,526,154	531,588,125	3,591,853,882

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**EXHIBIT 8 - CLAIMS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS**

**PART 1 - Liability End of Current Year**

	1 Total	2 Industrial Life	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health		
			3 Life Insurance	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other
1. Due and unpaid:											
1.1 Direct .....	13,814,446			465,665				936,938			12,411,843
1.2 Reinsurance assumed .....											
1.3 Reinsurance ceded .....	3,184,734										3,184,734
1.4 Net .....	10,629,712			465,665				936,938			9,227,109
2. In course of settlement:											
2.1 Resisted .....											
2.11 Direct .....	1,346,840		1,346,840								
2.12 Reinsurance assumed .....											
2.13 Reinsurance ceded .....	266,958		266,958								
2.14 Net .....	1,079,882		(b) 1,079,882	(b)	(b)	(b)	(b)				
2.2 Other .....											
2.21 Direct .....	358,680,464		310,902,731	141,741			38,827,399				8,808,593
2.22 Reinsurance assumed .....	43,499,003		38,107,924				5,391,079				
2.23 Reinsurance ceded .....	85,734,190		77,917,170				7,812,876				4,144
2.24 Net .....	316,445,277		(b) 271,093,485	(b) 141,741	(b)	(b)	(b) 36,405,602	(b)	(b)	(b)	(b) 8,804,449
3. Incurred but unreported:											
3.1 Direct .....	52,452,616		35,352,334				11,726,700		50,000		5,323,582
3.2 Reinsurance assumed .....	1,962,040		1,962,040								
3.3 Reinsurance ceded .....	19,566,023		12,526,100				6,169,600		50,000		820,323
3.4 Net .....	34,848,633		(b) 24,788,274	(b)	(b)	(b)	(b) 5,557,100	(b)	(b)	(b)	(b) 4,503,259
4. TOTALS .....											
4.1 Direct .....	426,294,366		347,601,905	607,406			50,554,099	936,938	50,000		26,544,018
4.2 Reinsurance assumed .....	45,461,043		40,069,964				5,391,079				
4.3 Reinsurance ceded .....	108,751,905		90,710,228				13,982,476		50,000		4,009,201
4.4 Net .....	363,003,504	(a)	(a) 296,961,641	607,406			(a) 41,962,702	936,938			22,534,817

(a) Including matured endowments (but not guaranteed annual pure endowments) unpaid amounting to \$ ..... in Column 2, \$ .....744,111 in Column 3 and \$ ..... in Column 7.  
(b) Include only portion of disability and accident and health claim liabilities applicable to assumed "accrued" benefits. Reserves (including reinsurance assumed and net of reinsurance ceded) for unaccrued benefits for Ordinary Life Insurance \$ .....6,408,972  
Individual Annuities \$ ..... , Credit Life (Group and Individual) \$ ..... , and Group Life \$ ..... , are included in Page 3, Line 1, (See Exhibit 5, Section on Disability Disabled Lives); and for Group Accident and Health \$ .....  
Credit (Group and Individual) Accident and Health \$ ..... , and Other Accident and Health \$ ..... are included in Page 3, Line 2 (See Exhibit 6, Claim Reserve).

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**EXHIBIT 8 - CLAIMS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS**

**PART 2 - Incurred During the Year**

	1 Total	2 Industrial Life (a)	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health		
			3 Life Insurance (b)	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance (c)	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other
1. Settlements During the Year:											
1.1 Direct .....	4,320,194,650		2,039,852,202	670,868,257	11,491,950		239,494,167	983,198,674	401,381		374,888,019
1.2 Reinsurance assumed .....	148,479,250		75,879,484	237,908			10,358,730	62,003,128			
1.3 Reinsurance ceded .....	610,650,864		529,441,299				45,701,204		401,381		35,106,980
1.4 Net .....	(d) 3,858,023,036		1,586,290,387	671,106,165	11,491,950		204,151,693	1,045,201,802			339,781,039
2. Liability December 31, current year from Part 1:											
2.1 Direct .....	426,294,366		347,601,905	607,406			50,554,099	936,938	50,000		26,544,018
2.2 Reinsurance assumed .....	45,461,043		40,069,964				5,391,079				
2.3 Reinsurance ceded .....	108,751,905		90,710,228				13,982,476		50,000		4,009,201
2.4 Net .....	363,003,504		296,961,641	607,406			41,962,702	936,938			22,534,817
3. Amounts recoverable from reinsurers December 31, current year .....	41,664,063		37,589,495				4,029,084				45,484
4. Liability December 31, prior year:											
4.1 Direct .....	557,327,315		424,791,761	374,443			77,354,797	26,963,933	50,000		27,792,381
4.2 Reinsurance assumed .....	37,176,967		29,386,876				7,790,091				
4.3 Reinsurance ceded .....	149,962,523		134,257,917				12,130,747		50,000		3,523,859
4.4 Net .....	444,541,759		319,920,720	374,443			73,014,141	26,963,933			24,268,522
5. Amounts recoverable from reinsurers December 31, prior year .....	45,318,929		42,220,201				3,064,949				33,779
6. Incurred Benefits											
6.1 Direct .....	4,189,161,701		1,962,662,346	671,101,220	11,491,950		212,693,469	957,171,679	401,381		373,639,656
6.2 Reinsurance assumed .....	156,763,326		86,562,572	237,908			7,959,718	62,003,128			
6.3 Reinsurance ceded .....	565,785,380		481,262,904				48,517,068		401,381		35,604,027
6.4 Net .....	3,780,139,647		1,567,962,014	671,339,128	11,491,950		172,136,119	1,019,174,807			338,035,629

(a) Including matured endowments (but not guaranteed annual pure endowments) amounting to \$ ..... in Line 1.1, \$ ..... in Line 1.4.  
 \$ ..... in Line 6.1, and \$ ..... in Line 6.4.

(b) Including matured endowments (but not guaranteed annual pure endowments) amounting to \$ ..... 21,985,695 in Line 1.1, \$ ..... 21,985,695 in Line 1.4.  
 \$ ..... 22,090,452 in Line 6.1, and \$ ..... 22,090,452 in Line 6.4.

(c) Including matured endowments (but not guaranteed annual pure endowments) amounting to \$ ..... 8,072 in Line 1.1, \$ ..... 8,072 in Line 1.4.  
 \$ ..... 8,072 in Line 6.1, and \$ ..... 8,072 in Line 6.4.

(d) Includes \$ ..... 38,515,881 premiums waived under total and permanent disability benefits.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT OF NON-ADMITTED ASSETS**

	1	2	3
	Current Year Total Nonadmitted Assets	Prior Year Total Nonadmitted Assets	Change in Total Nonadmitted Assets (Col. 2 - Col. 1)
1. Bonds (Schedule D) .....			
2. Stocks (Schedule D):			
2.1 Preferred stocks .....			
2.2 Common stocks .....			
3. Mortgage loans on real estate (Schedule B):			
3.1 First liens .....			
3.2 Other than first liens.....			
4. Real estate (Schedule A):			
4.1 Properties occupied by the company .....			
4.2 Properties held for the production of income.....			
4.3 Properties held for sale .....			
5. Cash (Schedule E - Part 1), cash equivalents (Schedule E - Part 2) and short-term investments (Schedule DA) .....			
6. Contract loans .....	520,912	382,927	(137,985)
7. Derivatives (Schedule DB) .....			
8. Other invested assets (Schedule BA) .....	46,223,980	62,151,320	15,927,340
9. Receivables for securities .....			
10. Securities lending reinvested collateral assets (Schedule DL) .....			
11. Aggregate write-ins for invested assets .....			
12. Subtotals, cash and invested assets (Lines 1 to 11) .....	46,744,892	62,534,247	15,789,355
13. Title plants (for Title insurers only) .....			
14. Investment income due and accrued .....	5,059,678	14	(5,059,664)
15. Premiums and considerations:			
15.1 Uncollected premiums and agents' balances in the course of collection .....	3,926,072	4,377,934	451,862
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due .....			
15.3 Accrued retrospective premiums and contracts subject to redetermination .....			
16. Reinsurance:			
16.1 Amounts recoverable from reinsurers .....			
16.2 Funds held by or deposited with reinsured companies .....			
16.3 Other amounts receivable under reinsurance contracts .....			
17. Amounts receivable relating to uninsured plans .....			
18.1 Current federal and foreign income tax recoverable and interest thereon .....			
18.2 Net deferred tax asset .....	44,391,726		(44,391,726)
19. Guaranty funds receivable or on deposit .....			
20. Electronic data processing equipment and software .....	359,047,909	293,801,116	(65,246,793)
21. Furniture and equipment, including health care delivery assets .....	32,900,406	45,722,713	12,822,307
22. Net adjustment in assets and liabilities due to foreign exchange rates .....			
23. Receivables from parent, subsidiaries and affiliates .....	12,459,835		(12,459,835)
24. Health care and other amounts receivable .....			
25. Aggregate write-ins for other than invested assets .....	1,126,211,030	898,111,594	(228,099,436)
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25) .....	1,630,741,548	1,304,547,618	(326,193,930)
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts .....			
28. Total (Lines 26 and 27) .....	1,630,741,548	1,304,547,618	(326,193,930)
<b>DETAILS OF WRITE-INS</b>			
1101. ....			
1102. ....			
1103. ....			
1198. Summary of remaining write-ins for Line 11 from overflow page .....			
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above)			
2501. Pension plan asset .....	624,498,480	659,277,011	34,778,531
2502. Cash advances to agents .....	243,580,128	140,909,668	(102,670,460)
2503. Intangible assets .....	130,849,403	1,905,556	(128,943,847)
2598. Summary of remaining write-ins for Line 25 from overflow page .....	127,283,019	96,019,359	(31,263,660)
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above)	1,126,211,030	898,111,594	(228,099,436)

## NOTES TO FINANCIAL STATEMENTS

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## NOTES TO FINANCIAL STATEMENTS

### Note 1 – Summary of Significant Accounting Policies and Going Concern

a. Accounting practices:

The accompanying financial statements of Massachusetts Mutual Life Insurance Company (the Company) have been prepared in conformity with the Statutory Accounting Practices (SAP) of the National Association of Insurance Commissioners (NAIC) and the accounting practices prescribed or permitted by the Commonwealth of Massachusetts Division of Insurance (the Division).

A reconciliation of the Company's net income and capital and surplus between NAIC SAP and practices prescribed and permitted by the Commonwealth of Massachusetts is shown below:

	SSAP #	F/S Page	F/S Line #	2016	2015
<b>NET INCOME</b>					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ (13,882,911)	\$ 412,180,593
(2) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(3) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	<u>\$ (13,882,911)</u>	<u>\$ 412,180,593</u>
<b>SURPLUS</b>					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 15,423,989,956	\$ 14,982,532,137
(6) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(7) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(8) NAIC SAP (5-6-7=8)	XXX	XXX	XXX	<u>\$ 15,423,989,956</u>	<u>\$ 14,982,532,137</u>

b. Use of estimates in the preparation of the financial statements:

The preparation of financial statements requires management to make estimates and assumptions that impact the reported amounts of assets and liabilities, the disclosure of assets and liabilities as of the date of the statutory financial statements and the reported amounts of revenues and expenses during the reporting periods. The most significant estimates include those used in determining the carrying values of investments including the amount of mortgage loan investment valuation reserves, other-than-temporary impairment(s) (OTTI), the value of the investment in MassMutual Holding LLC (MMHLLC), the liabilities for policyholders' reserves, the determination of admissible deferred tax assets (DTAs), and the liability for taxes and litigation contingencies. Future events including, but not limited to, changes in the level of mortality, morbidity, interest rates, persistency, asset valuations and defaults could cause results to differ from the estimates used in the statutory financial statements. Although some variability is inherent in these estimates, management believes the amounts presented are appropriate.

c. Accounting policy:

Life insurance premium revenue is generally recognized annually on the anniversary date of the policy. However, premium for flexible products, primarily universal life and variable universal life contracts, is recognized as revenue when received. Annuity premium is recognized as revenue when received. Disability income and long-term care premium is recognized as revenue when due. Expenses incurred in connection with acquiring new insurance business, including certain acquisition costs, such as commissions, are charged to current operations as incurred. Policy loans are carried at the outstanding loan balance less amounts unsecured by the cash surrender value of the policy. Unsecured amounts can occur when subsequent charges are incurred on the underlying policy without the receipt of additional premium. Where applicable, the values of invested assets have been adjusted for impairments considered OTTI.

Investment real estate, which the Company has the intent to hold for the production of income, and real estate occupied by the Company, are carried at depreciated cost, less encumbrances. Depreciation is calculated using the straight-line method over the estimated useful life of the real estate holding, not to exceed 40 years. Depreciation expense is included in net investment income. Real estate held for sale is initially carried at the lower of depreciated cost or fair value less estimated selling costs and is no longer depreciated. Adjustments to carrying value, including for further declines in fair value, are recorded in a valuation reserve, which is included in realized capital losses.

In addition, the Company uses the following accounting policies:

- (1) Short-term investments, which are carried at amortized cost, consist of all highly liquid investments purchased with maturities of greater than three months and less than or equal to 12 months. Investments in short-term bonds and money market mutual funds are classified as short-term investments.
- (2) Bonds are generally valued at amortized cost using the constant yield interest method with the exception of NAIC Category 6 bonds, which are in or near default, and certain residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), which are rated by outside modelers, which are carried at the lower of amortized cost or fair value. NAIC ratings are applied to bonds and other securities. Categories 1 and 2 are considered investment grade, while Categories 3 through 6 are considered below investment grade. Bond transactions are recorded on a trade date basis, except for private placement bonds, which are recorded on the funding date.

The fair value of bonds is based on quoted market prices when available. If quoted market prices are not available, values provided by other third-party organizations are used. If values provided by other third-party organizations are unavailable, fair value is estimated using internal models by discounting expected future cash flows using observable current market rates applicable to yield, credit quality and maturity of the investment or using quoted market values for comparable investments. Internal inputs used in the determination of fair value include estimated prepayment speeds, default rates, discount rates and collateral values, among others. Structure characteristics and cash flow priority are also considered. Fair values resulting from internal models are those expected to be received in an orderly transaction between willing market participants at the financial statement date.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

- (3) Unaffiliated common stocks are carried at fair value, which is based on quoted market prices when available. If quoted market prices are not available, values provided by third-party organizations are used. If values from third parties are unavailable, fair values are determined by management using estimates based upon internal models. The Company's internal models include estimates based upon comparable company analysis, review of financial statements, broker quotes and last traded price. Fair values resulting from internal models are those expected to be received in an orderly transaction between willing market participants.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

The Company held unaffiliated common stocks, for which the transfer of ownership was restricted by contractual requirements, with carrying values of \$244,273,768 as of December 31, 2016 and \$248,582,856 as of December 31, 2015.

## NOTES TO FINANCIAL STATEMENTS

- (4) Preferred stocks in good standing, those that are rated Categories 1 through 3 by the Securities Valuation Office (SVO) of the NAIC, are generally valued at amortized cost. Preferred stocks not in good standing, those that are rated Categories 4 through 6 by the SVO of the NAIC, are valued at the lower of amortized cost or fair value. Fair values are based on quoted market prices, when available. If quoted market prices are not available, values provided by other third-party organizations are used. If values provided by other third-party organizations are unavailable, fair value is estimated using internal models. These models use inputs not directly observable or correlated with observable market data. Typical inputs integrated into the Company's internal discounted expected earnings models include, but are not limited to, earnings before interest, taxes, depreciation and amortization estimates. Fair values resulting from internal models are those expected to be received in an orderly transaction between willing market participants.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

The Company held preferred stocks for which the transfer of ownership was restricted by contractual requirements with carrying values of \$303,825,175 as of December 31, 2016 and \$346,813,941 as of December 31, 2015.

- (5) Mortgage loans are valued at the unpaid principal balance of the loan, net of unamortized premium, discount, mortgage origination fees and valuation allowances. Interest income earned on impaired loans is accrued on the outstanding principal balance of the loan based on the loan's contractual coupon rate. Interest is not accrued for (a) impaired loans more than 60 days past due, (b) delinquent loans more than 90 days past due, or (c) loans that have interest that is not expected to be collected. The Company continually monitors mortgage loans where the accrual of interest has been discontinued, and will resume the accrual of interest on a mortgage loan when the facts and circumstances of the borrower and property indicate that the payments will continue to be received according to the terms of the original or modified mortgage loan agreement.

Mortgage loans comprised commercial mortgage loans and residential mortgage loans. The Company holds commercial mortgage loans for which it is the primary lender and mezzanine loans that are subordinate to senior secured first liens. The Company's loan agreements with the senior lender contain negotiated provisions that are designed to maximize the Company's influence with the objective of mitigating the Company's risks as the secondary lender for mezzanine loans. Commercial mortgage loans have varying risk characteristics including, among others, the borrower's liquidity, the underlying percentage of completion of a project, the returns generated by the collateral, the refinance risk associated with maturity of the loan and deteriorating collateral value. Residential mortgage loans are primarily seasoned pools of homogeneous residential mortgage loans substantially backed by Federal Housing Administration (FHA) and Veterans Administration (VA) guarantees.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

- (6) For loan-backed and structured securities, such as asset-backed securities (ABS), mortgage-backed securities (MBS), including residential mortgage-backed securities and commercial mortgage-backed securities, and structured securities, including collateralized debt obligations (CDOs), amortization or accretion is revalued quarterly based on the current estimated cash flows, using either the prospective or retrospective adjustment methodologies.

Certain fixed income securities, with the highest ratings from a rating agency follow the retrospective method of accounting. Under the retrospective method, the recalculated effective yield equates the present value of the actual and anticipated cash flows, including new prepayment assumptions, to the original cost of the investment. Prepayment assumptions are based on borrower constraints and economic incentives such as the original term, age and coupon of the loan as affected by the interest rate environment. The current carrying value is then increased or decreased to the amount that would have resulted had the revised yield been applied since inception, and investment income is correspondingly decreased or increased.

All other fixed income securities, such as floating rate bonds and interest only securities, including those that have been impaired, follow the prospective method of accounting. Under the prospective method, the recalculated future effective yield equates the carrying value of the investment to the present value of the anticipated future cash flows.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

- (7) Common stocks of unconsolidated subsidiaries, primarily C.M. Life Insurance Company (C.M. Life), MML Bay State Life Insurance Company (MML Bay State) and MMHLLC, are accounted for using the statutory equity method. The Company accounts for the value of its investment in its subsidiary, MMHLLC, at its underlying United States of America (U.S.) Generally Accepted Accounting Principles (GAAP) equity value adjusted to remove certain nonadmitted and intangible assets, as well as a portion of its noncontrolling interests (NCI) and appropriated retained earnings, after consideration of MMHLLC's fair value and the Company's capital levels. The Division has affirmed the statutory recognition of the Company's application of the NCI guidelines in MMHLLC's statutory carrying value. However, the Company has limited this recognition to \$2,675,250,656 as of December 31, 2016 and \$2,600,000,000 as of December 31, 2015. Operating results, less dividend distributions, for MMHLLC are reflected as net unrealized capital gains (losses) within the Capital and Surplus Account on the Summary of operations. Dividend distributions received from MMHLLC are recorded in net investment income and are limited to MMHLLC's U.S. GAAP retained earnings. The cost basis of common stocks - subsidiaries and affiliates is adjusted for impairments deemed to be other than temporary, consistent with common stocks - unaffiliated. Refer to Note 21c. "Other items" for further information on the valuation of MMHLLC.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

The Company held affiliated common stocks for which the transfer of ownership was restricted by contractual requirements with carrying values of \$23,261,702 as of December 31, 2016 and \$37,498,973 as of December 31, 2015.

- (8) Partnerships and limited liability companies (LLCs), except for partnerships that generate and realize low income housing tax credits (LIHTCs), are accounted for using the equity method with the change in the equity value of the underlying investment recorded in surplus. Distributions received are recognized as net investment income to the extent the distribution does not exceed previously recorded accumulated undistributed earnings.

Investments in partnerships that generate LIHTCs are carried at amortized cost unless considered impaired. Under the amortized cost method, the excess of the carrying value of the investment over its estimated residual value is amortized into income during the period in which tax benefits are recognized.

The equity method is suspended if the carrying value of the investment is reduced to zero due to losses from the investment. Once the equity method is suspended, losses are not recorded until the investment returns to profitability and the equity method is resumed. However, if the Company has guaranteed obligations of the investment or is otherwise committed to provide further financial support for the investment, losses will continue to be reported up to the amount of those guaranteed obligations or commitments.

## NOTES TO FINANCIAL STATEMENTS

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

- (9) Interest rate swaps and credit default swaps associated with replicated assets are valued at amortized cost and all other derivative types are carried at fair value, which is based primarily upon quotations obtained from counterparties and independent sources. These quotations are compared to internally derived prices and a price challenge is lodged with the counterparties and independent sources when a significant difference cannot be explained by appropriate adjustments to the internal model. When quoted market values are not reliable or available, the value is based on an internal valuation process using market observable inputs that other market participants would use. Changes in the fair value of these instruments other than interest rate swaps and credit default swaps associated with replicated assets are recorded as unrealized capital gains (losses) in surplus. Gains and losses realized on settlement, termination, closing or assignment of contracts are recorded as realized capital gains (losses). Amounts receivable and payable are accrued as net investment income.
- (10) The Company does not utilize anticipated investment income as a factor in the premium deficiency calculation in accordance with Statement of Statutory Accounting Principles (SSAP) No. 54 "Individual and Group Accident and Health Contracts."
- (11) Unpaid claims and claim expense reserves are related to disability and long-term care claims. Unpaid disability claim liabilities are projected based on the average of the last three disability payments. Long-term care unpaid claim liabilities are projected using policy specific daily benefit amounts and aggregate utilization factors. Claim expense reserves are based on an analysis of the unit expenses related to the processing and examination of new and ongoing claims. Interest accrued on reserves is calculated by applying NAIC prescribed interest rates to the average reserves by year incurred.
- (12) The Company has not modified its capitalization policy from the prior period.
- (13) The Company did not issue any business that would give rise to pharmaceutical rebates or risk sharing receivables.
- (14) The book values of investments are written down when declines in values are considered to be other than temporary.

### Bonds - general

The Company employs a systematic methodology to evaluate OTTI by conducting a quarterly analysis of bonds. The impairment review process provides a framework for determining OTTI in a manner consistent with market participant assumptions. The Company considers the following factors, where applicable depending on the type of securities, in the evaluation of whether a decline in value is other than temporary: (a) the likelihood that the Company will be able to collect all amounts due according to the contractual terms of the debt security; (b) the present value of the expected future cash flows of the security; (c) the characteristics, quality and value of the underlying collateral or issuer securing the position; (d) collateral structure; (e) the length of time and extent to which the fair value has been below amortized cost; (f) the financial condition and near-term prospects of the issuer; (g) adverse conditions related to the security or industry; (h) the rating of the security; (i) the Company's ability and intent to hold the investment for a period of time sufficient to allow for an anticipated recovery to amortized cost; and (j) other qualitative and quantitative factors in determining the existence of OTTI including, but not limited to, unrealized loss trend analysis and significant short-term changes in value.

In addition, if the Company has the intent to sell, or the inability, or lack of intent to retain the investment for a period sufficient to recover the amortized cost basis, an OTTI is recognized as a realized loss equal to the entire difference between the investment's amortized cost basis and its fair value at the balance sheet date.

When a bond is OTTI, a new cost basis is established.

### Bonds - corporate

For corporate securities, if it is determined that a decline in the fair value of a bond is other than temporary, OTTI is recognized as a realized loss equal to the difference between the investment's amortized cost basis and, generally, its fair value at the balance sheet date.

### Bonds - loan-backed and structured securities

For loan-backed and structured securities, if the present value of cash flows expected to be collected is less than the amortized cost basis of the security, an OTTI is recognized as a realized loss equal to the difference between the investment's amortized cost basis and the present value of cash flows expected to be collected. The expected cash flows are discounted at the security's effective interest rate. Internal inputs used in determining the amount of the OTTI on structured securities include collateral performance, prepayment speeds, default rates, and loss severity based on borrower and loan characteristics, as well as deal structure including subordination, over-collateralization and cash flow priority.

ABS and MBS are evaluated for OTTI using scenarios and assumptions based on the specifics of each security including collateral type, loan type, vintage and subordination level in the structure. Cash flow estimates are based on these assumptions and inputs obtained from external industry sources along with internal analysis and actual experience. Where applicable, assumptions include prepayment speeds, default rates and loss severity, weighted average maturity and changes in the underlying collateral values.

The Company has a review process for determining if CDOs are at risk for OTTI. For the senior, mezzanine and junior debt tranches, cash flows are modeled using multiple scenarios based on the current ratings and values of the underlying corporate credit risks and incorporating prepayment and default assumptions that vary according to collateral attributes of each CDO. The prepayment and default assumptions are varied within each model based upon rating (base case), historical expectations (default), rating change improvement (optimistic), rating change downgrade (pessimistic) and fair value (market). The default rates produced by these multiple scenarios are assigned an expectation weight according to current market and economic conditions and fed into a final scenario. OTTI is recorded if this final scenario results in the loss of any principal or interest payments due.

For the most subordinated junior CDO tranches, the present value of the projected cash flows in the final scenario is measured using an effective yield. If the current book value of the security is greater than the present value measured using an effective yield, an OTTI is taken in an amount sufficient to produce its effective yield. Certain CDOs cannot be modeled using all of the scenarios because of limitations on the data needed for all scenarios. The cash flows for these CDOs, including foreign currency denominated CDOs, are projected using a customized scenario management believes is reasonable for the applicable collateral pool.

**NOTES TO FINANCIAL STATEMENTS**

For loan-backed and structured securities, any difference between the new amortized cost basis and any increased present value of future cash flows expected to be collected is accreted into net investment income over the expected remaining life of the bond.

**Common and preferred stock**

The cost basis of common and preferred stocks is adjusted for impairments deemed to be other than temporary. The Company considers the following factors in the evaluation of whether a decline in value is other than temporary: (a) the financial condition and near-term prospects of the issuer; (b) the Company's ability and intent to retain the investment for a period sufficient to allow for a near-term recovery in value; and (c) the period and degree to which the value has been below cost. The Company conducts a quarterly analysis of issuers whose common or preferred stock is not-in-good standing or valued below 80% of cost. The Company also considers other qualitative and quantitative factors in determining the existence of OTTI including, but not limited to, unrealized loss trend analysis and significant short-term changes in value.

**Mortgage loans**

The Company performs internal reviews at least annually to determine if individual mortgage loans are performing or nonperforming. The fair values of performing mortgage loans are estimated by discounting expected future cash flows using current interest rates for similar loans with similar credit risk. For nonperforming loans, the fair value is the estimated collateral value of the underlying real estate. If foreclosure is probable, the Company will obtain an external appraisal.

Mortgage loans are considered to be impaired when, based upon current available information and events, it is probable that the Company will be unable to collect all amounts of principal and interest due according to the contractual terms of the mortgage loan agreement. A valuation allowance is recorded on a loan-by-loan basis in net unrealized capital losses for the excess of the carrying value of the mortgage loan over the fair value of its underlying collateral. Such information or events could include property performance, capital budgets, future lease roll, a property inspection as well as payment trends. Collectability and estimated decreases in collateral values are also assessed on a loan-by-loan basis considering all events and conditions relevant to the loan. This evaluation is inherently subjective as it requires estimates that are susceptible to significant revisions as more information becomes available, as changes occur in the market or as negotiations with the borrowing entity evolve. If there is a change in the fair value of the underlying collateral or the estimated loss on the loan, the valuation allowance is adjusted accordingly. An OTTI occurs upon the realization of a credit loss, typically through foreclosure or after a decision is made to accept a discounted payoff, and is recognized in realized capital losses. The previously recorded valuation allowance is reversed from unrealized capital losses. When an OTTI is recorded, a new cost basis is established reflecting estimated value of the collateral.

**Real estate**

For real estate held for the production of income, depreciated cost is adjusted for impairments whenever events or changes in circumstances indicate the carrying amount of the asset may not be recoverable, with the impairment being included in realized capital losses. An impairment is recorded when the property's estimated future net operating cash flows over ten years, undiscounted and without interest charges, is less than book value.

Adjustments to the carrying value of real estate held for sale are recorded in a valuation reserve as realized capital losses when the fair value less estimated selling costs is less than the carrying value.

**Partnerships and LLCs**

When it is probable that the Company will be unable to recover the outstanding carrying value of an investment based on undiscounted cash flows, or there is evidence indicating an inability of the investee to sustain earnings to justify the carrying value of the investment, OTTI is recognized in realized capital losses reflecting the excess of the carrying value over the estimated fair value of the investment. The estimated fair values of limited partnership interests are generally based on the Company's share of the net asset value (NAV) as provided in the financial statements of the investees. In certain circumstances, management may adjust the NAV by a premium or discount when it has sufficient evidence to support applying such adjustments.

For determining impairments in partnerships that generate LIHTCs, the Company uses the present value of all future benefits, the majority of which are tax credits, discounted at a risk-free rate for future benefits of ten or more years and compares the results to its current book value. Impairments are recognized in realized capital losses reflecting the excess of the carrying value over the estimated fair value of the investment.

**d. Going concern:**

There is not substantial doubt regarding the Company's ability to continue as a going concern.

**Note 2 – Accounting Changes and Corrections of Errors****a. The following summarizes the corrections of prior year errors that have been recorded in surplus, net of tax:**

	Year Ended December 31, 2016		
	Increase (Decrease) to:		Correction of Asset or Liability Balances
	Prior Years	Current Year	
	Net Income	Surplus	
Policyholders' reserves	\$ 49,110,164	\$ 49,110,164	\$ (49,110,164)
Partnerships and limited liability companies	–	4,646,968	(4,646,968)
Federal income tax receivable	(11,955,610)	(11,955,610)	11,955,610
Fees and other income	(2,472,150)	(2,472,150)	2,472,150
Total	\$ 34,682,404	\$ 39,329,372	\$ (39,329,372)

Of the \$39,329,372 increase to surplus for prior year errors, \$34,682,404 was recorded as prior period adjustments and \$4,646,968 was recorded as a change in net unrealized capital gains (losses), net of tax in the Statutory Statements of Changes in Surplus.

## NOTES TO FINANCIAL STATEMENTS

	Year Ended December 31, 2015		
	Increase (Decrease) to:		Correction of Asset or Liability Balances
	Prior Years Net Income	Current Year Surplus	
Policyholders' reserves	\$ 6,019,278	\$ 6,019,278	\$ (6,019,278)
Policyholders' benefits	4,229,311	4,229,311	(4,229,311)
Net investment income	(1,005,469)	(1,005,469)	(1,005,469)
Total	\$ 9,243,120	\$ 9,243,120	\$ (11,254,058)

Certain prior year amounts within these financial statements have been reclassified to conform to the current year presentation.

b. Adoption of new accounting standards

In April and August 2016, the NAIC adopted and made effective modifications to SSAP No. 1, *Accounting Policies, Risks & Uncertainties, and Other Disclosures*. The modifications clarify that the disclosure presentation for permitted and prescribed practices should include practices that result in different statutory accounting reporting (such as gross or net) presentations that differ from the Accounting Practices and Procedures (AP&P) Manual. The modifications also clarified that disclosure of restricted assets should be included in the annual financial statements, and, pursuant to the AP&P manual preamble, in the interim financial statements if significant changes have occurred since the annual statement. These modifications did not have an impact on the Company's financial statements.

In June 2016, the NAIC adopted and made effective a modification to SSAP No. 92, *Postretirement Benefits Other than Pensions*, and SSAP No. 102, *Pensions*. The modification allows the use of the spot yield curve method as an alternative to the single weighted-average discount rate to measure net periodic benefit costs. Under SSAPs No. 92 and 102, a commonly used measurement approach is to develop a single weighted-average discount rate determined at the pension plan measurement date based on the projected future benefit payments used in determining the pension obligation. The new alternative spot yield curve approach measures the service cost and interest cost components of net periodic benefit costs by using individual duration-specific spot discount rates derived from an acceptable high-quality corporate bond yield curve and matched with separate cash flows for each future year. The Company did not elect to measure its pension and postretirement obligations using the spot yield curve alternative method. As a result, this modification did not have an impact on the Company's financial statements.

In June 2016, the NAIC adopted and made effective modifications to SSAP No. 97, *Investments in Subsidiary, Controlled and Affiliated Entities*. The modifications clarify which entities are subject to the subsidiary, controlled and affiliated (SCA) disclosure and add a new appendix detailing the filing guidance that was previously included within the Purposes and Procedures Manual of the NAIC Investment Analysis Office for SCA entities. These modifications did not have an impact on the Company's financial statements.

In June 2016, the NAIC adopted modifications to SSAP No. 2, *Cash, Drafts and Short-Term Investments*, SSAP No. 26, *Bonds, Excluding Loan-backed and Structured Securities*, and SSAP No. 30, *Unaffiliated Common Stock*, which were effective September 30, 2016. These modifications clarify the accounting for short-term investments and the classification of Money Market Mutual Funds registered under the Investment Company Act of 1940 (the Act) and regulated under rule 2a-7 of the Act as short-term investments under SSAP No. 2. While retaining the short-term classification, Money Market Mutual Funds may be accounted for under SSAP No. 26 or SSAP No. 30. These modifications did not have a significant impact on the Company's financial statements.

In June 2016, the NAIC adopted modifications to SSAP No. 1, *Accounting Policies, Risks & Uncertainties, and Other Disclosures*, which are effective December 31, 2016. These modifications require the reporting entity to disclose the amount and nature of any assets reflected within the reporting entity's financial statements that were received as collateral and the recognized liability to return these collateral assets. The Company has adopted these modifications.

In August 2016, the NAIC adopted and made effective modifications to SSAP No. 86, *Derivatives*. The modifications incorporate swaptions which are contracts granting the owner the right but not the obligation to enter into an underlying swap, as an example of a derivative instrument. This modification did not have an impact on the Company's financial statements.

In August 2016, the NAIC adopted and made effective modifications to SSAP No. 51, *Life Contracts*. These modifications clarify that annual assumption changes from reserving methods used in principles-based reserving (PBR) would not qualify as a change in valuation basis. Changes in valuation basis are recorded directly to surplus instead of through income. This modification was made to accommodate PBR which becomes effective January 1, 2017. This modification did not have an impact on the Company's financial statements.

**NOTES TO FINANCIAL STATEMENTS**

**Note 3 – Business Combinations and Goodwill**

a. On July 1, 2016, the Company acquired the MetLife Premier Client Group (MPCG). The advisor force includes more than 40 local sales and advisory operations and approximately 4,000 advisors across the country, which expands the Company’s existing MM Financial Advisors to more than 9,200 financial professionals. The purchase of MSI Financial Services Inc. was accounted for under the statutory purchase method, classified as investments in common stocks – subsidiaries and affiliates at a cost of \$126,045,875 and resulted in the recognition of statutory goodwill of \$38,245,161. The Company also paid \$161,413,931 of cash to acquire the remaining MPCG assets of \$250,979,276 and liabilities of \$89,565,345, which includes the \$40,700,000 of the liabilities as disclosed in Note 12, “Retirement Plans, Deferred Compensation, Postemployment Benefits and Compensated Absences and Other Postretirement Benefit Plans”. The remaining MPCG assets include \$207,686,645 of assets that are nonadmitted. The Company recorded \$1,912,258 of goodwill amortization in 2016.

b-d. No change

**Note 4 – Discontinued Operations**

The Company did not have any discontinued operations.

**Note 5 – Investments**

a. Mortgage loans, including mezzanine real estate loans:

(1) The maximum and minimum lending rates for new mortgage loans during 2016 were:  
Commercial mortgage loans 6.0% and 3.2%, residential mortgage loans 4.4% and 4.1% and mezzanine real estate loans, both the maximum and the minimum, 9.6%.

The maximum and minimum lending rates for new mortgage loans during 2015 were:  
Commercial mortgage loans 8.3% and 2.6%, residential mortgage loans 4.9% and 3.9% and mezzanine real estate loans 12.0% and 10.8%.

(2) The maximum percentage of any one commercial mortgage loan to the estimated value of secured collateral at the time the loan was originated, exclusive of mezzanine, insured, guaranteed or purchase money mortgages, was 81.6% as of December 31, 2016 and 93.0% as of December 31, 2015. The maximum percentage of any one mezzanine loan to the estimated value of secured collateral at the time the loan was originated was 61.3% as of December 31, 2016 and 76.5% as of December 31, 2015.

(3) As of December 31, 2016 and 2015, the Company did not have any taxes, assessments and amounts advanced and not included in the mortgage loan total.

(4) Age analysis of mortgage loans:

	Residential			Commercial		Mezzanine	Total
	Farm	Insured	All Other	Insured	All Other		
<b>a. 2016</b>							
1. Recorded investment (all)							
(a) Current	\$	- \$ 1,762,761,616	\$ 5,142,195	\$	- \$ 19,122,298,811	\$ 70,888,944	\$ 20,961,091,566
(b) 30-59 days past due		-	-		-	-	-
(c) 60-89 days past due		-	-		-	-	-
(d) 90-179 days past due		-	-		-	-	-
(e) 180+ days past due		-	-		-	-	-
2. Accruing interest 90-179 days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued		-	-		-	-	-
3. Accruing interest 180+ days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued		-	-		-	-	-
4. Interest reduced							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Number of loans		-	-		-	-	-
(c) Percent reduced		-	-		-	-	-
<b>b. 2015</b>							
1. Recorded investment (all)							
(a) Current	\$	- \$ 1,713,768,570	\$ 7,038,032	\$	- \$ 20,216,847,210	\$ 70,075,582	\$ 22,007,729,394
(b) 30-59 days past due		-	-		-	-	-
(c) 60-89 days past due		-	-		-	-	-
(d) 90-179 days past due		-	-		-	-	-
(e) 180+ days past due		-	-		-	-	-
2. Accruing interest 90-179 days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued		-	-		-	-	-
3. Accruing interest 180+ days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued		-	-		-	-	-
4. Interest reduced							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Number of loans		-	-		-	-	-
(c) Percent reduced		-	-		-	-	-

## NOTES TO FINANCIAL STATEMENTS

- (5) Investment in impaired loans with or without allowance for credit losses:

	Residential			Commercial		Mezzanine	Total
	Farm	Insured	All Other	Insured	All Other		
a. 2016							
1. With allowance for credit losses	\$ -	\$ -	\$ -	\$ -	16,195,271	\$ -	16,195,271
2. No allowance for credit losses	-	-	-	-	6,161,988	-	6,161,988
b. 2015							
1. With allowance for credit losses	\$ -	\$ -	\$ -	\$ -	-	\$ -	-
2. No allowance for credit losses	-	-	-	-	28,100,144	-	28,100,144

- (6) Investment in impaired loans - average recorded investment, interest income recognized, recorded investment on nonaccrual status and amount of interest income recognized using a cash-basis method of accounting:

	Residential			Commercial		Mezzanine	Total
	Farm	Insured	All Other	Insured	All Other		
a. 2016							
1. Average recorded investment	\$ -	\$ -	\$ -	\$ -	26,682,166	\$ -	26,682,166
2. Interest income recognized	-	-	-	-	1,409,227	-	1,409,227
3. Recorded investment on nonaccrual status	-	-	-	-	-	-	-
4. Amount of interest income recognized using a cash-basis method of accounting	-	-	-	-	1,468,765	-	1,468,765
b. 2015							
1. Average recorded investment	\$ -	\$ -	\$ -	\$ -	30,818,558	\$ -	30,818,558
2. Interest income recognized	-	-	-	-	2,205,258	-	2,205,258
3. Recorded investment on nonaccrual status	-	-	-	-	-	-	-
4. Amount of interest income recognized using a cash-basis method of accounting	-	-	-	-	2,207,886	-	2,207,886

- (7) Allowance for credit losses:

	Years Ended December 31,	
	2016	2015
a. Balance at beginning of period	\$ -	\$ -
b. Additions charged to operations	7,193,244	5,465,154
c. Direct write-downs charged against the allowances	(4,943,244)	(5,040,955)
d. Recoveries of amounts previously charged off	-	(424,199)
e. Balance at end of period	<u>\$ 2,250,000</u>	<u>\$ -</u>

- (8) As of December 31, 2016, the Company did not have any mortgage loans derecognized as a result of foreclosure.

- (9) Interest income earned on impaired loans is accrued on the outstanding principal balance of the loan based on the loan's contractual coupon rate. Interest is not accrued for (a) impaired loans more than 60 days past due, (b) delinquent loans more than 90 days past due, or (c) loans that have interest that is not expected to be collected. The Company continually monitors mortgage loans where the accrual of interest has been discontinued, and will resume the accrual of interest on a mortgage loan when the facts and circumstances of the borrower and property indicate that the payments will continue to be received according to the terms of the original or modified mortgage loan agreement.

- b. Debt restructuring:

As of December 31, 2016 and 2015, the Company did not have any restructured debt.

- c. Reverse mortgages:

As of December 31, 2016 and 2015, the Company did not have any reverse mortgages.

**NOTES TO FINANCIAL STATEMENTS**

d. Loan-backed and structured securities:

- (1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.
- (2) The following contains loan-backed and structured securities that recognized OTTI classified on the following bases for recognizing OTTI:

(1) Amortized Cost Basis Before OTTI	(2) OTTI Recognized in Loss		(3) Fair Value 1-(2a+2b)
	(2a) Interest	(2b) Non-interest	

OTTI recognized in the first quarter

a. Intent to sell	\$	-	\$	-	\$	-
b. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		<u>57,985,071</u>		<u>-</u>		<u>2,201,092</u>
c. Total first quarter	\$	<u>57,985,071</u>	\$	<u>-</u>	\$	<u>2,201,092</u>

OTTI recognized in the second quarter

d. Intent to sell	\$	-	\$	-	\$	-
e. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		<u>49,097,217</u>		<u>-</u>		<u>894,514</u>
f. Total second quarter	\$	<u>49,097,217</u>	\$	<u>-</u>	\$	<u>894,514</u>

OTTI recognized in the third quarter

g. Intent to sell	\$	-	\$	-	\$	-
h. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		<u>44,266,478</u>		<u>-</u>		<u>2,375,942</u>
i. Total third quarter	\$	<u>44,266,478</u>	\$	<u>-</u>	\$	<u>2,375,942</u>

OTTI recognized in the fourth quarter

j. Intent to sell	\$	-	\$	-	\$	-
k. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis		<u>42,175,938</u>		<u>-</u>		<u>130,217</u>
l. Total fourth quarter	\$	<u>42,175,938</u>	\$	<u>-</u>	\$	<u>130,217</u>

m. Annual aggregate total

	\$	<u>-</u>	\$	<u>5,601,765</u>
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All impairments were taken due to present value of cash flows expected to be collected being less than the amortized cost basis.

## NOTES TO FINANCIAL STATEMENTS

- (3) The following is a CUSIP detail list of impaired structured securities where the present value of cash flows expected to be collected is less than the amortized cost basis.

CUSIP	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value at Time of OTTI	Date of Financial Instrument Where Reported
126671UU8	\$ 30,843.19	\$ 30,347.96	\$ (495.23)	\$ 30,347.96	\$ 27,811.82	March 31, 2016
17307GKZ0	114,400.45	113,135.78	(1,264.67)	113,135.78	111,921.16	March 31, 2016
18974BAA7	466,325.47	430,445.97	(35,879.50)	430,445.97	421,446.58	March 31, 2016
18974BAN9	237,052.69	213,790.46	(23,262.23)	213,790.46	222,125.05	March 31, 2016
22943HAD8	5,057,583.09	4,776,999.74	(280,583.35)	4,776,999.74	3,447,059.39	March 31, 2016
466247BC6	20,209.32	19,688.63	(520.69)	19,688.63	20,079.24	March 31, 2016
55274SAM3	277,221.19	256,965.37	(20,255.82)	256,965.37	260,976.03	March 31, 2016
57643QAE5	4,663,518.83	4,642,799.60	(20,719.23)	4,642,799.60	4,586,797.71	March 31, 2016
585525FC7	31,899.50	31,602.82	(296.68)	31,602.82	30,654.61	March 31, 2016
5899292N7	517,738.49	510,348.31	(7,390.18)	510,348.31	511,562.29	March 31, 2016
589929N38	678,883.40	670,090.23	(8,793.17)	670,090.23	666,652.96	March 31, 2016
77277LAF4	25,446,697.15	24,419,541.90	(1,027,155.25)	24,419,541.90	34,016,670.90	March 31, 2016
77277LAH0	1,278,117.51	1,228,012.37	(50,105.14)	1,228,012.37	3,277,728.00	March 31, 2016
77277LAJ6	18,098,147.19	17,388,773.03	(709,374.16)	17,388,773.03	21,405,612.42	March 31, 2016
88157QAL2	493,785.09	486,131.81	(7,653.28)	486,131.81	1,007,051.00	March 31, 2016
9292276K7	572,648.05	565,304.85	(7,343.20)	565,304.85	564,247.57	March 31, 2016
07384MWF5	350,465.82	348,536.87	(1,928.95)	348,536.87	336,256.24	June 30, 2016
126671UU8	28,942.52	28,784.87	(157.65)	28,784.87	26,573.62	June 30, 2016
22541NMA4	310,649.58	310,078.85	(570.73)	310,078.85	310,904.52	June 30, 2016
22943HAD8	4,631,596.22	4,599,316.44	(32,279.78)	4,599,316.44	3,303,541.40	June 30, 2016
589929N38	339,683.28	335,332.39	(4,350.89)	335,332.39	330,467.22	June 30, 2016
77277LAF4	24,419,541.91	23,947,152.29	(472,389.62)	23,947,152.29	33,913,277.10	June 30, 2016
77277LAH0	1,228,012.37	1,204,968.98	(23,043.39)	1,204,968.98	3,268,749.60	June 30, 2016
77277LAJ6	17,388,773.03	17,062,531.31	(326,241.72)	17,062,531.31	21,340,549.98	June 30, 2016
79549ASM2	399,551.91	366,000.65	(33,551.26)	366,000.65	377,090.63	June 30, 2016
07384MWF5	255,256.61	255,223.62	(32.99)	255,223.62	246,906.43	September 30, 2016
77277LAF4	23,947,152.29	22,588,588.71	(1,358,563.58)	22,588,588.71	34,387,995.60	September 30, 2016
77277LAH0	1,204,968.98	1,138,697.58	(66,271.40)	1,138,697.58	3,314,505.60	September 30, 2016
77277LAJ6	17,062,531.30	16,124,279.85	(938,251.45)	16,124,279.85	21,639,275.28	September 30, 2016
86358RA23	1,796,568.34	1,783,745.33	(12,823.01)	1,783,745.33	1,711,383.05	September 30, 2016
05948JAA0	173,623.74	170,200.35	(3,423.39)	170,200.35	169,433.58	December 31, 2016
126671UU8	27,756.93	26,980.34	(776.59)	26,980.34	26,425.36	December 31, 2016
45660LYW3	486,495.65	477,466.05	(9,029.60)	477,466.05	472,978.45	December 31, 2016
77277LAF4	22,588,588.71	22,537,014.10	(51,574.61)	22,537,014.10	30,644,371.79	December 31, 2016
77277LAH0	1,138,697.58	1,136,181.78	(2,515.80)	1,136,181.78	2,474,832.46	December 31, 2016
77277LAJ6	16,124,279.85	16,088,661.07	(35,618.78)	16,088,661.07	19,283,531.52	December 31, 2016
86358RA23	1,636,495.14	1,609,217.15	(27,277.99)	1,609,217.15	1,547,904.22	December 31, 2016
Totals	\$ 193,524,702.37	\$ 187,922,937.41	\$ (5,601,764.96)	\$ 187,922,937.41	\$ 249,705,350.38	

- (4) As of December 31, 2016, the gross unrealized losses and fair values for investments in structured and loan-backed securities for which an OTTI has not been recognized in earnings follow:

a. The aggregate amount of unrealized losses:	
1. Less than 12 months	\$ (62,088,087)
2. 12 months or longer	\$ (103,217,499)
b. The aggregate related fair value of securities with unrealized losses:	
1. Less than 12 months	\$ 3,270,330,615
2. 12 months or longer	\$ 4,669,029,455

- (5) No additional information.

e. Repurchase agreements:

- (1) The Company has entered into repurchase agreements whereby the Company sells securities and simultaneously agrees to repurchase the same or substantially the same securities. These repurchase agreements are accounted for as collateralized borrowings with the proceeds from the sale of the securities recorded as a liability and the underlying securities continue to be recorded as an investment by the Company. Earnings on these investments are recorded as investment income and the difference between the proceeds and the amount at which the securities will be subsequently reacquired is amortized as interest expense. Repurchase agreements are used as a tool for overall portfolio management to help ensure the Company maintains adequate assets in order to provide yield, spread and duration to support liabilities and other corporate needs.

The Company provides collateral, as dictated by the repurchase agreements, to the counterparty in exchange for a loan. If the fair value of the securities sold becomes less than the loan, the counterparty may require additional collateral.

The carrying value, which is at cost, reported in the Company's assets for repurchase agreements approximates the fair value.

## NOTES TO FINANCIAL STATEMENTS

The Company had repurchase agreements with carrying values of \$4,729,192,054 as of December 31, 2016 and \$5,130,020,438 as of December 31, 2015. As of December 31, 2016, the maturities of these agreements ranged from January 5, 2017 through March 2, 2017, and the interest rates ranged from 0.8% to 1.0%. The outstanding amounts were collateralized by cash and bonds with a carrying value of \$4,735,615,498 as of December 31, 2016 and bonds with a carrying value of \$5,134,682,340 as of December 31, 2015.

- (2) The Company has not accepted collateral for the years ended December 31, 2016 or 2015 that is permitted by contract or custom to sell or repledge.
- (3) The Company does not have any securities lending transactions administered by an affiliated agent.
- (4) The Company does not reinvest cash collateral or securities collateral.
- (5) The Company has not accepted collateral related to repurchase agreements or securities lending.
- (6) The Company does not have any securities lending transactions that extend beyond one year.

f. Real estate:

- (1) There were no impairments on real estate for the years ended December 31, 2016 and 2015. Fair value is generally estimated using the present value of expected future cash flows discounted at a rate commensurate with the underlying risks. The Company also obtains external appraisals for a rotating selection of properties annually. If an external appraisal is not obtained, an internal appraisal is performed.
- (2) Properties are acquired and managed for net income growth and increasing value. Upon management's approval for the sale of a property it is classified as held for sale.
  - a. Refer to Note 5f. "Real estate" (2)b. for information on the Company's real estate investments.
  - b. Gains or losses recognized on the sale of real estate are presented in the Summary of Operations, line 34. Net realized capital gains (losses).

In 2016, one office property and one industrial property were transferred to held for sale and sold in 2016, with proceeds of \$56,675,851 and a gain of \$15,530,118. Additionally, seven single family residences were acquired and classified as held for sale under an employee relocation program for a total of 11 properties. Of these residences, nine were sold for a net loss of \$677,320. As of December 31, 2016, the Company held two single family residences classified as held for sale.

In 2015, one office property was transferred to held for sale and sold in 2015, with proceeds of \$100,075,310, and a gain of \$48,839,690. Additionally, five single family residences were acquired and classified as held for sale under an employee relocation program for a total of six properties. Of these residences, two were sold for a net loss of \$182,604. As of December 31, 2015, the Company held four single family residences classified as held for sale.

- (3) The Company did not experience changes to a plan of sale in 2016 or 2015.
- (4) The Company did not engage in retail land sales in 2016 or 2015.
- (5) The Company did not hold real estate investments with participating mortgage loan features in 2016 or 2015.

g. Low income housing tax credit properties:

- (1) LIHTC investments currently have unexpired tax credits which range from one to ten years and have an initial 15-year holding period requirement.
- (2) There are no LIHTC investments subject to regulatory review for the years ended December 31, 2016 or 2015.
- (3) Aggregate LIHTC investments did not exceed 10% of total admitted assets for the years ended December 31, 2016 or 2015.
- (4) LIHTC investments had a carrying value of \$325,163,157 as of December 31, 2016 and \$287,891,818 as of December 31, 2015.
- (5) The Company recognized tax benefits from LIHTC investments of \$41,158,452 in 2016 and \$39,748,191 in 2015.
- (6) For determining impairments in partnerships that generate LIHTC, the Company uses the present value of all future benefits, the majority of which are tax credits, discounted at a risk-free rate ranging from 0.7% for future benefits of two years to 2.6% for future benefits of ten or more years, and compares the result to its current carrying value. OTTI for LIHTC investments for the years ended December 31, 2016 and 2015 were as follows:

	Years Ended	
	December 31,	
	2016	2015
Countryside Corporate Tax Credits X LP	\$ -	\$ 195,426
Countryside Corporate Tax Credit V	29,492	144,590
Total	\$ 29,492	\$ 340,016

- (7) There were no write-downs or reclassifications made during the years ended December 31, 2016 or 2015 due to forfeiture, ineligibility of tax credits or similar issues.

**NOTES TO FINANCIAL STATEMENTS**

h. Restricted assets:

(1) Restricted assets (including pledged):

Restricted Asset Category	Gross (Admitted & Nonadmitted) Restricted					Current Year					
	Current Year					6	7	8	9	Percentage	
	1	2	3	4	5					10	11
	Total General Account (G/A)	G/A Supporting S/A Activity (a)	Total Separate Account (S/A) Restricted Assets	S/A Assets Supporting G/A Activity (b)	Total (1 plus 3)	Total from Prior Year	Increase/ (Decrease) (5 minus 6)	Total Nonadmitted Restricted	Total Current Year Admitted Restricted (5 minus 8)	Gross (Admitted & Nonadmitted) Restricted to Total Assets (c)	Admitted Restricted to Total Admitted Assets (d)
a. Subject to contractual obligation for which liability is not shown	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Collateral held under security lending agreements	-	-	-	-	-	-	-	-	-	-	-
c. Subject to repurchase agreements	4,735,615,498	-	-	-	4,735,615,498	5,134,118,340	(398,502,842)	-	4,735,615,498	2.102%	2.117%
d. Subject to reverse repurchase agreements	-	-	-	-	-	-	-	-	-	-	-
e. Subject to dollar repurchase agreements	-	-	-	-	-	-	-	-	-	-	-
f. Subject to dollar reverse repurchase agreements	-	-	-	-	-	-	-	-	-	-	-
g. Placed under option contracts	-	-	-	-	-	-	-	-	-	-	-
h. Letter stock or securities restricted as to sale - excluding FHLB capital stock	512,860,645	-	-	-	512,860,645	594,322,915	(81,462,270)	-	512,860,645	0.228%	0.229%
i. FHLB capital stock	74,500,000	-	-	-	74,500,000	74,500,000	-	-	74,500,000	0.033%	0.033%
j. On deposit with states	8,582,961	-	-	-	8,582,961	8,361,229	221,732	-	8,582,961	0.004%	0.004%
k. On deposit with other regulatory bodies	-	-	-	-	-	-	-	-	-	-	-
l. Pledged collateral to FHLB (including assets backing funding agreements)	1,224,686,104	-	-	-	1,224,686,104	1,235,373,213	(10,687,109)	-	1,224,686,104	0.544%	0.548%
m. Pledged as collateral not captured in other categories	1,137,685,573	-	-	-	1,137,685,573	854,395,110	283,290,463	-	1,137,685,573	0.505%	0.509%
n. Other restricted assets	-	-	-	-	-	-	-	-	-	-	-
o. Total restricted assets	\$ 7,693,930,781	\$ -	\$ -	\$ -	\$ 7,693,930,781	\$ 7,901,070,807	\$ (207,140,026)	\$ -	\$ 7,693,930,781	3.415%	3.440%

(a) Subset of column 1

(b) Subset of column 3

(c) Column 5 divided by Asset Page, Column 1, Line 28

(d) Column 9 divided by Asset Page, Column 3, Line 28

**NOTES TO FINANCIAL STATEMENTS**

(2) Detail of Assets Pledged as Collateral Not Captured in Other Categories ( Contracts that Share Similar Characteristics, Such as Reinsurance and Derivatives Are Reported in the Aggregate)

Description of Assets	Gross (Admitted & Nonadmitted) Restricted								Percentage	
	Current Year					6	7	8	9	10
	1	2	3	4	5					
	Total General Account (G/A)	G/A Supporting S/A Activity (a)	Total Separate Account (S/A) Restricted Assets	S/A Assets Supporting G/A Activity (b)	Total (1 plus 3)	Total from Prior Year	Increase/ (Decrease) (5 minus 6)	Total Current Year Admitted Restricted	Gross (Admitted & Nonadmitted) Restricted to Total Assets (d)	Admitted Restricted to Total Admitted Assets (e)
Derivatives	\$ 700,176,223	\$ -	\$ -	\$ -	\$ 700,176,223	\$ 675,347,176	\$ 24,829,047	\$ 700,176,223	0.311%	0.313%
Futures	227,689,647	-	-	-	227,689,647	117,443,662	110,245,985	227,689,647	0.101%	0.102%
MBS Forwards	50,427,765	-	-	-	50,427,765	703,000	49,724,765	50,427,765	0.022%	0.023%
Repurchase Margin	159,391,938	-	-	-	159,391,938	60,901,272	98,490,666	159,391,938	0.071%	0.071%
Total (c)	\$ 1,137,685,573	\$ -	\$ -	\$ -	\$ 1,137,685,573	\$ 854,395,110	\$ 283,290,463	\$ 1,137,685,573	0.505%	0.509%

(a) Subset of column 1

(b) Subset of column 3

(c) Total Line for Column 1 through 7 should equal 5H (1) in Columns 1 through 7 respectively and Total Line for Columns 8 through 10 should equal 5H (1) Columns 9 through 11 respectively

(d) Column 5 divided by Asset Page, Column 1, Line 28

(e) Column 9 divided by Asset Page, Column 3, Line 28

(3) Detail of Other Restricted Assets (Contracts that Share Similar Characteristics, Such as Reinsurance and Derivatives, Are Reported in the Aggregate)

Description of Assets	Gross (Admitted & Nonadmitted) Restricted							Percentage		
	Current Year					6	7	8	9	10
	1	2	3	4	5					
	Total General Account (G/A)	G/A Supporting S/A Activity (a)	Total Separate Account (S/A) Restricted Assets	S/A Assets Supporting G/A Activity (b)	Total (1 plus 3)	Total from Prior Year	Increase/ (Decrease) (5 minus 6)	Total Current Year Admitted Restricted	Gross (Admitted & Nonadmitted) Restricted to Total Assets (d)	Admitted Restricted to Total Admitted Assets (e)
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	% -	% -
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
*Total (c)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	% -	% -

(a) Subset of column 1

(b) Subset of column 3

(c) Total Line for Columns 1 through 7 should equal 5H(1)mn Columns 1 through 7 respectively and Total Line for Columns 8 through 10 should equal 5H(1)mn Columns 9 through 11 respectively

(d) Column 5 divided by Asset Page, Column 1, Line 28

(e) Column 9 divided by Asset Page, Column 3, Line 28

**NOTES TO FINANCIAL STATEMENTS**

(4) Collateral Received and Reflected as Assets Within the Reporting Entity's Financial Statements

Collateral Assets	1 Book/Adjusted Carrying Value (BACV)	2 Fair Value	3 % of BACV Total Assets (Admitted and Nonadmitted)*	4 % of BACV to Total Admitted Assets **
a. Cash	\$ 2,839,407,087	\$ 2,839,407,087	1.741 %	1.759 %
b. Schedule D, Part 1	-	-	- %	- %
c. Schedule D, Part 2, Section 1	-	-	- %	- %
d. Schedule D, Part 2, Section 2	-	-	- %	- %
e. Schedule B	-	-	- %	- %
f. Schedule A	-	-	- %	- %
g. Schedule BA, Part 1	-	-	- %	- %
h. Schedule DL, Part 1	-	-	- %	- %
i. Other	-	-	- %	- %
j. Total Collateral Assets (a+b+c+d+e+f+g+h+i)	\$ 2,839,407,087	\$ 2,839,407,087	1.741%	1.759%

\* Column 1 divided by Asset Page, Line 26 (Column 1)

\*\* Column 1 divided by Asset Page, Line 26 (Column 3)

	1 Amount	2 % of Liability to Total Liabilities*
k. Recognized Obligation to Return Collateral Asset	\$ -	- %

\* Column 1 divided by Liability Page, Line 26 (Column 1)

i. Working capital finance investments: The Company did not invest in working capital finance investments.

j. Offsetting and netting of assets and liabilities: The Company reports derivative and repurchase agreement assets and liabilities as gross in the financial statements without offsetting.

k. Structured notes:

A structured note is a direct debt issuance by a corporation, municipality, or government entity, ranking pari-passu with the issuer's other debt issuance of equal seniority where either: (a) the coupon and/or principal payments are linked, in whole or in part, to prices or payment streams from index or indices, or assets deriving their value from other than the issuer's credit quality, or (b) the coupon and/or principal payments are leveraged by a formula that is different from either a fixed coupon, or a non-leveraged floating rate coupon linked to an interest rate index, including but not limited to the London Interbank Offered Rate (LIBOR) or the prime rate. As structured notes are issuer obligations without a trust, they are within the scope of SSAP No. 26, "Bonds, Excluding Loan-backed and Structured Securities" (SSAP No. 26). Structured notes are different than the asset backed structured securities, which are accounted for under SSAP No. 43R, "Revised - Loan-Backed and Structured Securities" (SSAP No. 43R), as they lack either a trust or assets backing them. The disclosure below allows regulators to assess the volume of activity in structured notes and to determine whether additional accounting or reporting revisions, such as valuation and risk-based capital, are needed. To satisfy this request, the Company is required to separately identify structured notes, on a CUSIP basis and provide information by CUSIP for actual cost, fair value, book/adjusted carrying value, and whether the structured note is a mortgage-referenced security. The following sets forth the actual cost, fair value and carrying value of structured notes as of December 31, 2016:

CUSIP Identification	Actual Cost	Fair Value	Book / Adjusted Carrying Value	Mortgage-Referenced Security (YES/NO)
30711XAW4	\$ 188,852	\$ 188,884	\$ 188,852	YES
30711XBE3	4,319,087	4,327,225	4,319,087	YES
3137G0EQ8	3,202,928	3,205,007	3,202,928	YES
3137G0HQ5	5,533,136	5,547,882	5,533,136	YES
391164AF7	8,467,560	8,263,677	8,370,694	NO
912810FR4	4,944,283	6,213,779	4,872,040	NO
912810PS1	1,874,118	2,667,948	1,885,616	NO
912810RF7	367,053,100	395,398,022	365,901,914	NO
912828GD6	1,881,627	2,277,735	1,940,021	NO
912828GX2	1,982,647	2,089,872	1,818,023	NO
TT3256233	1,262,834	1,238,400	1,268,910	NO
Total	\$ 400,710,173	\$ 431,418,430	\$ 399,301,221	XXX

**NOTES TO FINANCIAL STATEMENTS**

## I.5\* Securities

Investment	Number of 5* Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	33	24	295,630,424	270,756,521	298,894,001	254,495,598
(2) LB&SS - AC	-	-	-	-	-	-
(3) Preferred Stock - AC	2	-	12,642,000	-	13,678,407	-
(4) Preferred Stock - FV	-	-	-	-	-	-
(5) Total (1+2+3+4)	35	24	\$308,272,424	\$270,756,521	\$312,572,408	\$254,495,598

AC - Amortized Cost FV - Fair Value

**Note 6 – Joint Ventures, Partnerships and Limited Liability Companies**

- The Company did not have any individual investment in joint ventures, partnerships or LLCs exceeding 10% of admitted assets for the years ended December 31, 2016 and 2015.
- The accumulated unrealized losses are realized when they are not expected to be recovered. The Company recognized \$90,541,358 in 2016 and \$70,366,056 in 2015 in impairments on its investments in joint ventures, partnerships and LLCs.

Refer to Note 1c. "Accounting policy" (14) for information on the Company's policy for determining OTTI.

**Note 7 – Investment Income**

- Accrued investment income consists primarily of interest and dividends. Interest is recognized on an accrual basis and dividends are recorded as earned on the ex-dividend date.
- The total amount of due and accrued investment income excluded from surplus was \$5,059,678 for the year ended December 31, 2016 and \$14 for the year ended December 31, 2015.

**Note 8 – Derivative Instruments**

- The Company's principal derivative market risk exposures are interest rate risk, which includes the impact of inflation, and credit risk. Interest rate risk pertains to the change in fair value of the derivative instruments as market interest rates move. The Company is exposed to credit-related losses in the event of nonperformance by counterparties to derivative financial instruments. To minimize credit risk for bilateral transactions (individual contracts entered between the Company and a counterparty), the Company and its derivative counterparties generally enter into master netting agreements that allow the use of credit support annexes and require collateral to be posted in the amount owed under each transaction, subject to certain minimums. For over the counter cleared derivative transactions between the Company and a counterparty, the parties enter into a series of master netting and other agreements that govern, among other things, clearing and collateral requirements. These transactions are cleared through a clearinghouse and each derivative counterparty is only exposed to the default risk of the clearinghouse. Certain interest rate swaps and credit default swaps are considered cleared transactions. These cleared transactions require initial and daily variation margin collateral postings. These same agreements allow for contracts in a positive position, in which amounts are due to the Company, to be offset by contracts in a negative position. This right of offset, combined with collateral obtained from counterparties, reduces the Company's credit exposure.
- The Company uses derivative financial instruments in the normal course of business to manage risks, primarily to reduce currency, interest rate and duration imbalances determined in asset/liability analyses. The Company also uses a combination of derivatives and fixed income investments to create synthetic investments. These synthetic investments are created when they are economically more attractive than the actual instrument or when similar instruments are unavailable. Synthetic investments are created either to hedge and reduce the Company's credit exposure or to create an investment in a particular asset. The Company held synthetic investments with a notional amount of \$12,083,100,000 as of December 31, 2016 and \$10,330,100,000 as of December 31, 2015. Of these amounts, \$10,739,000,000 as of December 31, 2016 and \$9,986,000,000 as of December 31, 2015, were considered replicated asset transactions as defined under statutory accounting principles as the result of pairing of a long derivative contract with cash instruments.

The Company's derivative strategy employs a variety of derivative financial instruments, including: interest rate, currency, equity, bond, and credit default swaps; options; forward contracts and financial futures. Investment risk is assessed on a portfolio basis and individual derivative financial instruments are not generally designated in hedging relationships; therefore, as allowed by statutory accounting practices, the Company intentionally has not applied hedge accounting.

Under interest rate swaps, the Company agrees, at specified intervals, to an exchange of variable rate and fixed rate interest payments calculated by reference to an agreed upon notional principal amount. Typically, no cash is exchanged at the outset of the contract and no principal payments are made by either party. Cash is paid or received based on the terms of the swap agreement. Interest rate swaps are primarily used to more closely match the cash flows of assets and liabilities. Interest rate swaps are also used to mitigate changes in the value of assets anticipated to be purchased and other anticipated transactions and commitments. A net realized loss on closed contracts of \$1,605,158 and a net unrealized loss on the mark-to-market of open contracts of \$65,149,983 was recorded for the year ended December 31, 2016. A net realized loss on closed contracts of \$187,039,037 and a net unrealized loss on the mark-to-market of open contracts of \$93,494,240 was recorded for the year ended December 31, 2015.

Under currency swaps, the Company agrees to an exchange of principal denominated in two different currencies at current rates, under an agreement to repay the principal at a specified future date and rate. The Company uses currency swaps for the purpose of managing currency exchange risks in its assets and liabilities.

Credit default swaps involve a transfer of the credit risk of fixed income instruments from one party to another in exchange for periodic premium payments. The buyer of the credit default swap receives credit protection, whereas the seller of the swap provides protection for the credit worthiness of the underlying security. A credit default swap transfers the risk of default from the buyer of the swap to the seller. If a specified credit event occurs, as defined by the agreement, the seller is obligated to pay the counterparty the contractually agreed upon amount and receives in return the underlying security in an amount equal to the notional value of the credit default swap. A credit event is generally defined as default on contractually obligated interest or principal payments or bankruptcy.

**NOTES TO FINANCIAL STATEMENTS**

The Company does not sell credit default swaps as a participant in the credit insurance market. The Company does, however, use credit default swaps as part of its investment management process. The Company buys credit default swaps as an efficient means to reduce credit exposure to particular issuers or sectors in the Company's investment portfolio. The Company sells credit default swaps in order to create synthetic investment positions that enhance the return on its investment portfolio by providing comparable exposure to fixed income securities that might not be available in the primary market. A net realized gain on closed contracts of \$15,806,217 and a net unrealized gain on mark-to-market of open contracts of \$2,060,258 was recorded for the year ended December 31, 2016. A net realized gain on closed contracts of \$9,427,235 and a net unrealized loss on mark-to-market of open contracts of \$964,144 was recorded for the year ended December 31, 2015.

Options grant the purchaser the right to buy or sell a security or enter a derivative transaction at a stated price within a stated period. The Company's option contracts have terms of up to 15 years. A swaption is an option to enter an interest rate swap to either receive or pay a fixed rate at a future date. The Company purchases these options for the purpose of managing interest rate risks in its assets and liabilities.

The Company adopted a clearly defined hedging strategy (CDHS) to enable the Company to incorporate currently held hedges in RBC calculations. The CDHS is used to significantly mitigate the impact that movements in capital markets have on the liabilities associated with annuity guarantees. The hedge portfolio consists mainly of interest rate swaps, equity swaps, interest rate swaptions and equity futures, and provides protection in the stress scenarios under which RBC is calculated. The hedge portfolio has offsetting impacts relative to the total asset requirement for RBC and surplus for guaranteed minimum death benefits (GMDB) and variable annuity guaranteed living benefits.

The Company utilizes certain other agreements including forward contracts and financial futures. Currency forwards are contracts in which the Company agrees with other parties to exchange specified amounts of identified currencies at a specified future date. Typically, the exchange rate is agreed upon at the time of the contract. In addition, the Company also uses "to be announced" forward contracts (TBAs) to hedge interest rate risk and participate in the MBS market in an efficient and cost effective way. Typically, the price is agreed upon at contract inception and payment is made at a specified future date. The Company usually does not purchase TBAs with settlement by the first possible delivery date and thus accounts for these TBAs as derivatives. TBAs that settle on the first possible delivery date are accounted for as bonds. The Company's futures contracts are exchange traded and have credit risk. Margin requirements are met with the deposit of securities. Futures contracts are generally settled with offsetting transactions. Forward contracts and financial futures are used by the Company to reduce exposures to various risks including interest rates and currency rates.

Net collateral pledged by the counterparties was \$3,273,523,594 as of December 31, 2016 and \$2,963,852,754 as of December 31, 2015. The Company had the right to rehypothecate or repledge securities totaling \$998,383,504 of the \$3,273,523,594 as of December 31, 2016 and \$1,249,243,046 of the \$2,963,852,754 as of December 31, 2015 of net collateral pledged by counterparties. There were no securities rehypothecated to other counterparties as of December 31, 2016 and \$22,994,139 as of December 31, 2015. In the event of default the full market value exposure at risk in a net gain position, net of offsets and collateral, was \$249,929,781 as of December 31, 2016 and \$267,047,560 as of December 31, 2015. The statutory net amount at risk, defined as net collateral pledged and statement values excluding accrued interest, was \$747,018,816 as of December 31, 2016 and \$666,984,500 as of December 31, 2015. The Company regularly monitors counterparty credit ratings, derivative positions, valuations and the value of collateral posted to ensure counterparties are credit-worthy and the concentration of exposure is minimized. The Company monitors its derivative credit exposure as part of its overall risk management program.

- c. Changes in the fair value of these contracts other than interest rate swaps associated with replicated assets are recorded as unrealized gains or losses in surplus. Gains and losses realized on the termination, closing, or assignment of contracts are recorded as realized capital gains or losses. Amounts receivable and payable are accrued.
- d. No unrealized gains or losses recognized on derivatives were excluded from the assessment of effectiveness for the years ended December 31, 2016 or 2015, since the Company has decided not to apply hedge accounting. The Company uses portfolio hedging as a risk mitigation factor. The Company assesses the derivatives' effectiveness to hedge the sensitivity of the net asset and liability portfolio to interest and volatility movements in the context of the current market environment.
- e. The Company uses portfolio hedging as a risk mitigation factor, which does not qualify for hedge accounting.
- f. The Company does not account for derivatives as cash flow hedges of a forecasted transaction.

**NOTES TO FINANCIAL STATEMENTS****Note 9 – Income Taxes**

A. The Company provides for deferred income taxes based on an admissibility limitation of 15% of surplus and a three year reversal/realization period.

1. The net DTA or net deferred tax liability (DTL) recognized in the Company's assets, liabilities and surplus is as follows:

	December 31, 2016		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 3,252,456,885	\$ 617,273,519	\$ 3,869,730,404
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	3,252,456,885	617,273,519	3,869,730,404
(d) DTAs nonadmitted	44,391,726	-	44,391,726
(e) Subtotal net admitted DTA	3,208,065,159	617,273,519	3,825,338,678
(f) Total gross DTLs	1,669,579,186	549,706,556	2,219,285,742
(g) Net admitted DTA(L)	<u>\$ 1,538,485,973</u>	<u>\$ 67,566,963</u>	<u>\$ 1,606,052,936</u>
	December 31, 2015		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 3,023,733,143	\$ 381,565,685	\$ 3,405,298,828
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	3,023,733,143	381,565,685	3,405,298,828
(d) DTAs nonadmitted	-	-	-
(e) Subtotal net admitted DTA	3,023,733,143	381,565,685	3,405,298,828
(f) Total gross DTLs	1,658,493,244	448,274,516	2,106,767,760
(g) Net admitted DTA(L)	<u>\$ 1,365,239,899</u>	<u>\$ (66,708,831)</u>	<u>\$ 1,298,531,068</u>
	Change		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 228,723,742	\$ 235,707,834	\$ 464,431,576
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	228,723,742	235,707,834	464,431,576
(d) DTAs nonadmitted	44,391,726	-	44,391,726
(e) Subtotal net admitted DTA	184,332,016	235,707,834	420,039,850
(f) Total gross DTLs	(11,085,942)	(101,432,040)	(112,517,982)
(g) Net admitted DTA(L)	<u>\$ 173,246,074</u>	<u>\$ 134,275,794</u>	<u>\$ 307,521,868</u>

**NOTES TO FINANCIAL STATEMENTS**

2. The amount of adjusted gross DTA admitted under each component and the resulting change by tax character are as follows:

	December 31, 2016		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ 486,402,862	\$ 130,693,513	\$ 617,096,375
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	988,956,561	-	988,956,561
1. Adjusted gross DTAs expected to be realized following the balance sheet date	988,956,561	-	988,956,561
2. Adjusted gross DTAs allowed per limitation threshold	2,071,223,450	-	2,071,223,450
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	1,732,705,736	486,580,006	2,219,285,742
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 3,208,065,159</u>	<u>\$ 617,273,519</u>	<u>\$ 3,825,338,678</u>

	December 31, 2015		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ 47,931,780	\$ 187,607,991	\$ 235,539,771
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	1,062,991,297	-	1,062,991,297
1. Adjusted gross DTAs expected to be realized following the balance sheet date	1,062,991,297	-	1,062,991,297
2. Adjusted gross DTAs allowed per limitation threshold	2,023,772,523	-	2,023,772,523
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	1,912,810,066	193,957,694	2,106,767,760
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 3,023,733,143</u>	<u>\$ 381,565,685</u>	<u>\$ 3,405,298,828</u>

	Change		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ 438,471,082	\$ (56,914,478)	\$ 381,556,604
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	(74,034,736)	-	(74,034,736)
1. Adjusted gross DTAs expected to be realized following the balance sheet date	(74,034,736)	-	(74,034,736)
2. Adjusted gross DTAs allowed per limitation threshold	47,450,927	-	47,450,927
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	(180,104,330)	292,622,312	112,517,982
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 184,332,016</u>	<u>\$ 235,707,834</u>	<u>\$ 420,039,850</u>

**NOTES TO FINANCIAL STATEMENTS**

3. The Company's total realization threshold limitations are as follows:

	December 31,	
	2016	2015
(a) Ratio percentage used to determine recovery period and threshold limitation amount	869%	926%
(b) Amount of adjusted capital and surplus used to determine recovery period and threshold limitation in 2(b)2 above.	\$ 13,808,156,331	\$ 13,645,646,899

4. The ultimate realization of DTAs depends on the generation of future taxable income during the periods in which the temporary differences are deductible. Management considers the scheduled reversal of DTLs (including the impact of available carryback and carryforward periods), projected taxable income and tax-planning strategies in making this assessment. The impact of tax-planning strategies is as follows:

	December 31, 2016	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 3,252,456,885	\$ 617,273,519
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(g)	\$ 1,538,485,973	\$ 67,566,963
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	67%	100%

	December 31, 2015	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 3,023,733,143	\$ 381,565,685
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(g)	\$ 1,365,239,899	\$ (66,708,831)
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	67%	-%

	Change	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 228,723,742	\$ 235,707,834
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(g)	\$ 173,246,074	\$ 134,275,794
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	0%	100%
(b) Does the Company's tax planning strategies include the use of reinsurance?	Yes ___	No <u>X</u>

B. The Company does not have any deferred tax liabilities not recognized.

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**NOTES TO FINANCIAL STATEMENTS**


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C. The provision for current tax (benefit) expense on earnings is as follows:

1.	Years Ended December 31,		
	2016	2015	Change
(a) Federal	\$ (332,886,947)	\$ (159,279,425)	\$ (173,607,522)
(b) Foreign	6,468,047	6,003,883	464,164
(c) Subtotal	<u>(326,418,900)</u>	<u>(153,275,542)</u>	<u>(173,143,358)</u>
(d) Federal income tax on net capital gains	(39,600,188)	150,919,647	(190,519,835)
(e) Utilization of capital loss carry-forwards	-	-	-
(f) Other	-	-	-
(g) Federal and foreign income taxes incurred	<u>\$ (366,019,088)</u>	<u>\$ (2,355,895)</u>	<u>\$ (363,663,193)</u>

**NOTES TO FINANCIAL STATEMENTS**

The tax effects of temporary differences that give rise to significant portions of the DTAs and DTLs are as follows:

	2016	December 31, 2015	Change
2. Deferred Tax Assets:			
(a) Ordinary			
(1) Discounting of unpaid losses	\$ -	\$ -	\$ -
(2) Unearned premium reserve	-	-	-
(3) Policyholder reserves	980,349,885	965,097,802	15,252,083
(4) Investments	183,219,354	188,152,871	(4,933,517)
(5) Deferred acquisition costs	699,674,434	644,431,867	55,242,567
(6) Policyholder dividends accrual	341,777,565	374,107,201	(32,329,636)
(7) Fixed assets	-	-	-
(8) Compensation and benefits accrual	-	-	-
(9) Pension accrual	290,907,069	266,550,326	24,356,743
(10) Receivables - nonadmitted	-	-	-
(11) Net operating loss carry-forward	-	-	-
(12) Tax credit carry-forward	-	-	-
(13) Other	756,528,578	585,393,076	171,135,502
(14) Subtotal	<u>3,252,456,885</u>	<u>3,023,733,143</u>	<u>228,723,742</u>
(b) Statutory valuation allowance adjustment	-	-	-
(c) Nonadmitted	<u>44,391,726</u>	-	<u>44,391,726</u>
(d) Admitted ordinary DTAs (2a14 - 2b - 2c)	<u>3,208,065,159</u>	<u>3,023,733,143</u>	<u>184,332,016</u>
(e) Capital			
(1) Investments	617,273,519	381,565,685	235,707,834
(2) Net capital loss carry-forward	-	-	-
(3) Real estate	-	-	-
(4) Other	-	-	-
(5) Subtotal	<u>617,273,519</u>	<u>381,565,685</u>	<u>235,707,834</u>
(f) Statutory valuation allowance adjustment	-	-	-
(g) Nonadmitted	-	-	-
(h) Admitted capital DTAs (2e5 - 2f - 2g)	<u>617,273,519</u>	<u>381,565,685</u>	<u>235,707,834</u>
(i) Admitted DTAs (2d + 2h)	<u>3,825,338,678</u>	<u>3,405,298,828</u>	<u>420,039,850</u>
3. Deferred Tax Liabilities:			
(a) Ordinary			
(1) Investments	779,996,954	857,545,366	(77,548,412)
(2) Fixed Assets	165,321,991	157,857,445	7,464,546
(3) Deferred and uncollected premium	318,530,014	299,662,815	18,867,199
(4) Policyholder reserves	73,896,758	12,296,758	61,600,000
(5) Other	331,833,469	331,130,860	702,609
(6) Subtotal	<u>1,669,579,186</u>	<u>1,658,493,244</u>	<u>11,085,942</u>
(b) Capital			
(1) Investments	549,706,556	448,274,516	101,432,040
(2) Real estate	-	-	-
(3) Other	-	-	-
(4) Subtotal	<u>549,706,556</u>	<u>448,274,516</u>	<u>101,432,040</u>
(c) Total DTLs (3a6 + 3b4)	<u>2,219,285,742</u>	<u>2,106,767,760</u>	<u>112,517,982</u>
4. Net DTA(L) (2i - 3c)	<u>\$ 1,606,052,936</u>	<u>\$ 1,298,531,068</u>	<u>\$ 307,521,868</u>

## NOTES TO FINANCIAL STATEMENTS

The change in net deferred income taxes is comprised of the following:

	Years Ended December 31,	
	2016	2015
(1) Net DTA(L)	\$ 351,913,594	\$ 339,700,981
Less: Items not recorded in the change in net deferred income taxes:	-	-
(2) Tax-effect of unrealized gains/(losses)	(58,309,334)	(108,592,164)
(3) Tax-effect of changes from acquisitions/transfers	(46,222,316)	-
(4) Change in net deferred income taxes	\$ 247,381,944	\$ 231,108,817

- D. The components of federal and foreign income tax on operating items are recorded on the Summary of Operations and Capital and Surplus Account and are different from that which would be obtained by applying the prevailing federal income tax rate to operating income before taxes. The significant items causing this difference are as follows:

	Years Ended December 31,	
	2016	2015
(1) Provision computed at statutory rate	\$ (183,525,832)	\$ 101,027,071
(2) Nonadmitted assets	(98,663,785)	(5,562,525)
(3) Foreign governmental income taxes	6,468,048	3,675,011
(4) Expense items	16,200,988	25,289,762
(5) Investment items	(321,933,088)	(325,689,300)
(6) Tax credits	(47,671,614)	(51,761,832)
(7) Change in reserve valuation basis	26,198,935	23,285,782
(8) Other	(10,474,684)	(3,728,681)
Total statutory income tax expense (benefit)	\$ (613,401,032)	\$ (233,464,712)
(9) Federal and foreign income tax benefit	\$ (366,019,088)	\$ (2,355,895)
(10) Change in net deferred income taxes	(247,381,944)	(231,108,817)
Total statutory income tax expense (benefit)	\$ (613,401,032)	\$ (233,464,712)

- E. (1) As of December 31, 2016, the Company had no net operating or capital loss carryforwards to include in deferred income taxes. The Company has no tax credit carryforwards included in deferred taxes.
- (2) The Company received refunds of \$352,810,012 in 2016 and paid federal income taxes of \$234,355,069 in 2015.
- (3) As of December 31, 2016 and 2015, the Company did not recognize any protective deposits as admitted assets.
- F. (1) The Company and its eligible U.S. subsidiaries are included in a consolidated U.S. federal income tax return. The Company and its subsidiaries and affiliates also file income tax returns in various states and foreign jurisdictions.
- (2) The Company and its eligible subsidiaries and certain affiliates (the Parties) have executed and are subject to a written tax allocation agreement (the Agreement). The Agreement sets forth the manner in which the total combined federal income tax is allocated among the Parties. The Agreement provides the Company with the enforceable right to recoup federal income taxes paid in prior years in the event of future net losses, which it may incur. Further, the Agreement provides the Company with the enforceable right to utilize its net losses carried forward as an offset to future net income subject to federal income taxes.
- G. (1) Companies are generally required to disclose unrecognized tax benefits, which are the tax effect of positions taken on their tax returns that may be challenged by the various taxing authorities, in order to provide users of financial statements more information regarding potential liabilities. The Company recognizes tax benefits and related reserves in accordance with existing SAP for liabilities, contingencies and impairments of assets.
- (2) On December 18, 2015, the Preventing Americans from Tax Hikes Act of 2015 (the PATH Act) was enacted and provides for a multi-year extension of this provision through 2019. The PATH Act extends 50% bonus depreciation to 2015 through 2017, it then phases down to 40% for 2018 and 30% for 2019. The extension of these tax provisions are not expected to have a material effect on the Company's financial position or liquidity.
- (3) The Internal Revenue Service (IRS) has completed its examination of the tax returns filed for years 2010 and prior. The IRS is currently auditing the years 2011 through 2013 and expects to conclude in early 2017. The Company does not expect a material change in its financial position or liquidity as a result of these audits.
- (4) The Company's litigation with the federal government regarding the timing of the deduction for certain policyholder dividends for tax years 1995 through 1997 was successfully concluded in 2015. The favorable effect of the decision in the U.S. Court of Federal Claims was reflected in the Company's financial statements in prior years.

**NOTES TO FINANCIAL STATEMENTS****Note 10 – Information Concerning Parent, Subsidiaries and Affiliates**

a-c. The Company provides revolving credit facilities to MassMutual Asset Finance, LLC (MMAF) and Jefferies Finance LLC. During 2016, MMAF borrowed \$1,647,597,105 and repaid \$1,135,653,750 under the MMAF facility. During 2016, Jefferies Finance LLC borrowed \$183,060,000 and repaid \$159,750,000 under the Jefferies Finance LLC facility. Refer to Note 14 “Liabilities, Contingencies and Assessments” for additional information regarding the credit facilities. See also Schedule Y for subsidiaries and controlled affiliates (SCAs) activity.

On October 1, 2016, the Company purchased MassMutual International LLC (MMI) from MMHLLC for \$3,904,116,608, which represented MMHLLC’s carrying value of MMI. The Company purchased MMI with cash and invested assets with a carrying value of \$3,787,525,884, net of deferred tax, and deferred a \$116,590,724 gain on the transfer of these assets, as this transaction was considered a related party transaction. This purchase was part of the Company’s execution of its’ operating strategy and segregated its foreign insurance subsidiaries from its asset manager subsidiaries.

Summarized below is certain U.S. GAAP financial information for MMI. The information prior to October 1, 2016 was also included in the operations of MMHLLC:

	As of and for the Years Ended December 31,	
	2016	2015
Total revenue	\$ 4,893,235,889	\$ 4,539,133,831
Net income	605,981,823	361,846,699
Assets	30,805,160,777	26,225,637,218
Liability	27,734,961,446	24,002,886,928
Member's equity	3,070,199,331	2,222,750,289

The MMI statutory carrying value was \$2,209,420,534 as of December 31, 2016. The MMI statutory carrying value was included in the value of MMHLLC as of December 31, 2015. The current fair value of MMI remains greater than its statutory carrying value.

- d. The Company reported \$68,885,409 as amounts due from subsidiaries and affiliates as of December 31, 2016 and \$54,081,461 as of December 31, 2015. The Company reported \$36,595,902 as amounts due to subsidiaries and affiliates as of December 31, 2016 and \$18,212,103 as of December 31, 2015. Terms generally require settlement of these amounts within 30 to 90 days.
- e. The Company has reinsurance agreements with its subsidiary, C.M. Life, and its indirect subsidiary, MML Bay State, including stop-loss, modified coinsurance (Modco) and yearly renewable term agreements on life insurance products. The Company also has coinsurance agreements with C.M. Life where the Company assumes substantially all of the premium on certain universal life policies.

The net amounts due to C.M. Life and MML Bay State were \$65,644,552 as of December 31, 2016 and \$49,410,007 as of December 31, 2015. These outstanding balances are due and payable with terms ranging from monthly to annually, depending on the agreement in effect.

The following summarizes the reinsurance transactions for these agreements:

	Years Ended December 31,	
	2016	2015
Premium assumed	\$ 53,073,290	\$ 56,586,300
Modco adjustments, included in fees and other income	9,330,809	15,069,413
Expense allowances on reinsurance assumed, included in fees and other expense	(20,674,723)	(21,181,030)
Policyholders' benefits	(108,599,305)	(97,294,608)
Experience refunds (paid) received	(241,615)	187,350

- f. The Company has management and service contracts and cost-sharing arrangements with various subsidiaries and affiliates where the Company, for a fee, will furnish a subsidiary or affiliate, as required, operating facilities, human resources, computer software development and managerial services. Fees from C.M. Life accounted for \$60,208,564 in 2016 and \$38,779,619 in 2015. Fees from MML Bay State accounted for \$8,874,070 in 2016 and \$8,999,163 in 2015.

The Company has agreements with its subsidiaries and affiliates, including OppenheimerFunds, Inc. (OFI), Barings LLC (Barings), and MM Investment Advisers, LLC, where the Company receives revenue for certain recordkeeping and other services that the Company provides to customers who select, as investment options, mutual funds managed by these affiliates.

The Company has agreements with its subsidiaries, Barings, Barings Real Estate Advisers, LLC (BREA), MML Investment Advisers LLC, MSI Financial Services, Inc. and OFI, which provide investment advisory services to the Company.

In June 2016, the Company purchased an affiliated entity from MMHLLC for \$485,836,619. This purchase was part of the Company’s execution of its’ operating strategy.

The following table summarizes the transactions between the Company and the related parties:

	Years Ended December 31,	
	2016	2015
Fee income:		
Management and service contracts and cost-sharing arrangements	\$ 309,725,308	\$ 252,881,728
Investment advisory income	23,037,219	24,076,101
Recordkeeping and other services	21,269,421	21,214,856
Fee expenses:		
Investment advisory services	302,748,057	270,406,826

**NOTES TO FINANCIAL STATEMENTS**

The Company's subsidiaries, Barings and BREA, invest a portion of their nonqualified compensation plan in guaranteed interest contracts with the Company. For the year ended December 31, 2016, the Company credited interest on deposits of \$3,546,076 to the Barings contract and \$1,678,046 to the BREA contract. For the year ended December 31, 2015, the Company credited interest on deposits of \$3,434,429 to the Barings contract and \$1,629,158 to the BREA contract.

The Company participates in variable annuity exchange programs with its subsidiary, C.M. Life (including MML Bay State) where certain variable annuity contract holders of the Company, C.M. Life or MML Bay State can make nontaxable exchanges of their contracts for enhanced variable annuity contracts of the Company or C.M. Life. The Company recorded premium income of \$289,147 in 2016 and \$1,892,453 in 2015 related to these exchange programs. The Company recorded surrender benefits of \$29,633 in 2016 and \$104,415 in 2015 related to these exchange programs. C.M. Life recorded premium income of \$29,633 in 2016 and \$104,415 in 2015, related to these exchange programs. C.M. Life recorded surrender benefits of \$289,147 in 2016 and \$1,892,453 in 2015, related to these exchange programs. The Company has an agreement with C.M. Life to compensate them or to be compensated for the lost revenue associated with the exchange of contracts that are within the surrender charge period. As a result of these exchanges, the Company did not pay any net commissions to C.M. Life as of December 31, 2016 or 2015.

In the normal course of business, the Company provides specified guarantees and funding to MMHLLC and certain of its subsidiaries. Refer to Note 14 "Liabilities, Contingencies and Assessments" for information on the Company's accounting policies regarding these related party commitments and information on the guarantees.

- g. Subsidiaries of MMHLLC and MMI are involved in litigation and investigations arising in the ordinary course of their business, which seek compensatory damages, punitive damages and equitable remedies. Although the Company is not aware of any actions or allegations that reasonably should give rise to a material adverse impact to the Company's financial position or liquidity, the outcome of litigation cannot be foreseen with certainty. It is the opinion of management that the ultimate resolution of these matters will not materially impact the Company's financial position or liquidity. However, the outcome of a particular proceeding may be material to the Company's Statutory Statements of Changes in Surplus for a particular period depending upon, among other factors, the size of the loss and the level of the Company's changes in surplus for the period.

The Company has no parent and is not directly or indirectly controlled by any other entity.

- h. The Company does not have an upstream intermediate entity or ultimate parent. Therefore, no amounts were deducted from the value of an upstream intermediate entity or ultimate parent owned, either directly or indirectly, via a downstream subsidiary, controlled or affiliated entity.
- i. As of December 31, 2016, the Company did not have an investment in SCAs exceeding 10% of admitted assets.
- j. In 2016, the Company recognized \$33,551 in impairment write-downs on its investments in affiliated bonds. The Company recognized \$36,808,081 in impairment write-downs on its investments in affiliated joint ventures, including partnerships and LLCs of SCAs. OTTI were determined based on internally developed models.

In 2015, the Company recognized \$15,415 in impairment write-downs on its investments in affiliated bonds. The Company recognized \$616,305 in impairment write-downs on its investments in affiliated joint ventures, including partnerships and LLCs of SCAs. OTTI were determined based on internally developed models.

In 2016 and 2015, the Company did not have any impairment write-downs on its investments in common stock of affiliates.

- k. The Company has no foreign insurance subsidiary whose value is calculated by adjusting annuity GAAP account value reserves using the Commissioners' Annuity Reserve Valuation Method and the related Actuarial Guidelines.
- l. The Company obtains audited financial statements of its downstream noninsurance holding company, MMHLLC.

**NOTES TO FINANCIAL STATEMENTS**

m. The following presents certain information for the Company's noninsurance SCA investments:

M. All SCA Investments

(1) Balance Sheet Value (Admitted and Nonadmitted) All SCAs (Except 8bi Entities):

SCA Entity	Percentage of SCA Ownership	Gross Amount	Admitted Amount	Nonadmitted Amount
<b>a. SSAP No. 97 8a Entities</b>				
None	-	\$ -	\$ -	\$ -
<b>b. SSAP No. 97 8b(ii) Entities</b>				
MassMutual Holding LLC	100.0	\$ 5,717,298,252	\$ 5,717,298,252	\$ -
MSC Holding Company, LLC	100.0	372,985,000	372,985,000	-
Babson Capital Global Umbrella	98.8	99,731,613	99,731,613	-
Babson Capital Global Umbrella	35.2	82,460,000	82,460,000	-
The MassMutual Trust Co, FSB	100.0	16,605,655	16,605,655	-
Cornerstone Global REIT Corp	92.3	19,707	19,707	-
MSI Financial Services, Inc.***	100.0	-	-	-
MassMutual International LLC (MMI)***	100.0	-	-	-
<b>Total SSAP No. 97 8b(ii) Entities</b>	XXXXXX	\$ 6,289,100,227	\$ 6,289,100,227	\$ -
<b>c. SSAP No. 97 8b(iii) Entities</b>				
None	-	\$ -	\$ -	\$ -
<b>d. SSAP No. 97 8b(iv) Entities</b>				
None	-	\$ -	\$ -	\$ -
<b>e. Total SSAP No. 97 8b Entities (except 8bi) (b+c+d)</b>	-	\$ 6,289,100,227	\$ 6,289,100,227	\$ -
<b>f. Aggregate Total (a+e)</b>	XXXXXX	\$ 6,289,100,227	\$ 6,289,100,227	\$ -

(2) NAIC Filing Response :

SCA Entity (Should be same entities as shown in M(1) above)	Type of NAIC Filing*	Date of Filing to the NAIC	NAIC Valuation Amount	NAIC Response Received Y/N	NAIC Disallowed Entities Valuation Method. Resubmission Required Y/N	Code**
<b>a. SSAP No. 97 8a Entities</b>						
<b>b. SSAP No. 97 8b(ii) Entities</b>						
MassMutual Holding LLC (57543#-11-8)	S2	8/2/2016	\$ 5,717,298,252	Y	N	I
MSC Holding Company, LLC (55367*10)	S2	6/20/2016	372,985,000	Y	N	I
Barings Emerging Markets Corporate Bond Fund (G0R5P5245)	S2	7/1/2016	99,731,613	Y	N	I
Barings Emerging Markets Local Debt Fund (G0R5P5740)	S2	7/1/2016	82,460,000	Y	N	I
The MassMutual Trust Co, FSB (57631@10)	S2	7/13/2016	16,605,655	Y	N	I
Cornerstone Global REIT Corp (21926@105)	S2	6/16/2016	19,707	Y	N	I
<b>Total SSAP No. 97 8b(ii) Entities</b>	XXXXXX	XXXXXX	\$ 6,289,100,227	XXXXXX	XXXXXX	XXXXXX
<b>c. SSAP No. 97 8b(iii) Entities</b>						
None	N/A	N/A	\$ -	N/A	N/A	N/A
<b>d. SSAP No. 97 8b(iv) Entities</b>						
None	N/A	N/A	\$ -	N/A	N/A	N/A
<b>e. Total SSAP No. 97 8b Entities (except 8bi) (b+c+d)</b>	XXXXXX	XXXXXX	\$ 6,289,100,227	XXXXXX	XXXXXX	XXXXXX
<b>f. Aggregate Total (a+e)</b>	XXXXXX	XXXXXX	\$ 6,289,100,227	XXXXXX	XXXXXX	XXXXXX

\* S1 - Sub-1, S2 - Sub-2 or RDF - Resubmission of Disallowed Filing

\*\* I - Immaterial or M - Material

<sup>1</sup> MSIFS was acquired October 1, 2016 from MassMutual Holding LLC and will file Sub-1 in 2017

<sup>2</sup> MMI was acquired July 1, 2016 and will file Sub-1 in 2017. Please refer to note 4c. *Common stocks - subsidiaries and affiliates* for information on the 2016 MMI acquisition.

## NOTES TO FINANCIAL STATEMENTS

The U.S. GAAP equity value of MMHLLC is \$10,591,769,897 and is \$3,070,199,331 for MMI as of December 31, 2016, which are higher than the statutory carrying values, presented as gross values, in the preceding table, as portions of the equity value are nonadmitted under statutory accounting principles. The current fair value of MMHLLC and MMI remain significantly greater than their statutory carrying values.

- n. The Company does not have any insurance SCAs for which the audited statutory equity reflects a departure from NAIC statutory accounting practices.

### Note 11 – Debt

- a. The Company had commercial paper outstanding with a carrying value and face amount of \$249,940,986 as of December 31, 2016 and \$249,961,873 as of December 31, 2015. The commercial paper issued in 2016 had interest rates ranging from 0.45% to 0.65% with maturity dates ranging from 1 to 48 days. There are no collateral requirements on the Company's outstanding commercial paper. The commercial paper does not include terms for reverse repurchase agreements.

Interest expense for the commercial paper was \$1,205,523 for the year ended December 31, 2016 and \$567,366 for the year ended December 31, 2015.

The Company has a \$1,000,000,000 five year credit facility, with a syndicate of lenders that can be used for general corporate purposes and to support commercial paper borrowings. The facility has an upside option for an additional \$500,000,000. The terms of the credit facility provide for, among other provisions, covenants pertaining to liens, fundamental changes, transactions with affiliates and adjusted statutory surplus. As of and for the years ended December 31, 2016 and 2015, the Company was in compliance with all covenants under the credit facility. For the years ended December 31, 2016 and 2015, there were no draws on the credit facilities. Credit facility fees were less than \$1,000,000 for the years ended December 31, 2016 and 2015.

The Company held debt issued by MMHLLC that amounted to \$1,769,461,399 as of December 31, 2016 and \$2,068,195,497 as of December 31, 2015. The Company recorded interest income on MMHLLC debt of \$75,815,268 in 2016 and \$83,722,833 in 2015.

The Company did not have any capital notes or liability for borrowed money as of December 31, 2016 or 2015.

The Company did not have any debt that was considered to be extinguished by in-substance defeasance.

The Company did not set aside assets after the effective date of this statement solely for satisfying debt obligations.

The Company does not have any repurchase agreements as part of debt. See Note 5(E) for information on the Company's repurchase agreements.

- b. Federal Home Loan Bank agreements

- (1) The Company is a member of the Federal Home Loan Bank of Boston (FHLB Boston). Through its membership, the Company has conducted business activity (borrowings) with the FHLB Boston. The Company uses these funding agreements with the FHLB Boston in an investment spread strategy, consistent with its other investment spread operations. The Company has determined the actual maximum borrowing capacity as \$2,000,000,000. The Company's unused capacity was \$896,116,171 as of December 31, 2016.

- (2) FHLB Boston capital stock

- a. Aggregate totals:

		December 31, 2016		
		1 Total 2+3	2 General Account	3 Separate Account
1. Current Year:				
(a) Membership stock - Class A	\$	-	\$	-
(b) Membership stock - Class B		25,000,000	25,000,000	-
(c) Activity Stock		49,500,000	49,500,000	-
(d) Excess Stock		-	-	-
(e) Aggregate Total		\$ 74,500,000	\$ 74,500,000	\$ -
(f) Actual or Estimated Borrowing Capacity as Determined by the Insurer	\$	2,000,000,000	\$ 2,000,000,000	\$ -
2. Prior Year-end:				
(a) Membership stock - Class A	\$	-	\$	-
(b) Membership stock - Class B		25,000,000	25,000,000	-
(c) Activity Stock		49,500,000	49,500,000	-
(d) Excess Stock		-	-	-
(e) Aggregate Total		\$ 74,500,000	\$ 74,500,000	\$ -
(f) Actual or Estimated Borrowing Capacity as determined by the Insurer	\$	900,000,000	\$ 900,000,000	\$ -

**NOTES TO FINANCIAL STATEMENTS**

b. Membership Stock (Class A and B) Eligible and Not Eligible for Redemption:

Membership Stock	Years Ended December 31, 2016					
	1 Current Year Total	2 Not Eligible for Redemption	Eligible for Redemption			
			3 Less Than 6 Months	4 6 Months to Less Than 1 Year	5 1 to Less Than 3 Years	6 3 to 5 Years
1. Class A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2. Class B	25,000,000	25,000,000	-	-	-	-

(3) Collateral pledged to FHLB:

a. Amount pledged as of December 31, 2016:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,224,828,748	\$ 1,126,084,091	\$ 1,103,883,829

2. Current year general account:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,224,828,748	\$ 1,126,084,091	\$ 1,103,883,829

3. Current year separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ -	\$ -	\$ -

4. Prior year-end total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,237,454,703	\$ 1,108,805,989	\$ 1,103,891,028

b. Maximum amount pledged for the years ended December 31, 2016:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,234,077,139	\$ 1,126,695,711	\$ 1,107,803,111

2. Current year general account:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,234,077,139	\$ 1,126,695,711	\$ 1,107,803,111

3. Current year separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ -	\$ -	\$ -

4. Prior year-end total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,272,134,217	\$ 1,133,723,274	\$ 1,107,271,444

**NOTES TO FINANCIAL STATEMENTS**

## (4) Borrowing from FHLB:

## a. Amount:

## 1. Current year:

December 31, 2016

	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,103,883,829	1,103,883,829	-	1,103,883,829
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,103,883,829</u>	<u>\$ 1,103,883,829</u>	<u>\$ -</u>	<u>\$ 1,103,883,829</u>

## 2. Prior Year-end:

December 31, 2015

	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,103,891,028	1,103,891,028	-	1,103,891,028
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,103,891,028</u>	<u>\$ 1,103,891,028</u>	<u>\$ -</u>	<u>\$ 1,103,891,028</u>

## b. Maximum Amount:

Years Ended December 31, 2016

	1 Total 2+3	2 General Account	3 Separate Account
1. Debt	\$ -	\$ -	\$ -
2. Funding	1,107,803,111	1,107,803,111	-
3. Other	-	-	-
4. Aggregate	<u>\$ 1,107,803,111</u>	<u>\$ 1,107,803,111</u>	<u>\$ -</u>

## c. FHLB - Prepayment Obligations:

Does the company have prepayment obligations under the following arrangements (YES/NO)?
---

- |                       |     |
|-----------------------|-----|
| 1. Debt               | N/A |
| 2. Funding agreements | NO  |
| 3. Other              | N/A |

**Note 12 – Retirement Plans, Deferred Compensation, Postemployment Benefits and Compensated Absences and Other Postretirement Benefit Plans**

## a. Defined Benefit Plan

The Company has funded and unfunded noncontributory defined benefit pension plans that cover substantially all employees, agents and retirees. The qualified defined benefit plan includes a defined benefit formula and a cash balance formula. Participants earn benefits under the plan based on the defined benefit formula, the cash balance formula or a combination of both formulas as determined by their date of hire or rehire. Under the defined benefit formula, benefits are calculated based on final average earnings and length of service. Benefits under the cash balance formula are determined based on age, service and salary during the participants' careers.

The Company's policy is to fund qualified pension costs in accordance with the Employee Retirement Income Security Act of 1974. The Company contributed \$66,000,000 in 2016 and \$47,000,000 in 2015 to its qualified defined benefit plan.

The determination of the discount rate is based upon rates commensurate with current yields on high quality corporate bonds as of a December 31 measurement date (The Measurement Date). A spot yield curve is developed from this data that is used to determine the present value for the obligation. The projected plan cash flows are discounted to the Measurement Date based on the spot yield curve. A single discount rate is utilized to ensure the present value of the benefits cash flow equals the present value computed using the spot yield curve. A 25 basis point change in the discount rate results in approximately an \$81,000,000 change in the projected pension benefit obligation. The methodology includes producing a cash flow of annual accrued benefits. See section 8 of this Note, "Assumptions" for details on the discount rate.

A summary of assets, obligations and assumptions of the pension benefits, postretirement benefits, and special or contractual termination benefits per SSAP No. 11 are as follows using a December 31 measurement date:

## NOTES TO FINANCIAL STATEMENTS

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
(1) Change in benefit obligation:				
a. Pension Benefits				
1. Benefit obligation, beginning of year	\$	-	\$	2,675,141,521
2. Service cost		-	100,249,462	71,531,052
3. Interest cost		-	113,086,607	99,012,417
4. Contributions by plan participants		-	-	-
5. Actuarial (gains) losses		-	22,724,468	35,491,618
6. Foreign currency exchange rates		-	-	-
7. Benefits paid		-	(125,940,146)	(111,413,174)
8. Plan amendments		-	-	-
9. Business combinations, divestitures, curtailments, settlements, and special termination benefits		-	-	-
10. Benefit obligation, end of year	\$	-	\$	2,785,261,912

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
b. Postretirement Benefits				
1. Benefit obligation, beginning of year	\$	-	\$	305,316,000
2. Service cost		-	11,080,265	8,972,000
3. Interest cost		-	11,963,716	13,658,000
4. Contributions by plan participants		-	1,140,435	8,903,000
5. Actuarial (gains) losses		-	(14,523,041)	(12,604,000)
6. Foreign currency exchange rates		-	-	-
7. Benefits paid		-	(15,570,350)	(27,505,000)
8. Plan amendments		-	-	(97,905,000)
9. Business combinations, divestitures, curtailments, settlements, and special termination benefits		-	40,700,000	-
10. Benefit obligation, end of year	\$	-	\$	340,107,025

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
c. Special or contractual benefits per SSAP #11				
1. Benefit obligation, beginning of year	\$	-	\$	49,641,000
2. Service cost		-	7,663,065	6,468,000
3. Interest cost		-	1,834,290	1,617,000
4. Contributions by plan participants		-	-	-
5. Actuarial (gains) losses		-	4,348,772	4,831,000
6. Foreign currency exchange rates		-	-	-
7. Benefits paid		-	(6,577,037)	(5,831,000)
8. Plan amendments		-	-	(2,684,000)
9. Business combinations, divestitures, curtailments, settlements, and special termination benefits		-	-	-
10. Benefit obligation, end of year	\$	-	\$	56,910,090

## NOTES TO FINANCIAL STATEMENTS

	December 31,					
	2016		2015		2015	
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits Per SSAP No 11	
(2) Change in plan assets:						
a. Fair value of plan assets, beginning of year	\$ 2,073,799,390	\$ 2,139,480,687	\$ 4,897,000	\$ 4,834,000	\$ -	-
b. Actual return on plan assets	142,579,333	(19,764,467)	27,086	46,000	-	-
c. Foreign currency exchange rates changes	-	-	-	-	-	-
d. Contributions by reporting entity	89,835,779	65,496,344	13,892,599	18,619,000	-	-
e. Contributions by plan participants	-	-	1,140,435	8,903,000	-	-
f. Benefits paid	(125,940,146)	(111,413,174)	(15,570,350)	(27,505,000)	-	-
g. Business combinations, divestitures, curtailments, settlements, and special termination benefits	-	-	-	-	-	-
h. Fair value of plan assets, end of year	\$ 2,180,274,356	\$ 2,073,799,390	\$ 4,386,770	\$ 4,897,000	\$ -	-

	December 31,			
	2016		2015	
	Pension Benefits		Other Postretirement Benefits	
(3) Funded status				
Overfunded:				
a. Assets (nonadmitted)				
1. Prepaid benefit costs	\$ 624,498,480	\$ 659,277,010	\$ -	-
2. Overfunded plan assets	-	-	-	-
3. Total assets (nonadmitted)	624,498,480	659,277,010	-	-
Underfunded:				
b. Liabilities recognized				
1. Accrued benefit costs	231,797,412	214,520,074	364,652,607	315,032,000
2. Liability for pension benefits	363,007,101	369,276,046	(28,932,352)	(14,613,000)
3. Total liabilities recognized	594,804,513	583,796,120	335,720,255	300,419,000
c. Unrecognized liabilities	\$ 10,183,043	\$ 17,546,011	\$ 335,720,255	\$ 300,419,000

	Years Ended December 31,					
	2016		2015		2015	
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits Per SSAP No 11	
(4) Components of net periodic benefit						
a. Service cost	\$ 100,249,462	\$ 71,531,052	\$ 11,080,265	\$ 8,972,000	\$ 1,086,027	\$ 805,000
b. Interest cost	113,086,607	99,012,417	11,963,716	13,658,000	1,834,290	1,617,000
c. Expected return on plan	(144,892,511)	(154,179,937)	(101,910)	(101,000)	-	-
d. Transition asset or obligation	-	-	-	-	-	-
e. Gains and losses	70,325,405	65,209,695	2,987,802	3,003,000	288,235	2,850,000
f. Prior service cost or (credit)	3,122,684	3,614,644	(5,519,500)	1,959,000	-	-
g. Gain or loss recognized due to settlement or curtailment	-	-	-	-	-	-
h. Total net periodic benefit cost	\$ 141,891,647	\$ 85,187,871	\$ 20,410,373	\$ 27,491,000	\$ 3,208,552	\$ 5,272,000

## NOTES TO FINANCIAL STATEMENTS

- (5) The following sets forth the amounts in unassigned funds (surplus) recognized as components of net periodic benefit cost:

	December 31,			
	2016	2015	2016	2015
	Pension Benefits		Postretirement Benefits	
a. Items not yet recognized as a component of net periodic cost in prior year	\$ 1,046,099,067	\$ 905,487,384	\$ (14,593,000)	\$ 102,639,000
b. Net transition asset or obligation recognized	-	-	-	-
c. Net prior service cost or credit arising during the period	-	-	-	(97,905,000)
d. Net prior service cost or credit recognized	(3,122,684)	(3,614,644)	5,519,500	(1,959,000)
e. Net gain and loss arising during the period	25,037,646	209,436,022	(16,851,050)	(14,365,000)
f. Net gain and loss recognized	(70,325,405)	(65,209,695)	(2,987,802)	(3,003,000)
g. Items not yet recognized as a component of net periodic cost in current year	<u>\$ 997,688,624</u>	<u>\$ 1,046,099,067</u>	<u>\$ (28,912,352)</u>	<u>\$ (14,593,000)</u>

- (6) The following sets forth the amounts in unassigned funds (surplus) expected to be recognized in the next fiscal year as components of net periodic benefit cost:

	December 31,			
	2017	2016	2017	2016
	Pension Benefits		Postretirement Benefits	
a. Net transition asset or obligation	\$ -	\$ -	\$ -	\$ -
b. Net prior service cost or credit	3,122,684	3,614,644	(5,519,500)	(5,519,000)
c. Net recognized gains and losses	65,195,487	70,325,402	1,780,092	3,221,000

- (7) The following sets forth the amounts in unassigned funds (surplus) that have not yet been recognized as components of net periodic benefit cost:

	December 31,			
	2016	2015	2016	2015
	Pension Benefits		Postretirement Benefits	
a. Net transition asset or obligation	\$ -	\$ -	\$ -	\$ -
b. Net prior service cost or credit	6,245,368	9,368,052	(52,024,500)	(57,544,000)
c. Net recognized gains and losses	991,443,256	1,036,731,015	23,092,148	42,931,000

- (8) The assumptions the Company used to calculate the benefit obligations and to determine the benefit costs are as follows:

	December 31,			
	2016	2015	2016	2015
	Pension Benefits		Other Postretirement Benefits	
Weighted-average assumptions used to determine net periodic benefit cost as of December 31:				
a. Weighted-average discount rate	4.30 %	3.90 %	3.95 %	3.75 %
b. Expected long-term rate of return on plan assets	7.00 %	7.25 %	3.00 %	3.00 %
c. Rate of compensation increase	3.50 %	4.00 %	3.50 %	4.00 %
Weighted-average assumptions used to determine projected benefit obligation as of December 31:				
d. Weighted-average discount rate	4.10 %	4.30 %	3.85 %	3.95 %
e. Rate of compensation increase	3.50 %	3.50 %	3.50 %	3.50 %

- (9) The amount of the accumulated benefit obligation for defined benefit pension plans was \$2,714,777,876 as of December 31, 2016 and \$2,605,919,770 as of December 31, 2015.

## NOTES TO FINANCIAL STATEMENTS

- (10) The Company sponsors multiple employee benefits, providing retirement, life, health and other benefits to employees, certain employees of unconsolidated subsidiaries, agents, general agents and retirees who meet plan eligibility requirements.

MMHLLC has the obligation to pay the Company's other postretirement benefits. The transfer of this obligation to MMHLLC does not relieve the Company of its primary liability. MMHLLC is allocated other postretirement expenses related to interest cost, amortization of actuarial gains (losses) and expected return on plan assets, whereas service cost and prior service cost are recorded by the Company.

Substantially all of the Company's U.S. employees and agents may become eligible to receive other postretirement benefits. These benefits are funded as the benefits are provided to the participants. For employees who retire after 2009, except certain employees who were close to retirement in 2010, the Company's cost is limited to a Retiree Health Reimbursement Account (RHRA) which accumulates during an employee's career and can be drawn down by the retiree to purchase coverage outside of the Company or for other health care costs. Retired employees with an RHRA also may choose to purchase coverage through the private retiree exchange.

For other current and future retired employees, and current and future retired agents, the Company provides access to postretirement health care plans through a private retiree exchange. The Company's cost is limited to the fixed annual subsidy provided to retirees through a Health Reimbursement Account each year that the retiree can use to purchase coverage on the exchange or for other health care costs.

Company-paid basic life insurance is provided to retirees who retired before 2010 and certain employees who retire after 2009 but were close to retirement in 2010. Supplemental life insurance is available to certain retirees on a retiree-pay-all basis.

The Company provides retiree life insurance coverage for home office employees who, as of January 1, 2010, were age 50 with at least 10 years of service or had attained 75 points, generally age plus service, with a minimum 10 years of service.

In measuring the year-end 2016 obligations, the annual rate of increase in the per capita cost of covered health care medical benefits and prescription drug benefits were assumed to be 8.00% for 2017 for all participants. For the year-end 2016 measurement the rate was assumed to decline gradually to 5.00% by 2024 for both medical and prescription drug benefits and remain at that level thereafter.

In measuring the year-end 2015 obligations, the annual rate of increase in the per capita cost of covered health care medical benefits and prescription drug benefits were assumed to be 8.00% for 2016 for all participants. For the year-end 2015 measurement the rate was assumed to decline gradually to 5.00% by 2024 for both medical and prescription drug benefits and remain at that level thereafter.

- (11) Assumed health care cost trend rates do not have a significant effect on the amounts reported for the health care plans. A one percentage point change in the assumed health care cost trend rate would have had the following effects in 2016.

	One Percentage Point Increase	One Percentage Point Decrease
a. Effect on total service and interest cost components	\$ 100,000	\$ (100,000)
b. Effect on other postretirement benefit obligations	1,100,000	(900,000)

- (12) The expected future pension and other postretirement benefit payments, which reflect expected future service, are as follows:

	<u>Year(s)</u>	<u>Amount</u>
a.	2017	\$ 113,589,163
b.	2018	120,584,016
c.	2019	127,317,244
d.	2020	134,038,013
e.	2021	141,156,047
f.	2022 through 2026	806,072,723

The Medicare Part D subsidy no longer applies as Medicare-eligible participants are no longer covered under the self-insured retiree health care plan.

- (13) The Company intends to fund \$121,347,820 in 2017 to meet its expected current obligations under its qualified and non-qualified pension and other postretirement benefit plans.

**NOTES TO FINANCIAL STATEMENTS**

(14) The Company's qualified pension plan assets managed by the Company and its subsidiaries are as follows:

	December 31,	
	2016	2015
Barings Long Duration Bond Fund	\$ 227,532,680	\$ 213,826,925
General Investment Account	233,734,609	196,906,145
Alternative Investment Separate Account	220,978,128	207,836,552
Oppenheimer International Growth Fund	115,879,351	118,313,599
Oppenheimer Small Capitalization Core Fund	49,758,614	107,862,712
Oppenheimer Large Core Fund	98,285,938	87,554,914
MM Select Blue Chip Growth Fund	48,139,774	68,582,769
MM Select Large Cap Value Fund	50,390,695	44,796,738
MM Premier Strategic Emerging Markets Fund	39,179,478	36,629,612
MM Select Growth Opportunities Fund	36,257,577	60,278,404
Oppenheimer Real Estate Fund	22,441,337	33,726,308
MM Select Small Cap Value Fund	27,227,398	34,716,778
MM Select Small Cap Growth Fund	23,309,621	34,083,568
MM Premier Core Bond Fund	-	25,579,034
MassMutual Pension Plan Trust:		
Real Estate Fund	41,392,757	-
Multi-strategy Hedge Fund	25,145,750	-
Limited Partnership - Foreign Fund	25,528,150	-
Cash and Short-term Cash Equivalents	84,654,595	-
Limited Partnership - Private Equity/Venture Capital Fund	7,417,235	-
Limited Partnership - Real Estate Fund	6,431,662	-
	<u>\$ 1,383,685,349</u>	<u>\$ 1,270,694,058</u>

The approximate amount of annual benefits to be paid to plan participants covered by a group annuity contract issued by the employer or related parties is \$74,169,597 for 2017.

- (15) The Company does not use alternative amortization methods.
- (16) The Company does not use any substantive commitments as the basis for accounting for the benefit obligation.
- (17) The Company did not have any special contractual benefits recognized during the period.
- (18) The Company did not have any significant changes in benefit obligations or plan assets not otherwise apparent in the other disclosure required by current statutory guidance regarding accounting for pensions.
- (19) The Company does not expect any plan assets to be returned during the 12 month period following the most recent annual statement of financial position presented.
- (20) The following sets forth the accumulated benefit obligation funded status of the plans:

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
<b>Pension:</b>				
a. Accumulated benefit obligation	\$ -	\$ -	\$ 2,714,777,876	\$ 2,605,919,770
b. Less: Assets	-	-	2,180,274,356	2,073,799,390
c. Accumulated benefit obligation funded status	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 534,503,520</u>	<u>\$ 532,120,380</u>

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
<b>Postretirement:</b>				
a. Accumulated benefit obligation	\$ -	\$ -	\$ 340,107,025	\$ 305,316,000
b. Less: Assets	-	-	4,386,770	4,897,000
c. Accumulated benefit obligation funded status	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 335,720,255</u>	<u>\$ 300,419,000</u>

## NOTES TO FINANCIAL STATEMENTS

The following sets forth the projected benefit obligation funded status of the plans:

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
<b>Pension:</b>				
a. Projected benefit obligation	\$	-	\$	2,785,261,912
b. Less: fair value of plan assets		-		2,180,274,356
c. Projected benefit obligation funded status	\$	-	\$	604,987,556
				\$ 601,342,131

	December 31,			
	2016	2015	2016	2015
	Overfunded		Underfunded	
<b>Postretirement:</b>				
a. Projected benefit obligation	\$	-	\$	340,107,025
b. Less: fair value of plan assets		-		4,386,770
c. Projected benefit obligation funded status	\$	-	\$	335,720,255
				\$ 300,419,000

The qualified pension plan was underfunded by \$245,712,776 as of December 31, 2016 and by \$251,446,528 as of December 31, 2015. The nonqualified pension plans are not funded and have total projected benefit obligations of \$359,274,780 as of December 31, 2016 and \$349,895,603 as of December 31, 2015.

- (21) As of December 31, 2016, the unamortized balance of the transition liability upon adoption of SSAP 102 was \$10,183,043. This transition liability is being amortized through 2021. This SSAP primarily adopts U.S. GAAP accounting guidance for pensions by requiring entities to measure the pension liability at the projected benefit obligation and to recognize the funded status of the defined benefit pension plan on the statement of financial position. The projected benefit obligation includes amounts for both vested and non-vested participants and makes assumptions for future compensation increases.

In 2015, the Company communicated its intent to amend its retired employee and retired agent welfare benefit plans with regard to the medical coverage certain of Medicare-eligible and non-Medicare eligible retirees and their dependents as well as certain former employees receiving long-term disability benefits and surviving dependents (Covered Retirees). Effective January 1, 2016, the Company ceased to provide company-sponsored medical coverage to Covered Retirees through the self-insured medical options under its welfare benefit plans. Instead, the Company provides access to health insurance coverage for Covered Retirees and their dependents through a private insurance marketplace. Eligible Covered Retirees are provided with a company-funded RHRA, which can be used for reimbursement of health insurance premiums or eligible out-of-pocket medical expenses. Effective January 1, 2016, the Medicare Part D subsidy no longer applies as Medicare-eligible participants are no longer covered under the self-insured retiree health care plans. The projected benefit obligation decreased \$97,905,000 as a result of this amendment in the fourth quarter 2015 remeasurement and is being amortized through net periodic benefit cost over the average remaining years of service of the eligible employees and agents.

On July 1, 2016, the Company agreed to provide certain service credits under the MassMutual Retired Agents' Welfare Benefits Plan for prior MPCG service. This resulted in an increase to the accumulated projected benefit obligation of \$40,700,000 recognized at the time of the acquisition. The expense attributable to prior service periods is recorded as amortization of the nonadmitted assets acquired rather than through the amortization of prior service cost. See Note 3. "Business Combinations and Goodwill" for further information on the acquisition of MPCG.

The Society of Actuaries RP 2014 mortality tables and improvement scale was amended in October 2016 and 2015. The Company adopted the new mortality tables and other key plan assumptions as part of its fourth quarter 2016 and 2015 remeasurements. As a result of these changes, the Company's aggregate projected benefit obligation as of December 31, 2016 was decreased by approximately \$37,393,060 and the projected benefit obligation as of December 31, 2015 increased approximately \$155,249,483.

- b. The target range allocations for the qualified pension plan assets are 13% to 23% domestic equity securities, 25% to 45% long duration bond securities, 5% to 15% GIA and aggregate bond assets, 13% to 23% international equity securities and 10% to 30% alternative investments. Domestic equities primarily include investments in large capitalization (large-cap) companies and small capitalization (small-cap) companies. Long duration bond securities invest in several long-duration bond exchange traded funds. International equities include investments in American Depository Receipts and limited partnerships that trade primarily in foreign markets in Europe, Latin America and Asia. The pension plan assets invested in the GIA through the unallocated group annuity contract earn a fixed interest. These assets comprised approximately 11% of the plan assets as of December 31, 2016 and 9% as of December 31, 2015.
- c. Fair value of plan assets
- (1) The assets of the qualified pension plan investments are invested through a Massachusetts Mutual Life Insurance Company group annuity contract and investments held in trust. The group annuity contract invests in the General Investment Account (GIA) of the Company, pooled separate accounts and nonpooled separate accounts. Pooled separate account assets support more than one contract holder and are managed by the Company and its subsidiaries. These assets are assigned for the purposes of allocating investment returns and asset gains and losses. Nonpooled separate accounts support only one contract holder and are managed by the Company and unaffiliated asset managers.

The General Investment Account is designed to provide stable, long-term investment growth. The account value is maintained at a stable value (generally referred to as "book value") regardless of financial market fluctuations, however, if the plan sponsor initiates a full or partial termination, the amount liquidated is subject to an adjustment that could result in an increase or decrease in the book value of the plan's investment.

**NOTES TO FINANCIAL STATEMENTS**

The assets of the qualified pension plan are invested in the following pooled and nonpooled separate account options as well as certain private equity funds, hedge funds, private real estate funds and an all cap U.S. equity index exchange traded fund held in the MassMutual Pension Plan Trust (Pension Trust Assets):

*Barings Long Duration Bond Fund* is a nonpooled separate account advised by Barings with a long duration bond strategy that invests in a diversified portfolio of fixed-income securities, including, short-term, intermediate and long-term credit, government securities and cash. The specific performance objective is to outperform the total return of the Bloomberg Barclays U.S. Long Government/Credit Bond index.

*Alternative Investment Separate Account* is a nonpooled separate account advised by Barings. Barings' strategy includes investing in private equity funds, hedge funds, a private real estate fund and an all cap U.S. equity index exchange traded fund.

*Oppenheimer International Growth Fund* is a pooled separate account investing in a mutual fund sub-advised by OFI Institutional Asset Management (OFI Institutional) that invests in international large-cap securities, primarily in the developed international markets. This international equity strategy focuses on well-positioned, well-managed businesses that have strong revenue growth, sustainable profit margins, capital efficiency and/or business integrity.

*Oppenheimer Small Capitalization Core Fund* is a nonpooled separate account advised by OFI Institutional that invests in domestic small and mid-cap, and international small and mid-cap securities. The fund aims to maintain a broadly diversified portfolio across all major economic sectors by applying risk controls for both sector and position size. The fund's strategy uses separate fundamental research and quantitative models to select securities.

*Oppenheimer Large Core Fund* is a nonpooled separate account advised by OFI Institutional that invests in a diversified mix of domestic large company stocks for capital appreciation potential. The strategy is a large-cap core equity strategy, where the portfolio managers combine fundamental research and quantitative models to identify investment opportunities among large, competitively advantaged companies whose earnings are growing faster than average, or whose shares appear to be mispriced by the market.

*MM Select Blue Chip Growth Fund* is a pooled separate account investing in a mutual fund sub-advised by T. Rowe Price Associates, Inc. (T. Rowe Price) and Loomis Sayles & Company (Loomis) that seeks growth of capital over the long-term. The strategy seeks well-established large cap companies with the potential for above-average earnings growth. In selecting securities, T. Rowe Price generally seeks to identify companies with a leading market position, seasoned management and strong financial fundamentals. Loomis emphasizes companies with sustainable competitive advantages, long-term secular and profitable growth, and management teams focused on creating long-term value for shareholders.

*MM Select Large Cap Value Fund* is a pooled separate account investing in a mutual fund sub-advised by Barrow Hanley and Huber Capital (Huber). Barrow Hanley manages a dividend focused strategy with a high quality, conservative orientation. Huber employs a more concentrated, deeper value strategy using a dividend discount model as the basis for determining intrinsic value opportunities.

*MM Premier Strategic Emerging Markets Fund* is a pooled separate account investing in a mutual fund sub-advised by OFI Institutional seeking long-term growth of capital by investing primarily in international emerging markets. OFI Institutional determines the universe of emerging market countries in which to invest, based on OFI Institutional's assessment of a country's suitability for investment.

*MM Select Growth Opportunities Fund* is a pooled separate account investing in a mutual fund sub-advised by Sands Capital Management, LLC (Sands) and Jackson Square Partners (JSP) with a large-cap growth equity focus. Sands uses bottom-up, fundamental research and employs six key investment criteria: sustainable, above average earnings growth, a leadership position, competitive advantages, a value-added focus with a clear mission, financial strength and rational valuation. JSP seeks to select large-cap equities that it believes are undervalued in relation to their intrinsic value, as indicated by multiple factors, including a return on capital above its cost of capital.

*Oppenheimer Real Estate Fund* is a pooled separate account that invests in an Oppenheimer mutual fund sub-advised by Barings. This real estate strategy seeks out exposure to the commercial real estate market and uses a fundamental research driven approach to search for what are believed to be high quality companies in the Real Estate Investment Trust (REIT) market. REITs are publicly-traded securities that sell like a stock on the major exchanges and which invest in real estate or represent operating companies that are involved in the real estate market.

*MM Select Small Cap Value Fund* is a pooled separate account investing in a mutual fund sub-advised by Wellington Management and Barrow Hanley that seeks to maximize total return through investing primarily in small-cap equity securities. Wellington Management employs a bottom-up stock selection process that utilizes proprietary, fundamental research to identify companies it considers to be undervalued but have the potential for significant longer-term returns. Barrow Hanley typically seeks to exploit market inefficiencies by using proprietary research to identify small-cap companies considered to be undervalued but with the potential to generate superior returns at below average levels of risk.

*MM Select Small Cap Growth Fund* is a pooled separate account investing in a mutual fund sub-advised by Wellington Management and OFI Institutional. The fund invests in domestic small-cap equity securities and seeks long-term capital appreciation. Each sub-adviser employs a growth-based investment approach and may perform a number of analyses in considering whether to buy or sell a security for the fund. Each of the sub-advisers uses a combination of fundamental and quantitative analyses to identify small-cap companies that it believes are experiencing or will experience rapid earnings or revenue growth.

*Vanguard Russell 3000 Index* is a pooled separate account investing in a mutual fund advised by Vanguard. The fund is passively managed and seeks to track the Russell 3000 Index.

*Goldman Sachs Asset Management Long Duration Bond Fund* is a nonpooled separate account advised by Goldman Sachs Asset Management that invests in a diversified portfolio of fixed-income securities, including short-term, intermediate and long-term credit, government securities and cash. The specific performance objective is to outperform the total return of the Bloomberg Barclays U.S. Long Government/Credit Bond index.

*Pacific Investment Management Company Long Duration Bond Fund* is a nonpooled separate account advised by Pacific Investment Management Company that invests in a diversified portfolio of fixed-income securities, including short-term, intermediate and long-term credit and government securities and cash. The specific performance objective is to outperform the total return of the Bloomberg Barclays U.S. Long Government/Credit Bond index.

## NOTES TO FINANCIAL STATEMENTS

*Oakmark International Collective Fund* is a non-pooled separate account advised by Harris Associates that invests primarily in developed market international large-cap equity securities, which may include common stocks, preferred stocks, securities that are convertible into common stocks, depositary receipts and rights and warrants to buy common stocks. This international equity strategy seeks out companies that it believes to be trading in the market at significant discounts to their underlying values.

*T. Rowe Price Emerging Markets Stock Fund* is a pooled separate account investing in a mutual fund advised by T. Rowe Price that seeks long-term growth of capital through investments primarily in the common stocks of companies located or with primary operations in the emerging markets of Latin America, Asia, Europe, Africa and the Middle East.

*MassMutual Pension Plan Trust* is a trust account with a strategy of investing in alternative investments as directed by the Company. These investments include private equity, hedge funds, and private real estate, with allocations temporarily awaiting investment held in an all cap U.S. equity index exchange traded fund.

The following presents the fair value hierarchy of the Company's pension plan assets by asset class:

	December 31, 2016			
	Level 1	Level 2	Level 3	Total
Investments in the qualified pension plan:				
Pooled separate accounts:				
Common stocks:				
U.S. large capitalization	\$ -	\$ 204,083,788	\$ -	\$ 204,083,788
International large capitalization	-	115,879,351	-	115,879,351
U.S. small capitalization value	-	50,537,019	-	50,537,019
International emerging markets	-	39,179,478	-	39,179,478
Real estate	-	22,441,337	-	22,441,337
Total pooled separate accounts	\$ -	\$ 432,120,973	\$ -	\$ 432,120,973
Nonpooled separate accounts:				
Common stocks:				
U.S. large capitalization	78,015,898	-	1,808	78,017,706
U.S. small capitalization	32,046,543	-	-	32,046,543
U.S. mid capitalization	23,849,966	-	-	23,849,966
International large capitalization value	5,118,494	-	-	5,118,494
International small/mid capitalization	5,931,402	-	-	5,931,402
Corporate and other bonds	-	314,697,359	-	314,697,359
Long duration bonds	96,864,811	-	-	96,864,811
Short-term bonds	13,387,944	-	-	13,387,944
Government securities	-	277,801,783	-	277,801,783
Mortgage backed securities	-	6,256,563	-	6,256,563
Registered investment companies:				
U.S. large capitalization	62,964,567	-	-	62,964,567
Emerging markets	64,269,202	-	-	64,269,202
Multi-strategy hedge funds	-	-	37,433,698	37,433,698
Limited partnerships:				
International small/mid capitalization	-	-	168,292,680	168,292,680
Multi-strategy hedge funds	-	-	25,170,300	25,170,300
Private equity/venture capital	-	-	42,509,991	42,509,991
Asset-backed securities	-	6,378,861	-	6,378,861
Real estate	-	-	50,738,974	50,738,974
Cash and short-term cash equivalents	(1,691,397)	13,809,178	-	12,117,781
Total nonpooled separate accounts	\$ 380,757,430	\$ 618,943,744	\$ 324,147,451	\$ 1,323,848,625
Pension trust assets:				
Common stocks:				
U.S. large capitalization	83,886,558	-	-	83,886,558
Multi-strategy hedge funds	-	-	25,145,750	25,145,750
Limited partnerships				
Real estate	-	-	6,431,662	6,431,662
Private equity/venture capital	-	-	7,417,235	7,417,235
Foreign	-	-	25,528,150	25,528,150
Real Estate	-	-	41,392,757	41,392,757
Cash and short term cash equivalents	-	768,037	-	768,037
Total pension trust assets	83,886,558	768,037	105,915,554	190,570,149
Total general investment account	-	-	233,734,609	233,734,609
Total	\$ 464,643,988	\$ 1,051,832,754	\$ 663,797,614	\$ 2,180,274,356

**NOTES TO FINANCIAL STATEMENTS**

	December 31, 2015			
	Level 1	Level 2	Level 3	Total
Investments in the qualified pension plan:				
Pooled separate accounts:				
Common stocks:				
U.S. large capitalization	\$ -	\$ 299,641,653	\$ -	\$ 299,641,653
International large capitalization value	-	118,313,599	-	118,313,599
U.S. small capitalization value	-	68,800,346	-	68,800,346
International emerging markets	-	36,629,612	-	36,629,612
Real estate	-	33,726,308	-	33,726,308
Diversified fixed income bonds	-	25,579,034	-	25,579,034
Total pooled separate accounts	\$ -	\$ 582,690,552	-	\$ 582,690,552
Nonpooled separate accounts:				
Common stocks:				
U.S. large capitalization	67,975,604	-	-	67,975,604
U.S. small capitalization	76,930,006	-	-	76,930,006
U.S. mid capitalization	32,001,037	-	-	32,001,037
International large capitalization value	5,480,264	-	-	5,480,264
International small/mid capitalization	8,393,971	-	-	8,393,971
Corporate and other bonds	-	249,419,387	-	249,419,387
Long duration bonds	140,163,135	-	-	140,163,135
Short term bonds	2,319,635	-	-	2,319,635
Government securities	-	265,679,505	-	265,679,505
Mortgage backed securities	-	3,095,324	-	3,095,324
Registered investment companies:				
U.S. large capitalization	58,493,399	-	-	58,493,399
Emerging markets	57,296,680	-	-	57,296,680
Multi-strategy hedge funds	-	-	37,360,044	37,360,044
Limited partnerships:				
International small/mid capitalization	-	-	155,411,709	155,411,709
Multi-strategy hedge funds	-	-	24,544,460	24,544,460
Private equity/venture capital	-	-	39,071,026	39,071,026
Asset backed securities	-	8,744,861	-	8,744,861
Real estate	-	-	46,102,248	46,102,248
Cash and short-term cash equivalents	8,435,243	7,285,155	-	15,720,398
Total nonpooled separate accounts	\$ 457,488,974	\$ 534,224,232	\$ 302,489,487	\$ 1,294,202,693
Total general investment account	-	-	196,906,145	196,906,145
Total	\$ 457,488,974	\$ 1,116,914,784	\$ 499,395,632	\$ 2,073,799,390

(2) The following presents changes in the Company's Level 3 pension assets:

	Beginning	Transfers	Return	Return					Ending
	Balance	In & Out of	Assets	Assets	Purchase	Issuances	Sales	Settlements	Balance
	01/01/2016	Level 3	Still Held	Sold					12/31/2016
Non-pooled separate accounts:									
Limited partnerships:									
International small/mid cap	\$ 155,411,709	\$ -	\$ 12,880,971	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 168,292,680
Private equity/venture capital	39,071,026	-	(99,411)	708,394	4,840,413	-	(2,010,431)	-	42,509,991
Multi-strategy hedge fund	24,544,460	-	625,840	-	-	-	-	-	25,170,300
Real estate	46,102,248	-	4,636,726	-	-	-	-	-	50,738,974
Multi-strategy hedge fund	37,360,044	-	73,654	-	-	-	-	-	37,433,698
US large cap	-	-	1,808	-	-	-	-	-	1,808
General investment account	196,906,145	110,000,000	-	9,994,808	131,024,039	-	(214,190,383)	-	233,734,609
Pension trust assets:									
Foreign	-	-	528,150	-	25,000,000	-	-	-	25,528,150
Private equity/venture capital	-	-	(140,708)	-	9,140,415	-	(1,582,472)	-	7,417,235
Real estate	-	-	-	-	6,864,505	-	(432,843)	-	6,431,662
Multi-strategy hedge fund	-	-	145,750	-	25,000,000	-	-	-	25,145,750
Real estate	-	-	1,392,757	-	40,000,000	-	-	-	41,392,757
Total pension assets	\$ 499,395,632	\$ 110,000,000	\$ 20,045,537	\$ 10,703,202	\$ 241,869,372	\$ -	\$ (218,216,129)	\$ -	\$ 663,797,614

Current year transfers of \$110,000,000 into the GIA Level 3 from Level 1 and 2 investments was for the funding of the new MassMutual Pension Plan Trust.

## NOTES TO FINANCIAL STATEMENTS

	Beginning	Transfers	Return	Return					Ending
	Balance	In & Out of	Assets	Assets					Balance
	01/01/2015	Level 3	Still Held	Sold	Purchase	Issuances	Sales	Settlements	12/31/2015
Limited partnerships:									
International small/mid cap	\$ 106,224,103	\$ -	\$ (9,812,394)	\$ -	\$ 59,000,000	\$ -	\$ -	\$ -	\$ 155,411,709
Multi-strategy hedge fund	23,450,160	-	1,094,300	-	-	-	-	-	24,544,460
Private equity/venture capital	27,800,755	-	7,073,200	734,614	5,132,974	-	(1,556,579)	(113,938)	39,071,026
Multi-strategy hedge fund	37,073,086	-	286,958	-	-	-	-	-	37,360,044
Real estate	38,504,705	-	7,597,543	-	-	-	-	-	46,102,248
General investment account	214,927,512	-	-	5,556,256	-	71,000,000	(94,577,623)	-	196,906,145
Total pension assets	<u>\$ 447,980,321</u>	<u>\$ -</u>	<u>\$ 6,239,607</u>	<u>\$ 6,290,870</u>	<u>\$ 64,132,974</u>	<u>\$ 71,000,000</u>	<u>\$ (96,134,202)</u>	<u>\$ (113,938)</u>	<u>\$ 499,395,632</u>

### (3) Fair Value Measurements

The Company's fair value hierarchy is defined in Note 20 "Fair Value Measurements."

The following is a description of the valuation methodologies used to measure fair value for the investments in the qualified pension plan.

**Pooled Separate Accounts:** Unit value calculated based on the net assets of the underlying pool of securities which value their investment securities at fair value. The separate accounts are valued daily based on the NAV of shares of the underlying funds and are therefore generally classified as Level 2. As of December 31, 2016 and 2015, the plan had no specific plans or intentions to sell investments at amounts other than NAV. These investments can be redeemed on a daily basis and have no lockups or funding commitments.

**Nonpooled Separate Accounts:** Valued primarily using the closing price reported on the active market on which the individual securities are traded.

**Cash:** Stated at cost, which is equal to fair value and held by an unaffiliated bank.

**General Investment Account Option:** Liquidation value based on an actuarial formula as defined under the terms of the contract.

The methods described above may produce a fair value calculation that is not indicative of net realizable value or reflective of the future values of the investments. Furthermore, while the Company believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

- d. The Company employs a total return investment approach whereby a mix of equities and fixed-income investments are used to maximize the long-term return of plan assets with a prudent level of risk. Risk tolerance is established through consideration of plan liabilities, plan funded status and the Company's financial condition. The investment portfolio contains a diversified blend of equity and fixed-income investments. Alternative assets such as private equity funds, hedge funds, private real estate funds, equity index exchange traded funds and bond index exchange traded funds are used to improve portfolio diversification. Investment risk is measured and monitored on an ongoing basis through quarterly investment portfolio reviews, annual liability measurements, and periodic asset and liability studies. A portion of the alternative assets are held outside of the group annuity contract and maintained in a trust account at State Street Bank and Trust Company.

e. **Defined Contribution Plan:**

The Company sponsors funded (qualified 401(k) thrift savings) and unfunded (nonqualified deferred compensation thrift savings) defined contribution plans for its employees, agents and retirees. The qualified 401(k) thrift savings plan's net assets available for benefits were \$2,452,976,419 as of December 31, 2016 and \$2,220,306,451 as of December 31, 2015. The Company match for the qualified 401(k) thrift savings plan is limited to 5% of eligible W-2 compensation. The Company's total matching thrift savings contributions included in general insurance expenses were \$46,282,428 for the year ended December 31, 2016 and \$41,639,569 for the year ended December 31, 2015.

The Company also maintains a defined contribution plan for agents, which was frozen in 2001. The net assets available for these benefits were \$174,225,396 as of December 31, 2016 and \$176,695,940 as of December 31, 2015.

- f. The Company did not participate in multi-employer plans.

- g. The Company did not participate in consolidated or holding company plans.

- h. The Company provides severance-related postemployment benefits for home office employees. The net accumulated liability for these benefits was \$50,970,558 as of December 31, 2016 and \$42,673,570 as of December 31, 2015.

The Company accrues postemployment benefits for the health benefits of agents who qualify for long-term disability and are not retired. The net accumulated liability for these benefits was \$5,939,532 as of December 31, 2016 and \$6,967,004 as of December 31, 2015.

- i. The Company has determined that benefits provided by its plan are actuarially equivalent to Medicare Part D under the Medicare Modernization Act.

j. **Employee Compensation Plans:**

The Company has a long-term incentive compensation plan, under which certain employees of the Company and its subsidiaries may be issued phantom share-based compensation awards. These awards include Phantom Stock Appreciation Rights (PSARs) and Phantom Restricted Stock (PRS). These awards do not grant an equity or ownership interest in the Company.

PSARs provide the participant with the opportunity to share in the value created in the total enterprise. The PSAR value is the appreciation in the phantom stock price between the grant price and the share price at the time of exercise. Awards can only be settled in cash. PSARs typically cliff vest at the end of three years and expire five years after the date of grant. Vested PSARs may be exercised during quarterly two-week exercise periods prior to expiration. The compensation expense for an individual award is

## NOTES TO FINANCIAL STATEMENTS

recognized over the service period.

PRS provide the participant with the opportunity to share in the value created in the total enterprise. Participants receive the full phantom share value (grant price plus/minus any change in share price) over the award period. Awards can only be settled in cash. PRS typically vests on a graded basis over five years, one third per year after years three, four and five. On each vesting date, a lump sum cash settlement is paid to the participant based on the number of shares vested multiplied by the most recent phantom stock price. Compensation expense is recognized on the accelerated attribution method. The accelerated attribution method recognizes compensation expense over the vesting period by which each separate payout year is treated as if it were, in substance, a separate award.

All awards granted under the Company's plans are compensatory classified awards. Compensation costs are based on the most recent quarterly calculated intrinsic value of the PSARs (current share price less grant price per share not less than zero) and PRS (current share price per share), considering vesting provisions, net of forfeiture assumptions and are included in the Consolidated Statutory Statements of Financial Position as a liability in general expenses due or accrued. The compensation expense for an individual award is recognized over the service period. The cumulative compensation expense for all outstanding awards in any period is equal to the change in calculated liability period over period. The requisite service period for the awards is the vesting period.

At the time of death or disability, awards contain vesting conditions, whereby employees' unvested awards immediately vest on an accelerated basis with a one-year exercise period for PSARs, full accelerated vesting and settlement for PRS awards granted 2016 and after. For PRS awards granted prior to 2016, awards vest on a pro-rata basis with immediate settlement.

At the time of retirement, for awards granted beginning in 2016, both PRS and PSAR vest according to the original grant terms. For awards granted prior to 2016, unvested awards immediately vest on an accelerated basis with a two-year exercise period for PSARs, and a pro-rata basis with immediate settlement for PRS.

The phantom share price is determined as the greater of the share price calculated using management basis core operating earnings or the share price calculated using management basis equity. This phantom share price is calculated and communicated to all participants quarterly and is used in calculating the liability of the Company based on intrinsic value.

A summary of the weighted average grant price of PSARs and PRS shares granted, the intrinsic value of PSARs shares exercised, the PRS liabilities paid and the fair value of shares vested during the year is as follows:

	For the Years Ended December 31,	
	2016	2015
Weighted average grant date fair value:		
PSAR granted during the year	\$ 86.80	\$ 99.42
PRS granted during the year	86.67	98.64
Intrinsic value:		
PSAR options exercised	5,219,678	38,281,952
PRS liabilities paid	25,931,314	30,560,380
Fair value of shares vested during the year	26,622,333	44,475,916

A summary of PSARs and PRS shares is as follows:

	PSARs			PRS		
	Number of Share Units	Weighted Average Price	Remaining Contract Terms (In Years)	Number of Share Units	Weighted Average Price	Remaining Contract Terms (In Years)
Outstanding as of						
December 31, 2014	2,755,343	\$ 73.82	1.7	1,111,640	\$ 69.47	3.3
Granted	939,375	99.42		320,839	98.64	
Exercised	(1,089,628)	64.46		(308,664)	58.93	
Forfeited	(43,117)	83.74		(35,976)	76.83	
Outstanding as of						
December 31, 2015	2,561,973	85.88	3.3	1,087,839	80.89	2.7
Granted	1,175,236	86.80		399,704	86.67	
Exercised	(445,332)	77.79		(301,428)	69.54	
Forfeited	(298,183)	86.68		(104,506)	83.88	
Outstanding as of						
December 31, 2016	<u>2,993,694</u>	87.35	3.2	<u>1,081,609</u>	85.33	2.9
Exercisable as of						
December 31, 2016	417,520	\$ 81.30	1.6	3,569	\$ 80.93	1.8

The PSARs compensation was a benefit of \$3,500,446 for the year ended December 31, 2016 and \$5,030,503 for the year ended December 31, 2015. The PSAR accrued compensation liability was \$1,740,851 for the year ended December 31, 2016 and \$10,177,174 for the year ended December 31, 2015. Unrecognized compensation expense related to nonvested PSARs awards was \$186,273 for the year ended December 31, 2016 and \$2,741,342 for the year ended December 31, 2015. The weighted average period over which the expense is expected to be recognized is 3.2 years. The PSARs unrecognized compensation expense represents the total intrinsic value of all shares issued if 100% vested at current stock price, minus current compensation liability.

The PRS compensation expense was \$18,387,919 for the year ended December 31, 2016 and \$15,755,701 for the year ended December 31, 2015. The PRS accrued compensation liability was \$43,524,072 for the year ended December 31, 2016 and \$49,245,149 for the year ended December 31, 2015. Unrecognized compensation expense related to nonvested PRS awards was \$38,909,619 for the year ended December 31, 2016 and \$39,030,541 for the year ended December 31, 2015. The weighted average period over which the expense is expected to be recognized is 2.9 years. The PRS unrecognized compensation expense represents

**NOTES TO FINANCIAL STATEMENTS**

the total value of all shares issued if 100% vested at the current stock price, minus current compensation liability.

**Note 13 – Capital and Surplus, Shareholders' Dividend Restrictions and Quasi-Reorganizations**

- (1) The Company is a mutual company, and as such does not have any capital stock.
- (2) As a mutual company, the Company has not issued any preferred stocks.
- (3) The Company is a mutual company, and as such does not have any cumulative stockholders' dividends.
- (4) The Company received cash dividends, recorded in net investment income, from MMHLLC of \$429,741,301 in 2016 and \$500,000,000 in 2015.
- (5) The Company is a mutual company, and as such does not pay stockholders' dividends.
- (6) There are no restrictions on unassigned surplus, which is held for the benefit of all policyholders.

The Company has absolutely and irrevocably guaranteed that, of the \$1,599,171,764 total apportionment from its surplus funds for policyholder dividends for the period beginning January 1, 2017 and ending December 31, 2017, it will pay or cause to be applied during 2017, in all events, annual dividends for participating individual life and annuity policies issued after December 31, 1983, in an amount of not less than \$1,035,000,000. This guarantee covers policies in the aggregate only and does not confer a dividend guarantee on any specific policy.

- (7) The Company did not make any advances to surplus.
- (8) The Company is a mutual company, and as such does not have any capital stock held for special purposes.
- (9) There were no changes in the balances of special surplus funds.
- (10) The portion of unassigned funds (surplus) represented by net unrealized gains and losses (cumulative, net of deferred tax) was \$7,502,311,677 as of December 31, 2016 and \$6,839,264,207 as of December 31, 2015.

## (11) Surplus notes

The following summarizes the surplus notes issued and outstanding as of December 31, 2016:

Issue Date	Interest Rate	Par Value (Face Amount of Notes)	Carrying Value of Note*	Interest And/or Principal Paid Current Year	Total Interest and/or Principal Paid	Unapproved Interest and/or Principal	Date of Maturity
11/15/1993	7.625%	\$ 250,000,000	\$ 250,000,000	\$ 19,062,500	\$ 438,437,500	\$ 2,382,812	11/15/2023
03/01/1994	7.500%	100,000,000	100,000,000	7,500,000	168,750,000	2,500,000	03/01/2024
05/12/2003	5.625%	250,000,000	249,372,291	14,062,500	189,960,937	1,757,813	05/15/2033
06/01/2009	8.875%	750,000,000	742,770,625	66,562,500	499,218,750	5,546,875	06/01/2039
01/17/2012	5.375%	400,000,000	398,889,071	21,500,000	104,752,778	1,791,667	12/01/2041
04/15/2015	4.500%	500,000,000	491,230,235	22,500,000	33,750,000	4,687,500	04/15/2065
Total		\$ 2,250,000,000	\$ 2,232,262,222	\$ 151,187,500	\$ 1,434,869,965	\$ 18,666,667	

These notes are unsecured and subordinate to all present and future indebtedness of the Company, all policy claims and all prior claims against the Company as provided by the Massachusetts General Laws. The surplus notes are all held by bank custodians for unaffiliated investors. All issuances were approved by the Division.

All payments of interest and principal are subject to the prior approval of the Division. Anticipated sinking fund payments are due for the notes issued in 1993 and 1994 as follows: \$62,500,000 in 2021, \$87,500,000 in 2022, \$150,000,000 in 2023 and \$50,000,000 in 2024. There are no sinking fund requirements for the notes issued in 2003, 2009, 2012 or 2015. Scheduled interest on the notes issued in 1993 and 2003 is payable on May 15 and November 15 of each year to holders of record on the preceding May 1 or November 1, respectively. Scheduled interest on the note issued in 1994 is payable on March 1 and September 1 of each year to holders of record on the preceding February 15 or August 15, respectively. Scheduled interest on the notes issued in 2009 and 2012 is payable on June 1 and December 1 of each year to holders of record on the preceding May 15 and November 15, respectively. Scheduled interest on the note issued in 2015 is payable on April 15 and October 15 of each year to holders of record on the preceding April 1 and October 1, respectively. Interest expense is not recorded until approval for payment is received from the Division. As of December 31, 2016, the unapproved interest was \$18,666,667. Through December 31, 2016, the Company paid cumulative interest of \$1,510,463,715 on surplus notes. Interest of \$151,187,500 was approved and paid during the twelve months ended December 31, 2016. Interest of \$139,937,500 was approved and paid during the year ended December 31, 2015.

- (12) There were no restatements due to prior quasi-reorganizations.

- (13) There were no quasi-reorganizations in the prior ten years.

**Note 14 – Liabilities, Contingencies and Assessments**

## a. Contingent commitments:

- (1) In the normal course of business, the Company provides specified guarantees and funding to MMHLLC and certain of its subsidiaries. The Company had approximately \$300,000,000 of these unsecured funding commitments to its subsidiaries as of December 31, 2016 and \$323,666,656 as of December 31, 2015. The unsecured commitments are included in private placements in the table below. As of December 31, 2016 and 2015, the Company had not funded, nor had an outstanding balance due on these commitments.

In the normal course of business, the Company enters into letter of credit arrangements. The Company had approximately \$143,672,847 of outstanding letter of credit arrangements and \$159,487,333 as of December 31, 2015 of outstanding letter

**NOTES TO FINANCIAL STATEMENTS**

of credit arrangements. As of December 31, 2016 and 2015, the Company did not have a funding request attributable to these letter of credit arrangements.

The Company approved financing of \$4,228,875,000 as of December 31, 2016 and \$3,013,000,000 as of December 31, 2015, for MassMutual Asset Finance LLC that can be used to finance ongoing asset purchases and refinance existing Company provided lines of credit. Borrowings under the facility with the Company were \$3,286,141,641 as of December 31, 2016 and \$2,700,806,797 as of December 31, 2015. Interest expense for these borrowings was \$62,499,534 in 2016 and \$47,244,024 in 2015. The unfunded amount of the facility, totaling \$942,733,359 as of December 31, 2016, is included in private placements in the table below. The interest of this facility adjusts monthly based on the 30-day LIBOR.

The Company approved financing of \$225,000,000 as of December 31, 2016 and December 31, 2015, for Jefferies Finance LLC that can be used to finance ongoing asset purchases and refinance existing Company provided lines of credit. The outstanding borrowings under the facility as of December 31, 2016 were \$23,310,000 and all outstanding interest has been paid. The total unfunded amount of the facility was \$201,690,000 as of December 31, 2016. The interest of this facility is calculated based on a full pass through of interest accrued on the underlying loans purchased.

In the normal course of business, the Company enters into commitments to purchase certain investments. The majority of these commitments have funding periods that extend between one and five years. The Company is not required to fund commitments once the commitment period expires.

As of December 31, 2016, the Company had the following commitments:

	2017	2018	2019	2020	2021	Thereafter	Total
Private placements	\$ 1,006,371,851	\$ 58,179,111	\$ 5,816,189	\$ 1,282,371,193	\$ 51,904,360	\$ 223,356,842	\$ 2,627,999,546
Mortgage loans	220,516,905	232,669,296	292,798,832	518,369,310	18,544,445	100,527,093	1,383,425,881
Real estate	-	-	48,180,609	204,000,000	-	-	252,180,609
Partnerships and LLC LIHTCs (including equity contributions)	558,921,084	535,449,871	362,785,731	359,319,463	202,861,481	492,416,464	2,511,754,094
	17,533,265	84,994,000	186,628	255,066,120	99,994,000	68,852,446	526,626,459
Total	\$ 1,803,343,105	\$ 911,292,278	\$ 709,767,989	\$ 2,619,126,086	\$ 373,304,286	\$ 885,152,845	\$ 7,301,986,589

In the normal course of business the Company enters into commitments related to property lease arrangements, certain indemnities, investments and other business obligations. As of December 31, 2016 and 2015, the Company had no outstanding obligations attributable to these commitments.

Certain commitments and guarantees of the Company provide for the maintenance of subsidiary regulatory capital and surplus levels and liquidity sufficient to meet certain obligations. These commitments and guarantees are not limited. As of December 31, 2016 and 2015, the Company had no outstanding obligations attributable to these commitments and guarantees.

(2) Guarantees:

In the normal course of business the Company enters into guarantees related to employee and retirement benefits, the maintenance of subsidiary regulatory capital, surplus levels and liquidity sufficient to meet certain obligations, and other property lease arrangements. If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA entity. The Company has no expectations for recoveries from third parties should these guarantees be triggered. As of December 31, 2016 and 2015, the Company had no outstanding obligations to any obligor attributable to these guarantees.

## NOTES TO FINANCIAL STATEMENTS

The following details contingent guarantees that are made on behalf of the Company's subsidiaries and affiliates as of December 31, 2016:

(1)	(2)	(3)	(4)	(5)
Nature and circumstances of guarantee and key attributes, including date and duration of agreement	Liability recognition of guarantee. (Include amount recognized at inception. If no initial recognition, document exception allowed under SSAP No. 5R.)	Ultimate financial statement impact if action under the guarantee is required	Maximum potential amount of future payments (undiscounted) the guarantor could be required to make under the guarantee. If unable to develop an estimate, this should be specifically noted.	Current status of payment or performance risk of guarantee. Also provide additional discussion as warranted
The Company guarantees the payment of certain employee and retirement benefits for specific wholly-owned subsidiaries (CREA and Babson Capital), if the subsidiary is unable to pay.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	The liabilities for these plans of \$188,734,282 have been recorded on the subsidiaries' books and represent the Company's maximum obligation.	-
Certain guarantees of the Company provide for the maintenance of a subsidiary's regulatory capital, surplus levels and liquidity sufficient to meet certain obligations. These unlimited guarantees are made on behalf of certain wholly-owned subsidiaries. (C.M. Life, MML Bay State and MassMutual Japan).	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	These guarantees are not limited and cannot be estimated.	-
The Company guarantees the payment of various lease obligations on behalf of its subsidiaries and affiliates originating in 2004, 2007 and 2012 and some are in effect until 2023..	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	The future maximum potential obligations are immaterial to the Company.	-
The Company issued a construction loan for a real estate development project. The land on which the property is to be built is subject to a ground lease. In conjunction with issuing this construction loan, the Company has also issued a completion guarantee to the land owner that pays only in the event the project is not completed. The project is expected to be completed by June 2019.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	\$350,000,000	-
The Company guarantees the capital contributions required to be made by a variable annuity separate account contract holder in the event the contract holder fails to payoff a subscription line utilized to deploy capital for the separate account.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	\$300,000,000 with the right to increase the line to \$650,000,000.	-
<b>Total</b>	-	-	<b>\$838,734,282</b>	-

**NOTES TO FINANCIAL STATEMENTS**

(3)

Year Ended December 31, 2016

a. Aggregate maximum potential of future payments of all guarantees (undiscounted) the guarantor could be required to make under guarantees:	\$ 838,734,282
b. Current liability recognized in the financial statements:	
1. Noncontingent liabilities	-
2. Contingent liabilities	-
c. Ultimate financial statement impact if action under the guarantee is required:	
1. Investments in SCA	\$ 188,743,282
2. Joint venture	-
3. Dividends to stockholders	-
4. Expense	650,000,000
5. Other	-
6. Total	<u>\$ 838,743,282</u>

## b. Assessments:

The Company is subject to insurance guaranty fund laws in the states in which it does business. These laws assess insurance companies' amounts to be used to pay benefits to policyholders and policy claimants of insolvent insurance companies. Many states allow these assessments to be credited against future premium taxes. The Company believes such assessments in excess of amounts accrued will not materially impact its financial position, results of operations or liquidity.

## c. Gain contingencies:

No material gain contingencies were realized subsequent to December 31, 2016 through the filing date.

## d. The Company did not have any claims related to extra contractual obligations in 2016.

## e. Joint and several liabilities: The Company has no joint and several liabilities.

## f. All other contingencies:

The Company is involved in litigation arising in the normal course of business, which seeks compensatory damages, punitive damages and equitable remedies. Although the Company is not aware of any actions or allegations that reasonably should give rise to a material adverse impact to the Company's financial position or liquidity, the outcome of litigation cannot be foreseen with certainty. It is the opinion of management that the ultimate resolution of these matters will not materially impact the Company's financial position or liquidity. However, the outcome of a particular proceeding may be material to the Company's results of operations for a particular period depending upon, among other factors, the size of the loss and the level of the Company's results of operations for the period.

In 2008, the Company and MMHLLC were named as defendants in several lawsuits filed in federal and state courts in Colorado, Massachusetts, New Mexico, New York and Washington by investors seeking to recover investments they allegedly lost as a result of the "Ponzi" scheme run by Bernard L. Madoff through his company, Bernard L. Madoff Investment Securities, LLC. Certain of these lawsuits also named Tremont Group Holdings, Inc. and certain of its affiliates, and certain of their respective current or former officers and directors, as defendants. The plaintiffs alleged a variety of state law and federal security claims against the defendants. In 2015, the companies entered into settlement agreements and paid \$38,500,000 in connection with these agreements. The Company recorded the loss as a change in net unrealized capital losses, net of tax, in the 2015 Statutory Statements of Changes in Surplus.

In 2009, several lawsuits were filed as putative class actions and later consolidated before the federal district court in Colorado in connection with the investment performance of Oppenheimer Rochester California Municipal Fund (the California Fund Suit). This fund was advised by OFI and distributed by its subsidiary, OppenheimerFunds Distributor, Inc. (OFDI). The plaintiffs in the California Fund Suit asserted claims against the Company, OFI, OFDI and certain present and former trustees and officers of the fund under federal securities laws and allege, among other things, the disclosure documents of the fund contained misrepresentations and omissions, that the investment policies of the fund were not followed, and that the fund and the other defendants violated federal securities laws and regulations and certain state laws. In March 2015, the district court granted the plaintiffs' motion to certify a class and to appoint class representatives and class counsel. In December 2015, the appeals court denied defendants' petition to appeal the district court's class certification order. Motions for summary judgment are pending. Mediation occurred in January 2017, which did not result in a settlement. The expected settlement does not have a significant financial impact on the Company.

In 2009, the Company was named as a defendant in a lawsuit filed in North Carolina state court related to certain losses in a bank owned life insurance (BOLI) policy issued by the Company. The plaintiff alleges, among other things, fraud, breach of contract and breach of fiduciary duty claims against the Company, and it seeks to recover losses arising from investments pursuant to the BOLI policy. The parties have completed discovery and are preparing for trial. In May 2015, the plaintiff voluntarily dismissed its complaint and refiled the case. The Company believes it has substantial defenses and will continue to vigorously defend itself in this action. No reasonable estimate can be made at this time regarding the potential liability, if any, or the amount or range of any loss that may result from this suit.

In 2010, Christina Chavez (Chavez) filed a putative class action complaint in California state court against the Company. Chavez alleges that the Company breached its obligations to its term life policyholders in California by not paying dividends on those policies. The parties are engaged in active discovery. In 2014, the parties participated in a mediation of their dispute, which did not result in a settlement. In July 2015, the judge certified a subclass consisting of one of twenty-six potential term products at issue in this case. All remaining subclasses were dismissed without prejudice. The case is expected to proceed to trial in 2017. The Company believes it has substantial defenses and will continue to vigorously defend itself in this action. No reasonable estimate can be made at this time regarding the potential liability, if any, or the amount or range of any loss that may result from this claim.

In 2012, Karen Bacchi filed a putative class action complaint against the Company in federal court in Massachusetts alleging that the Company breached its contracts by allegedly failing to distribute surplus in excess of the statutorily prescribed limit. In January 2017, the parties reached a resolution to settle the lawsuit for \$37,500,000, which was recorded as a combination of policyholders' benefits, dividends to policyholders, legal fees and costs included in general insurance expenses. The settlement is pending the court's final approval.

## NOTES TO FINANCIAL STATEMENTS

In 2013, seven participants in the MassMutual Thrift Plan (the Thrift Plan) filed a putative class action complaint in federal court in Massachusetts. The complaint alleged, among other things, that the Company, the Investment Fiduciary Committee, the Thrift Plan Administrative Committee and individually named "fiduciaries" breached their duties by allowing the Thrift Plan to pay excessive fees and by engaging in self-dealing. In June 2016, the parties reached an agreement to settle the matter. In November 2016, the court entered a final order and judgment approving the settlement with payments to occur in 2017. The final settlement did not have a significant financial impact on the Company.

In January 2016, Deborah Bishop-Bristol filed a putative class action complaint against the Company in federal court in Connecticut. The lawsuit alleges that the Company breached its fiduciary duty by controlling the crediting rate, and therefore the compensation earned on the stable value products. Further, the complaint alleges that the Company failed to adequately disclose the pricing spread and accepted excessive fees for investment, management and administrative services. In April 2016, the court granted the Company's motion to transfer the case to federal court in Massachusetts. The Company believes that it has substantial defenses and will vigorously defend itself in this action. No reasonable estimate can be made regarding the potential liability, if any, or the amount or range of any loss that may result from this claim.

g. **Regulatory matters:**

The Company is subject to governmental and administrative proceedings and regulatory inquiries, examinations and investigations in the ordinary course of its business. In connection with regulatory inquiries, examinations and investigations, the Company has been contacted by various regulatory agencies including, among others, the Securities and Exchange Commission, the U.S. Department of Labor and various state insurance departments and state attorneys general. The Company has cooperated fully with these regulatory agencies with regard to their inquiries, examinations and investigations and has responded to information requests and comments.

Market volatility in the financial services industry over the last several years has contributed to increased scrutiny of the entire financial services industry. Therefore, the Company believes that it is reasonable to expect that proceedings, regulatory inquiries, examinations and investigations into the insurance and financial services industries will continue for the foreseeable future. Additionally, new industry-wide legislation, rules and regulations could significantly affect the insurance and financial services industries as a whole. It is the opinion of management that the ultimate resolution of these regulatory inquiries, examinations, investigations, legislative and regulatory changes of which we are aware will not materially impact the Company's financial position or liquidity. However, the outcome of a particular matter may be material to the Company's operating results for a particular period depending upon, among other factors, the financial impact of the matter and the level of the Company's results of operations for the period.

### Note 15 – Leases

a.

(1) The Company leases office space and equipment in the normal course of business under various noncancelable operating lease agreements. Additionally, the Company, as lessee, has entered various sublease agreements with affiliates for office space, such as OFI and Barings. Total rental expense on net operating leases, recorded in general insurance expenses, was \$129,989,845 for the year ended December 31, 2016 and \$76,248,233 for the year ended December 31, 2015. Net operating leases are net of sublease receipts of \$7,558,103 for the year ended December 31, 2016 and \$6,470,875 for the year ended December 31, 2015.

(2) At December 31, 2016, the minimum aggregate rental commitments are as follows:

	Years Ended December 31,	Affiliated		
		Gross	Subleases	Net
1.	2017	\$ 162,741,856	\$ 8,490,923	\$ 154,250,933
2.	2018	140,121,313	8,377,303	131,744,010
3.	2019	111,592,327	8,394,366	103,197,961
4.	2020	96,294,195	8,238,492	88,055,703
5.	2021	59,253,768	6,217,251	53,036,517
6.	Thereafter	64,161,880	4,309,622	59,852,258
7.	Total	<u>\$ 634,165,339</u>	<u>\$ 44,027,957</u>	<u>\$ 590,137,382</u>

(3) The Company has entered into sale-leaseback transactions with unrelated parties to sell and leaseback certain fixed assets with book value of \$120,066,906, \$110,003,096 and \$99,796,951 which resulted in no gain or loss. The leases have five year terms which expire in 2018, 2020 and 2021 with annual lease payments of \$24,013,381, \$22,000,619 and \$19,959,390. At the end of the leases, the Company has the option to purchase the underlying assets at fair value.

b. Leasing is not a significant part of the Company's business activities.

### Note 16 – Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk

(1) The notional amounts of the company's financial instruments with off-balance sheet risk are as follows:

	December 31,			
	2016	2015	2016	2015
	Assets		Liabilities	
a. Swaps	\$ 84,148,747,430	\$ 69,390,062,093	\$ 90,453,376,375	\$ 79,891,840,902
b. Futures	3,196,354,350	2,026,946,970	-	-
c. Options	6,676,876,900	6,557,604,881	5,306,000	108,939,132
d. Total	<u>\$ 94,021,978,680</u>	<u>\$ 77,974,613,944</u>	<u>\$ 90,458,682,375</u>	<u>\$ 80,000,780,034</u>

See Schedule DB of the Company's Annual Statement for additional detail.

(2) See Note 8 "Derivative Instruments" for a discussion of the credit and market risk of derivative financial instruments, and the cash requirements and accounting policies related to those instruments.

## NOTES TO FINANCIAL STATEMENTS

- (3) See Note 8 "Derivative Instruments" for a discussion of the amount of accounting losses the Company would incur if any party to the financial instrument failed completely to perform according to terms of the contract and the collateral due proved to be of no value to the Company.
- (4) See Note 8 "Derivative Instruments" for a discussion of the Company's policy of requiring collateral to support financial instruments subject to credit risk, information about the Company's access to that collateral and the nature and description of the collateral supporting those financial instruments.

### **Note 17 – Sale, Transfer and Servicing of Financial Assets and Extinguishments of Liabilities**

- a. During 2016 and 2015, the Company did not transfer any receivables that that were reported as sales.
- b. Transfer and Servicing of Financial Assets:
- (1) The Company did not participate in securities lending as of December 31, 2016 or 2015.
  - (2) The Company did not have any servicing assets or liabilities in 2016 or 2015.
  - (3) The Company did not have any servicing assets or liabilities in 2016 or 2015.
  - (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2016 or 2015.
  - (5) The Company did not have any transfers of financial assets accounted for as secured borrowing in 2016 or 2015.
  - (6) The Company did not have any transfers of receivables with recourse in 2016 or 2015.
  - (7) See Note 5e2 "Repurchase Agreements".
- c. Wash sales:
- (1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days of the sale date to enhance the Company's yield on its investment portfolio.
  - (2) The Company did not sell any securities with the NAIC Designation 3 or below for the year ended December 31, 2016 or 2015, that were reacquired within 30 days of the sale date.

### **Note 18 – Gain or Loss to the Reporting Entity from Uninsured Plans and the Uninsured Portion of Partially Insured Plans**

The Company did not write any accident and health plans. Therefore, the Company did not have any uninsured accident and health plans.

### **Note 19 – Direct Premium Written/Produced By Managing General Agents/Third Party Administrators**

The Company writes its remaining group life, accident and health business through a third party administrator. Pursuant to a 1994 reinsurance agreement, the Company cedes 100% of this business. Premium ceded was \$160,081 in 2016 and \$168,621 in 2015.

### **Note 20 – Fair Value Measurements**

- a. Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The authoritative guidance around fair value establishes a measurement framework that includes a hierarchy used to classify the inputs used in measuring fair value. The hierarchy prioritizes the inputs to valuation techniques into three levels. Each level reflects a unique description of the inputs that are significant to the fair value measurements. The levels of the fair value hierarchy are as follows:

Level 1 – Observable inputs in the form of quoted prices for identical instruments in active markets.

Level 2 – Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be derived from observable market data for substantially the full term of the assets or liabilities.

Level 3 – One or more unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using internal models, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

When available, the Company generally uses unadjusted quoted market prices from independent sources to determine the fair value of investments, and classifies such items within Level 1 of the fair value hierarchy. If quoted prices are not available, prices are derived from observable market data for similar assets in an active market or obtained directly from brokers for identical assets traded in inactive markets. Investments that are priced using these inputs are classified within Level 2 of the fair value hierarchy. When some of the necessary observable inputs are unavailable, fair value is based upon internally developed models. These models use inputs not directly observable or correlated with observable market data. Typical inputs, which are integrated in the Company's internal discounted cash flow models and discounted earnings models include, but are not limited to, issuer spreads derived from internal credit ratings and benchmark yields such as the LIBOR, cash flow estimates and earnings before interest, taxes, depreciation and amortization estimates. Investments that are priced with such unobservable inputs are classified within Level 3 of the fair value hierarchy.

The Company has established and maintains policies and guidelines that govern its valuation methodologies and their consistent application. These policies and guidelines address the use of inputs, price source hierarchies and provide controls around the valuation processes. These controls include appropriate review and analysis of prices against market activity or indicators for reasonableness, approval of price source changes, price overrides, methodology changes and classification of fair value hierarchy levels. The valuation policies and guidelines are reviewed and updated as appropriate.

Annually, the Company reviews the primary pricing vendor to validate that the inputs used in that vendor's pricing process are deemed to be market observable as defined above. While the Company was not provided access to proprietary models of the vendor, the reviews have included on-site walk-throughs of the pricing process, methodologies and control procedures for each asset class and level for which prices are provided. The review also included an examination of the underlying inputs and assumptions for a sample of individual securities across asset classes. In addition, the Company and its pricing vendors have an established challenge process in place for all security valuations, which facilitates identification and resolution of prices that fall outside expected ranges. The Company believes that the prices received from the pricing vendors are representative of prices that would be received to sell the assets at the applicable measurement date (exit prices) and are classified appropriately in the hierarchy.

## NOTES TO FINANCIAL STATEMENTS

The fair value of group annuity contracts and other deposits is determined by multiplying the book value of the contract by an average market value adjustment factor. The market value adjustment factor is directly related to the difference between the book value of client liabilities and the present value of installment payments discounted at current market value yields. The market value yield is measured by the Barclay's Aggregate Bond Index, subject to certain adjustments, and the installment period is equivalent to the duration of the Company's invested asset portfolio.

The fair value of individual annuity and supplementary contracts is determined using one of several methods based on the specific contract type. For short-term contracts, generally less than 30 days, the fair value is assumed to be the book value. For contracts with longer durations, guaranteed interest contracts and investment-type contracts, the fair value is determined by calculating the present value of future cash flows discounted at current market interest rates, the risk-free rate or a current pricing yield curve based on pricing assumptions using assets of a comparable corporate bond quality. Annuities receiving dividends are accumulated at the average minimum guaranteed rate and discounted at the risk-free rate. All others are valued using cash flow projections from the Company's asset-liability management analysis.

1. The following presents the Company's fair value hierarchy for assets and liabilities that are carried at fair value:

	December 31, 2016			
	Level 1	Level 2	Level 3	Total
<b>Financial assets:</b>				
Bonds:				
States, territories and possessions	\$ -	\$ 7,543,820	\$ -	\$ 7,543,820
Special revenue	-	1,229,483	-	1,229,483
Industrial and miscellaneous	-	3,305,960	56,833,539	60,139,499
Parent, subsidiaries and affiliates	-	57,519,736	51,963,109	109,482,845
Preferred stocks	-	-	2,734,341	2,734,341
Common stock - subsidiaries and affiliates	486,881,832	23,261,703	63,196,191	573,339,726
Common stock - unaffiliated	581,611,509	349,552,279	188,576,330	1,119,740,118
Derivatives:				
Interest rate swaps	-	8,084,068,385	-	8,084,068,385
Options	-	653,128,451	-	653,128,451
Currency swaps	-	936,681,635	-	936,681,635
Forward contracts	-	51,760,755	-	51,760,755
Credit default swaps	-	3,816,266	-	3,816,266
Separate account assets	39,641,341,033	21,824,706,549	737,948,300	62,203,995,882
Total financial assets carried at fair value	\$ 40,709,834,374	\$ 31,996,575,022	\$ 1,101,251,810	\$ 73,807,661,206
<b>Financial liabilities:</b>				
Derivatives:				
Interest rate swaps	\$ -	\$ 5,915,235,253	\$ -	\$ 5,915,235,253
Options	-	5,791,830	-	5,791,830
Currency swaps	-	36,740,542	-	36,740,542
Forward contracts	-	55,486,004	-	55,486,004
Credit default swaps	-	789,072	-	789,072
Total financial liabilities carried at fair value	\$ -	\$ 6,014,042,701	\$ -	\$ 6,014,042,701

For the year ended December 31, 2016, there were no significant transfers between Level 1 and Level 2.

**NOTES TO FINANCIAL STATEMENTS**

	December 31, 2015			
	Level 1	Level 2	Level 3	Total
<b>Financial assets:</b>				
<b>Bonds:</b>				
States, territories and possessions	\$ -	\$ 2,025,290	\$ -	\$ 2,025,290
Special revenue	-	4,387,512	-	4,387,512
Industrial and miscellaneous	-	18,406,412	21,822,270	40,228,682
Parent, subsidiaries and affiliates	-	46,645,754	44,987,196	91,632,950
Preferred stocks	-	3,335,616	2,433,928	5,769,544
Common stock - subsidiaries and affiliates	307,722,508	93,756,526	39,651,503	441,130,537
Common stock - unaffiliated	444,993,908	515,494,915	179,143,468	1,139,632,291
Separate account assets	39,355,125,013	20,305,097,915	725,326,815	60,385,549,743
<b>Derivatives:</b>				
Interest rate swaps	-	8,032,773,588	-	8,032,773,588
Options	-	622,038,103	-	622,038,103
Currency swaps	-	536,223,936	-	536,223,936
Forward contracts	-	54,705,003	-	54,705,003
Credit default swaps	-	2,109,518	-	2,109,518
<b>Total financial assets carried at fair value</b>	<b>\$ 40,107,841,429</b>	<b>\$ 30,237,000,088</b>	<b>\$ 1,013,365,180</b>	<b>\$ 71,358,206,697</b>
<b>Financial liabilities:</b>				
<b>Derivatives:</b>				
Interest rate swaps	\$ -	\$ 5,796,878,600	\$ -	\$ 5,796,878,600
Options	-	7,137,990	-	7,137,990
Currency swaps	-	4,362,189	-	4,362,189
Forward contracts	-	12,530,171	-	12,530,171
Credit default swaps	-	1,971,711	-	1,971,711
<b>Total financial liabilities carried at fair value</b>	<b>\$ -</b>	<b>\$ 5,822,880,661</b>	<b>\$ -</b>	<b>\$ 5,822,880,661</b>

For the year ended December 31, 2015, there were no significant transfers between Level 1 and Level 2.

2. The following presents changes in the Company's Level 3 financial instruments that are carried at fair value:

	Balance as of 01/01/2016		Transfers <sup>(1)</sup>		Gains (Losses) in Net Income		Gains (Losses) in Surplus		Purchases		Issuances		Sales		Settlements		Balance as of 12/31/2016
	In	Out	Net Income	Surplus	Purchases	Issuances	Sales	Settlements									
<b>Financial assets:</b>																	
<b>Bonds:</b>																	
Industrial and miscellaneous	\$ 21,822,270	\$ 62,018,704	\$ (400,000)	\$ (11,937,984)	\$ (13,183,256)	\$ 408,913	\$ 4,057,059	\$ (61)	\$ (5,952,106)	\$	\$	\$	\$	\$	\$	\$	\$ 56,833,539
Parent, subsidiaries and affiliates	44,987,196	8,962,866	-	564,823	6,975,913	1,953,045	10,982,187	(2,523,873)	(19,939,048)								51,963,109
Preferred stock	2,433,928	-	(1,565,363)	-	(92,373)	1,958,149	-	-	-								2,734,341
Common stock - subsidiaries and affiliates	39,651,503	15,896,989	-	18,529	7,478,296	-	369,403	(18,529)	(200,000)								63,196,191
Common stock - unaffiliated	179,143,468	4,578,828	-	(490,006)	(4,892,076)	12,022,672	791,170	(1,726,973)	(850,753)								188,576,330
Separate account assets	725,326,815	5,096,000	-	21,359,610	-	149,191,756	-	(152,961,206)	(10,064,675)								737,948,300
<b>Total financial assets</b>	<b>\$ 1,013,365,180</b>	<b>\$ 96,553,387</b>	<b>\$ (1,965,363)</b>	<b>\$ 9,514,972</b>	<b>\$ (3,713,496)</b>	<b>\$ 165,534,535</b>	<b>\$ 16,199,819</b>	<b>\$ (157,230,642)</b>	<b>\$ (37,006,582)</b>								<b>\$ 1,101,251,810</b>

<sup>(1)</sup>Transfers include assets that are either no longer carried at fair value, or have just begun to be carried at fair value, such as assets with no level changes but a change in lower of cost or market carrying basis.

	Balance as of 01/01/2015		Transfers <sup>(1)</sup>		Gains (Losses) in Net Income		Gains (Losses) in Surplus		Purchases		Issuances		Sales		Settlements		Balance as of 12/31/2015
	In	Out	Net Income	Surplus	Purchases	Issuances	Sales	Settlements									
<b>Financial assets:</b>																	
<b>Bonds:</b>																	
Industrial and miscellaneous	\$ 109,015,810	\$ -	\$ (43,673,606)	\$ (40,000,056)	\$ 1,249,215	\$ -	\$ 3,166,985	\$ (4,183,244)	\$ (3,752,834)	\$	\$	\$	\$	\$	\$	\$	\$ 21,822,270
Parent, subsidiaries, and affiliates	78,490,924	-	(26,558,966)	(368,793)	(5,108,982)	-	-	-	(1,466,987)								44,987,196
Preferred Stock	3,496,368	-	(1,184,136)	-	121,696	-	-	-	-								2,433,928
Common stock - subsidiaries and affiliates	81,063,876	3,552,769	-	8,120,543	(28,561,294)	460,000,237	35,064,941	(493,340,895)	(26,248,674)								39,651,503
Common stock - unaffiliated	159,740,306	-	(4,650,981)	10,561,496	(10,797,059)	36,764,277	7,234	(11,955,229)	(526,576)								179,143,468
Separate account assets	599,966,983	-	-	25,699,837	-	168,511,837	-	(68,227,094)	(624,748)								725,326,815
<b>Total financial assets</b>	<b>\$ 1,031,774,267</b>	<b>\$ 3,552,769</b>	<b>\$ (76,067,689)</b>	<b>\$ 4,013,027</b>	<b>\$ (43,096,424)</b>	<b>\$ 665,276,351</b>	<b>\$ 38,239,160</b>	<b>\$ (577,706,462)</b>	<b>\$ (32,619,819)</b>								<b>\$ 1,013,365,180</b>

<sup>(1)</sup>Transfers include assets that are either no longer carried at fair value, or have just begun to be carried at fair value, such as assets with no level changes but a change in lower of cost or market carrying basis.

## NOTES TO FINANCIAL STATEMENTS

3. The Company reviews the fair value hierarchy classifications at each reporting period. Overall, reclassifications between levels occur when there are changes in the observability of inputs and market activity used in the valuation of a financial asset or liability. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. Given the types of assets classified as Level 1 (primarily equity securities and mutual fund investments), transfers between Level 1 and Level 2 measurement categories are expected to be infrequent. Transfers into and out of Level 3 are summarized in the schedule of changes in Level 3 assets and liabilities.

4. *Valuation Techniques and Inputs*

The Company determines the fair value of its investments using primarily the market approach or the income approach. The use of quoted prices for identical assets and matrix pricing or other similar techniques are examples of market approaches, while the use of discounted cash flow methodologies is an example of the income approach. The Company attempts to maximize the use of observable inputs and minimize the use of unobservable inputs in selecting whether the market or the income approach is used.

A description of the significant valuation techniques and inputs to the determination of estimated fair value for the more significant asset and liability classes measured at fair value on a recurring basis and categorized within Level 2 and Level 3 of the fair value hierarchy is as follows:

*Separate account assets* - These assets primarily include bonds (industrial and miscellaneous; U.S. government and agencies), and derivatives. Their fair values are determined as follows:

*Bonds (Industrial and miscellaneous)* - These securities are principally valued using the market or the income approaches. Level 2 valuations are based primarily on quoted prices in markets that are not active, broker quotes, matrix pricing or other similar techniques that use standard market observable inputs such as benchmark yields, spreads versus benchmark yields, new issuances, issuer ratings, duration, and trades of identical or comparable securities. Privately placed securities are valued using discounted cash flow models using standard market observable inputs, and inputs derived from, or corroborated by, market observable data including market yield curve, duration, call provisions, observable prices and spreads for similar publicly traded or privately traded issuances that incorporate the credit quality and industry sector of the issuer. This level also includes securities priced by independent pricing services that use observable inputs. Valuations based on matrix pricing or other similar techniques that utilize significant unobservable inputs or inputs that cannot be derived principally from, or corroborated by, observable market data, including adjustments for illiquidity, delta spread adjustments or spreads to reflect industry trends or specific credit-related issues are classified as Level 3. In addition, inputs including quoted prices for identical or similar securities that are less liquid and based on lower levels of trading activity than securities classified in Level 2 are classified as Level 3.

*Bonds (U.S. government and agencies)* - These securities are principally valued using the market approach. Level 2 valuations are based primarily on quoted prices in markets that are not active, or using matrix pricing or other similar techniques using standard market observable inputs such as the benchmark U.S. Treasury yield curve, the spreads versus the U.S. Treasury yield curve for the identical security and comparable securities that are actively traded.

*Derivative assets and liabilities* - These financial instruments are primarily valued using the market approach. The estimated fair value of derivatives is based primarily on quotations obtained from counterparties and independent sources, such as quoted market values received from brokers. These quotations are compared to internally derived prices and a price challenge is lodged with the counterparties and an independent source when a significant difference cannot be explained by appropriate adjustments to the internal model. When quoted market values are not reliable or available, the value is based upon an internal valuation process using market observable inputs that other market participants would use. Significant inputs to the valuation of derivative financial instruments include overnight index swaps and LIBOR basis curves, interest rate volatility, swap yield curve, currency spot rates, cross currency basis curves and dividend yields. Due to the observability of the significant inputs to these fair value measurements, they are classified as Level 2.

The use of different assumptions or valuation methodologies may have a material impact on the estimated fair value amounts. For the periods presented, there were no significant changes to the Company's valuation techniques.

5. Derivative assets and liabilities fair value disclosures on a gross basis are included in paragraph 1 above. Since there are no derivative assets or liabilities classified in Level 3, the reconciliation disclosures required under paragraphs 2 through 4 are not applicable.

- b. The Company provides additional fair value information in Note 21. "Other Items".

## NOTES TO FINANCIAL STATEMENTS

c. The following presents a summary of the carrying values and fair values of the Company's financial instruments:

	December 31, 2016					
	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3	Not Practicable (Carrying Value)
Financial assets:						
Bonds:						
U. S. government and agencies	\$ 7,327,249,403	\$ 6,819,359,058	\$ -	\$ 7,323,337,358	\$ 3,912,045	\$ -
All other governments	934,303,664	923,699,348	-	863,291,001	71,012,663	-
States, territories and possessions	723,249,478	676,412,175	-	723,249,478	-	-
Political subdivisions	514,142,376	482,667,254	-	514,142,376	-	-
Special revenue	6,166,004,840	5,604,643,065	-	6,133,478,774	32,526,066	-
Industrial and miscellaneous	64,477,981,544	62,805,781,196	-	39,230,699,303	25,247,282,241	-
Parent, subsidiaries and affiliates	6,604,482,057	6,508,255,599	-	615,097,030	5,989,385,027	-
Preferred stocks	481,903,752	464,925,273	503,400	30,605,241	450,795,111	-
Common stocks - subsidiaries and affiliates <sup>(1)</sup>	573,339,726	573,339,726	486,881,832	23,261,703	63,196,191	-
Common stocks - unaffiliated	1,119,740,118	1,119,740,118	581,611,509	349,552,279	188,576,330	-
Mortgage loans - commercial	19,660,034,378	19,193,187,754	-	-	19,660,034,378	-
Mortgage loans - residential	1,728,006,318	1,767,903,811	-	-	1,728,006,318	-
Cash, cash equivalents and short-term investments	3,725,936,280	3,725,936,280	(95,241,558)	3,821,177,838	-	-
Derivatives:						
Interest rate swaps	8,633,029,641	8,084,068,386	-	8,633,029,641	-	-
Options	653,128,451	653,128,451	-	653,128,451	-	-
Currency swaps	936,681,635	936,681,635	-	936,681,635	-	-
Forward contracts	51,760,755	51,760,756	-	51,760,755	-	-
Credit default swaps	39,763,838	37,821,597	-	39,763,838	-	-
Separate account assets	62,203,995,882	62,203,995,882	39,641,341,033	21,824,706,549	737,948,300	-
Financial liabilities:						
Repurchase agreements	4,729,192,054	4,729,192,054	-	4,729,192,054	-	-
Commercial paper	249,940,069	249,940,069	-	249,940,069	-	-
Guaranteed interest contracts	7,028,012,044	7,090,435,309	-	-	7,028,012,044	-
Group annuity contracts and other deposits	19,661,467,866	19,096,549,135	-	-	19,661,467,866	-
Individual annuity contracts	8,272,459,416	6,714,580,201	-	-	8,272,459,416	-
Supplementary contracts	1,153,297,345	1,152,123,682	-	-	1,153,297,345	-
Derivatives:						
Interest rate swaps	5,960,272,303	5,915,235,253	-	5,960,272,303	-	-
Options	5,791,830	5,791,830	-	5,791,830	-	-
Currency swaps	36,740,542	36,740,542	-	36,740,542	-	-
Forward contracts	55,486,004	55,486,004	-	55,486,004	-	-
Credit default swaps	789,072	789,072	-	789,072	-	-

<sup>(1)</sup> Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$13,670,304,964.

## NOTES TO FINANCIAL STATEMENTS

December 31, 2015

	Aggregate		Admitted			Not Practicable (Carrying Value)
	Fair Value	Assets	Level 1	Level 2	Level 3	
Financial assets:						
Bonds:						
U. S. government and agencies	\$ 8,526,297,862	\$ 8,015,146,491	\$ -	\$ 8,521,541,570	\$ 4,756,292	\$ -
All other governments	762,254,457	761,981,449	-	690,626,966	71,627,491	-
States, territories and possessions	775,665,283	726,674,452	-	775,665,283	-	-
Political subdivisions	503,245,574	468,247,496	-	503,245,574	-	-
Special revenue	6,060,747,491	5,414,143,402	-	6,024,457,987	36,289,504	-
Industrial and miscellaneous	58,259,806,990	57,983,900,822	-	35,009,485,843	23,250,321,147	-
Parent, subsidiaries and affiliates	6,340,300,045	6,176,502,009	-	645,604,264	5,694,695,781	-
Preferred stocks	520,240,389	532,949,649	12,936,825	30,465,429	476,838,135	-
Common stock - subsidiaries and affiliates <sup>(1)</sup>	441,130,537	441,130,537	307,722,508	93,756,526	39,651,503	-
Common stock - unaffiliated	1,139,632,291	1,139,632,291	444,993,908	515,494,915	179,143,468	-
Mortgage loans - commercial	20,815,373,187	20,286,922,792	-	-	20,815,373,187	-
Mortgage loans - residential	1,683,836,408	1,720,806,602	-	-	1,683,836,408	-
Cash, cash equivalents and short-term investments	3,048,645,110	3,048,645,110	174,097,018	2,874,548,092	-	-
Derivatives:						
Interest rate swaps	8,553,869,196	8,032,773,588	-	8,553,869,196	-	-
Options	622,038,103	622,038,103	-	622,038,103	-	-
Currency swaps	536,223,936	536,223,936	-	536,223,936	-	-
Forward contracts	54,705,003	54,705,003	-	54,705,003	-	-
Credit default swaps	12,936,195	22,337,494	-	12,936,195	-	-
Separate account assets	60,385,549,743	60,385,549,743	39,355,125,013	20,305,097,915	725,326,815	-
Financial liabilities:						
Repurchase agreements	5,130,020,438	5,130,020,438	-	5,130,020,438	-	-
Commercial paper and other borrowed money	276,817,818	276,817,818	-	249,961,873	26,855,945	-
Guaranteed investment contracts and other deposits	5,933,135,866	5,944,199,556	-	-	5,933,135,866	-
Individual annuity contracts	18,667,420,320	17,939,042,206	-	-	18,667,420,320	-
Individual annuity contracts	8,025,472,790	6,501,371,583	-	-	8,025,472,790	-
Supplementary contracts	1,094,675,561	1,093,629,530	-	-	1,094,675,561	-
Derivatives:						
Interest rate swaps	5,839,065,952	5,796,878,600	-	5,839,065,952	-	-
Options	7,137,990	7,137,990	-	7,137,990	-	-
Currency swaps	4,362,189	4,362,189	-	4,362,189	-	-
Forward contracts	12,530,171	12,530,171	-	12,530,171	-	-
Credit default swaps	19,978,040	19,431,763	-	19,978,040	-	-

<sup>(1)</sup>Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had statutory carrying values of \$7,519,199,138.

- d. For the year ended December 31, 2016, the Company had no investments where it was not practicable to estimate fair value.

**Note 21 – Other Items**

- a. There were no unusual or infrequent items requiring disclosure.
- b. There were no troubled debt restructurings that occurred during the period for which the financial statements are presented.
- c. Other disclosures:  
The Company had assets on deposit with government authorities or trustees, as required by law, in the amount of \$8,582,961 as of December 31, 2016 and \$8,361,229 as of December 31, 2015.

In November 2015, the Company purchased corporate-owned life insurance (COLI) from unaffiliated third party insurers on certain qualified senior employees. The primary purpose of the program is to offset future employee benefit expenses. The Company pays all premiums and is the owner and beneficiary of these policies. The Company had recorded cash surrender values on these policies of \$1,980,550,440 as of December 31, 2016 and \$1,926,962,561 as of December 31, 2015.

**Business risks**

The Company operates in a business environment subject to various risks and uncertainties. The principal risks include insurance and underwriting risks, investment and interest rate risks, currency exchange risk and credit risk.

**Insurance and underwriting risks**

The Company prices its products based on estimated benefit payments reflecting assumptions with respect to mortality, morbidity, longevity, persistency, interest rates and other factors. If actual policy experience emerges that is significantly and adversely different from assumptions used in product pricing, the effect could be material to the profitability of the Company. For participating whole life products, the Company's dividends to policyholders primarily reflect the difference between actual investment, mortality, expense and persistency experience and the experience embedded in the whole life premiums and guaranteed elements. The Company also reinsures certain life insurance and other long-term care insurance policies to mitigate the impact of its underwriting risk.

**NOTES TO FINANCIAL STATEMENTS****Investment and interest rate risks**

The fair value, cash flows and earnings of investments can be influenced by a variety of factors including changes in interest rates, credit spreads, equity markets, portfolio asset allocation and general economic conditions. The Company employs a rigorous asset/liability management process to help mitigate the economic impacts of various investment risks, in particular interest rate risk. By effectively matching the market sensitivity of assets with the liabilities they support, the impact of interest rate changes is addressed, on an economic basis, as the change in the value of the asset is offset by a corresponding change in the value of the supported liability. The Company uses derivatives, such as interest rate swaps and swaptions, as well as synthetic assets to reduce interest rate and duration imbalances determined in asset/liability analyses.

The levels of U.S. interest rates are influenced by U.S. monetary policies and by the relative attractiveness of U.S. markets to investors versus other global markets. As interest rates increase, certain debt securities may experience amortization or prepayment speeds that are slower than those assumed at purchase, impacting the expected maturity of these securities and the ability to reinvest the proceeds at the higher yields. Rising interest rates may also result in a decrease in the fair value of the investment portfolio. As interest rates decline, certain debt securities may experience accelerated amortization and prepayment speeds than what was assumed at purchase. During such periods, the Company is at risk of lower net investment income as it may not be able to reinvest the proceeds at comparable yields. Declining interest rates may also increase the fair value of the investment portfolio.

Interest rates also have an impact on the Company's products with guaranteed minimum payouts and on interest credited to account holders. As interest rates decrease, investment spreads may contract as crediting rates approach minimum guarantees, resulting in an increased liability.

In periods of increasing interest rates, policy loans, surrenders and withdrawals may increase as policyholders seek investments with higher perceived returns. This could result in cash outflows requiring the Company to sell invested assets at a time when the prices of those assets are adversely affected by the increase in market interest rates, which could cause the Company to realize investment losses.

**Currency exchange risk**

The Company has currency risk due to its non-U.S. dollar investments and medium-term notes along with its indirect international operations. The Company mitigates currency risk through the use of cross-currency swaps and forward contracts. Cross-currency swaps are used to minimize currency risk for certain non-U.S. dollar assets and liabilities through a pre-specified exchange of interest and principal. Forward contracts are used to hedge movements in exchange rates.

**Credit and other market risks**

The Company manages its investments to limit credit and other market risks by diversifying its portfolio among various security types and industry sectors as well as purchasing credit default swaps to transfer some of the risk.

Stressed conditions, volatility and disruptions in global capital markets or in particular markets or financial asset classes can have an adverse effect on the Company, in part because the Company has a large investment portfolio and assets supporting the Company's insurance liabilities are sensitive to changing market factors. Global market factors, including interest rates, credit spread quality, equity prices, real estate markets, foreign currency exchange rates, consumer spending, business investment, government spending, the volatility and strength of the capital markets, deflation and inflation, all affect the business and economic environment and, ultimately, the profitability of the Company's business. Disruptions in one market or asset class can also spread to other markets or asset classes. Upheavals in the financial markets can also affect the Company's business through their effects on general levels of economic activity, employment and customer behavior.

Significant volatility in the financial markets, and government actions taken in response, may exacerbate some of the risks the Company faces. The Company holds investments in energy and certain other commodity sectors, which have experienced similar overall market volatility and declines. With the continued weaker economic outlook in these sectors, there may be an increase in reported default rates or potential downgrades to the ratings of companies exposed to these sectors. In addition, concerns over the solvency of certain countries and sovereignties and the entities that have significant exposure to their debt have created market volatility. This volatility may continue to affect the performance of various asset classes until there is an ultimate resolution of the sovereign debt related concerns.

Real estate markets are monitored continuously with attention on regional differences in price performance, absorption trends and supply and demand fundamentals that can impact the rate of foreclosures and delinquencies. Public sector strengths and weaknesses, job growth and macro-economic issues are factors that are closely monitored to identify any impact on the Company's real estate related investments.

The CMBS, RMBS and leveraged loan sectors are sensitive to evolving conditions that can impair the cash flows realized by investors and is subject to uncertainty. Management's judgment regarding OTTI and estimated fair value depends upon the evolving investment sector and economic conditions. It can also be affected by the market liquidity, a lack of which can make it difficult to obtain accurate market prices for RMBS and other investments, including CMBS and leveraged loans. Any deterioration in economic fundamentals, especially related to the housing sector could affect management's judgment regarding OTTI.

The Company has investments in structured products exposed primarily to the credit risk of corporate bank loans, corporate bonds or credit default swap contracts referencing corporate credit risk. Most of these structured investments are backed by corporate loans and are commonly known as collateralized loan obligations that are classified as CDOs. The portfolios backing these investments are actively managed and diversified by industry and individual issuer concentrations. Due to the complex nature of CDOs and the reduced level of transparency to the underlying collateral pools for many market participants, the recovery in CDO valuations generally lags the overall recovery in the underlying assets. Management believes its scenario analysis approach, based primarily on actual collateral data and forward looking assumptions, does capture the credit and most other risks in each pool. However, in a rapidly changing economic environment, the credit and other risks in each collateral pool will be more volatile and actual credit performance of CDOs may differ from the Company's assumptions.

The Company continuously monitors its investments and assesses their liquidity and financial viability; however, the existence of the factors described above, as well as other market factors, could negatively impact the market value of the Company's investments. If the Company sells its investments prior to maturity or market recovery, these investments may yield a return that is less than the Company otherwise would have been able to realize.

Asset-based fees calculated as a percentage of the separate account assets are a source of revenue to the Company. Gains and losses in the investment markets may result in corresponding increases and decreases in the Company's separate account assets and related revenue.

Market risk arises within the Company's employee benefit plans to the extent that the obligations of the plans are not fully matched by assets with determinable cash flows. Pension and postretirement obligations are subject to change due to fluctuations in the discount rates used to measure the liabilities as well as factors such as changes in inflation, salary increases and participants living longer.

## NOTES TO FINANCIAL STATEMENTS

The risks are that such fluctuations could result in assets that are insufficient over time to cover the level of projected benefit obligations. In addition, increases in inflation and members living longer could increase the pension and postretirement obligations. Management determines the level of this risk using reports prepared by independent actuaries and takes action, where appropriate, in terms of setting investment strategy and determining contribution levels. In the event that the pension obligations arising under the Company's employee benefit plans exceed the assets set aside to meet the obligations, the Company may be required to make additional contributions or increase its level of contributions to these plans.

### Political Uncertainties

Political events, such as the ongoing volatility with respect to the European Union, may trigger or exacerbate the risk factors described above. Whether those underlying risk factors are driven by politics or not, the Company's dynamic approach to managing risks enables us to utilize the mitigating actions described above to attempt to reduce the potential impact of each underlying risk factor on the Company.

- d. The Company did not receive any business interruption recoveries in 2016.
- e. All transferable state tax credits have been used as of December 31, 2016.
- f. Subprime mortgage related risk exposure:  
As of December 31, 2016 and 2015, the Company did not have any direct exposure through investments in subprime mortgage loans.

- (1) Direct exposure through other investments:

### RMBS risk exposure:

Portfolios of ABS, including RMBS and CMBS, are evaluated on a periodic basis using scenarios customized by collateral type. The Company performs sensitivity analysis on defaults as loan-to-values change, and on defaults as prepayments change using default curves under various scenarios. The Company combines scenario analysis with a monthly surveillance process in which it compares actual delinquencies and defaults to expectations established at the time securities are acquired as well as expectations considering current market conditions, and performs a statistical review to determine potential losses relative to credit support of troubled loan exposures on a transaction-by-transaction basis.

Management used a combination of external vendor prices, broker quotations and internal models for purposes of deriving fair value. Internal inputs used in the determination of fair value included estimates of prepayment speeds, default rates, discount rates and collateral values, among others. Structure characteristics and results of cash flow priority are also considered. Fair values resulting from internal models are those expected to be received in an orderly transaction between willing market participants at the financial statement date.

The Company holds certain investments backed by pools of residential mortgages. The majority of these investments are included in bonds. The mortgages in these pools have varying risk characteristics and are commonly categorized as being of U.S. government agency, non-agency prime, Alt-A and subprime borrower quality. The Alt-A category includes option adjustable rate mortgages and the subprime category includes 'scratch and dent' or reperforming pools, high loan-to-value pools, and pools where the borrowers have very impaired credit but the average loan-to-value is low, typically 70% or below at origination. In identifying Alt-A and subprime exposure, management used a combination of qualitative and quantitative factors, including FICO scores and loan-to-value ratios.

Residential mortgage loan pools are homogeneous residential mortgage loans substantially backed by FHA and VA guarantees. The Company purchases seasoned loan pools, most of which are FHA insured or VA guaranteed. The Company does not originate any residential mortgages but invests in residential mortgage loan pools which may contain mortgages of subprime credit quality. As of December 31, 2016 and 2015, the Company did not have any direct subprime exposure through purchases of unsecuritized whole-loan pools.

The actual cost reduced by paydowns, carrying value, fair value and related gross realized losses from OTTI of the Company's investments with significant Alt-A and subprime exposure were as follows:

	December 31, 2016			Year Ended December 31, 2016
	Actual Cost	Carrying Value	Fair Value	OTTI
Alt-A:				
a. Residential mortgage-backed securities	\$ 475,024,785	\$ 346,806,874	\$ 421,952,463	\$ 386,991
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	35,352,414	25,011,780	30,215,621	3,072
f. Other assets	-	-	-	-
g. Total	<u>\$ 510,377,199</u>	<u>\$ 371,818,654</u>	<u>\$ 452,168,084</u>	<u>\$ 390,063</u>

## NOTES TO FINANCIAL STATEMENTS

	December 31, 2016			Year Ended December 31, 2016
	Actual	Carrying	Fair	OTTI
	Cost	Value	Value	
Subprime:				
a. Residential mortgage-backed securities	\$ 426,575,800	\$ 339,118,699	\$ 402,752,703	\$ 42,634
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	2,739,686	-	215,700	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	20,888,528	15,726,076	17,137,869	11,949
f. Other assets	-	-	-	-
g. Total	<u>\$ 450,204,015</u>	<u>\$ 354,844,775</u>	<u>\$ 420,106,272</u>	<u>\$ 54,583</u>

\*The Company's SCA, C.M. Life, has investments in Alt-A and subprime mortgages, as does C.M. Life's SCA, MML Bay State. These investments comprise less than 1% of the Company's invested assets.

	December 31, 2015			Year Ended December 31, 2015
	Actual	Carrying	Fair	OTTI
	Cost	Value	Value	
Alt-A:				
a. Residential mortgage-backed securities	\$ 583,018,752	\$ 426,014,622	\$ 512,932,882	\$ 101,892
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	43,319,861	30,323,549	36,560,464	6,257
f. Other assets	-	-	-	-
g. Total	<u>\$ 626,338,613</u>	<u>\$ 456,338,171</u>	<u>\$ 549,493,346</u>	<u>\$ 108,149</u>

	December 31, 2015			Year Ended December 31, 2015
	Actual	Carrying	Fair	OTTI
	Cost	Value	Value	
Subprime:				
a. Residential mortgage-backed securities	\$ 525,983,338	\$ 425,091,644	\$ 492,047,313	\$ 16,036
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	2,739,686	-	215,700	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	26,673,128	20,749,354	22,339,498	4,934
f. Other assets	-	-	-	-
g. Total	<u>\$ 555,396,152</u>	<u>\$ 445,840,998</u>	<u>\$ 514,602,511</u>	<u>\$ 20,970</u>

\*The Company's SCA, C.M. Life, has investments in Alt-A and subprime mortgages, as does C.M. Life's SCA, MML Bay State. These investments comprise less than 1% of the Company's invested assets.

- (2) The Company has no underwriting exposure to subprime mortgage risk through Mortgage Guaranty or Financial Guaranty insurance coverage.

g. Retained asset accounts:

- (1) The Company offers the use of retained asset accounts as one of the options available to beneficiaries. This option must be affirmatively elected and is not treated as a default. An unaffiliated third party provider services certain aspects of the retained asset accounts. Beneficiaries draw funds from retained asset accounts utilizing drafts. The Company funds those drafts through an unaffiliated bank. During the reporting year, the interest earned by beneficiaries was an annual effective rate of 0.25% and did not change within the reporting year. There is no fee charged to the beneficiary to establish this account. There are no maintenance or service fees. A \$12 stop payment fee, a \$10 insufficient funds fee and a \$2 duplicate draft fee will apply. Assets and liabilities relating to retained asset accounts remain with the Company and are reported within the Company's financial statements as assets and supplemental contracts without life contingencies. The assets and liabilities reported relating to retained asset accounts also include amounts attributable to C.M. Life Retained Assets contracts issued prior to March 2011.

	Retained Asset Accounts In Force December 31,			
	2016		2015	
	Number	Balance	Number	Balance
Account aging categories:				
a. Up to and including 12 months	101	\$ 12,950,226	158	\$ 27,999,963
b. 13 to 24 months	100	13,445,447	150	12,893,716
c. 25 to 36 months	106	7,752,032	100	5,690,662
d. 37 to 48 months	79	4,525,927	81	6,266,446
e. 49 to 60 months	67	5,112,275	75	2,966,177
f. Over 60 months	874	25,773,239	933	28,852,902
g. Total	<u>1,327</u>	<u>\$ 69,559,146</u>	<u>1,497</u>	<u>\$ 84,669,866</u>

## NOTES TO FINANCIAL STATEMENTS

(3)	Individual		Group	
	Number	Balance	Number	Balance
a. Retained asset accounts as of January 1, 2016	1,497	\$ 84,669,866	-	\$ -
b. Retained asset accounts issued	150	29,472,520		
c. Investment earnings credited to retained asset accounts	N/A	188,477	N/A	-
d. Fees and other charges assessed to retained asset accounts	N/A	(136)	N/A	-
e. Retained asset accounts transferred to state unclaimed property funds	(69)	(20,872)	-	-
f. Retained asset accounts closed/withdrawn	(251)	(44,750,709)	-	-
g. Retained asset accounts as of December 31, 2016	1,327	\$ 69,559,146	-	\$ -

- h. Insurance-linked securities:  
The Company has not received any proceeds as the issuer, ceding insurer or counterparty of insurance-linked securities.

### **Note 22 – Events Subsequent**

Management of the Company has evaluated subsequent events through February 22, 2017, the date the financial statements were available to be issued.

The Company has requested regulatory approval to tender up to \$550,000,000 par value of its outstanding surplus notes issued in 1993, 1994, and 2009. In the event The Company decides to proceed, the Offer to Purchase containing the pricing, terms, and conditions expected to be finalized in 2017.

No other events have occurred subsequent to the date of the statement of financial position and before the date of evaluation that would require disclosure.

### **Note 23 – Reinsurance**

- a. Ceded Reinsurance Report:
- Section 1 - General Interrogatories:
- (1) The Company and its officers and directors do not own any portion of a nonaffiliated reinsurer.
  - (2) The Company did not reinsure any policies with a company chartered in a country other than the U.S., excluding U.S. branches of these companies, which was owned in excess of 10% or controlled directly or indirectly by an insured, a beneficiary, a creditor or any other person not primarily engaged in the insurance business.
- Section 2 - Ceded Reinsurance Report - Part A:
- (1) There are no reinsurance agreements in effect under which the reinsurer may unilaterally cancel any reinsurance for reasons other than for nonpayment of premium or other similar credits.
  - (2) The Company has no reinsurance agreements in effect such that the amount of losses paid or accrued through the statement date may result in a payment to the reinsurer of amounts which, in aggregate and allowing for offset of mutual credits from other reinsurance agreements with the same reinsurer, exceed the total direct premium collected under the reinsured policies.
- Section 3 - Ceded Reinsurance Report - Part B:
- (1) If all reinsurance agreements were terminated by either party as of December 31, 2016, the resulting reduction in surplus due to loss of reinsurance reserve credits net of unearned premium would be approximately \$3,901,079,618, assuming no return of the assets (excluding assets in trust) backing these reserves from the reinsurer to the Company.
  - (2) Effective December 31, 2016, the Company entered into a series of reinsurance agreements with an authorized third-party to reinsure approximately 100% of certain of the Company's inforce universal life, variable life, and 20-year term life policies. Under the terms of the agreements, the Company gave approximately \$85,037,929 of consideration to the reinsurer. The universal life and term life policies are reinsured on a coinsurance basis, and the variable life policies on a Modco basis. Under the terms of the agreements, the Company will maintain responsibility for servicing the policies. The Company ceded premium of \$473,441,312 and policyholders' reserves of \$410,608,040 in the change in policyholders' reserves in the Statutory Statement of Operations and recorded a \$191,721,929 increase in the Statutory Statements of Changes in Surplus in conjunction with these agreements.
- b. The Company did not write off any reinsurance balances.
  - c. The Company did not commute any ceded reinsurance.
  - d. The Company did not reinsure any policies with a certified reinsurer whose rating was downgraded or status subject to revocation.
  - e. The Company does not have reinsurance of variable annuity contracts with an affiliated captive reinsurer.
  - f. The Company does not have reinsurance of variable annuity contracts with an affiliated captive reinsurer.

**NOTES TO FINANCIAL STATEMENTS**

- g. Ceding entities that utilize captive reinsurers to assume reserves subject to the XXX/AXXX captive framework.  
 (1) Ceding reinsurers in which a risk-based capital shortfall exists per the risk-based capital XXX/AXXX captive reinsurance consolidated exhibit:  
 a. Captives with risk-based capital shortfall

Cession ID	NAIC Company Code	ID Number	Name of Captive Insurer	Amount of risk-based capital shortfall
			None	\$ -
			None	\$ -
			None	\$ -
Total				-

- b. Effect of risk-based capital shortfall on total adjusted capital (TAC)

1. Total adjusted capital (TAC) (Five-Year Historical Line 30)	\$ -
2. Risk-based capital shortfall (Sum of g(1)a1 Column 5)	\$ -
3. Total adjusted capital (TAC) before risk-based capital shortfall (g(1)b1 + g(1)b2))	\$ -

- (2) Captive reinsurers for which a non-zero primary security shortfall is shown on the risk-based capital XXX/AXXX reinsurance primary security shortfall by cession exhibit:

Cession ID	NAIC Company Code	ID Number	Name of Captive Insurer	Amount of primary security shortfall
			None	\$ -
			None	\$ -
			None	\$ -
Total				-

**Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination**

The Company does not issue group health insurance and therefore did not issue retrospectively rated contracts or contracts subject to redetermination.

**Note 25 – Change in Incurred Losses and Loss Adjustment Expenses**

There was no increase to reserves in 2016 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which were considered corrections of prior year errors.

**Note 26 – Intercompany Pooling Arrangements**

The Company did not have any intercompany pooling arrangements.

**Note 27 – Structured Settlements**

The Company did not enter into structured settlement agreements with other life insurers to resolve claims.

**Note 28 – Health Care Receivables**

The Company did not issue any business that would give rise to pharmaceutical rebates or risk sharing receivables.

**Note 29 – Participating Policies**

Participating policies issued by the Company represented 54% of the Company’s policyholders’ reserves and liabilities for deposit-type contracts as of December 31, 2016.

The allocation of these dividends to policyholders reflects the relative contribution of each group of participating policies to surplus and considers, among other factors, investment returns, mortality and morbidity experience, expenses and taxes. The Company reported dividends in the amount of \$1,565,630,559 for 2016 and did not allocate any additional income to such policyholders.

**Note 30 – Premium Deficiency Reserves**

The Company did not have any liability for premium deficiency on accident and health contracts or property/casualty contracts.

**Note 31 – Reserves for Life Contracts and Annuity Contracts**

- (1) The Company waives deduction of deferred fractional premium at death and returns any portion of the final premium beyond the date of death. Reserves are computed using continuous functions to reflect these practices. Surrender values were not promised in excess of the legally computed reserves.
- (2) The Company charges a higher premium on certain contracts that cover substandard mortality risk. For these policies, the reserve calculations are based on a substandard mortality rate, which is a multiple of the standard mortality tables.
- (3) The Company had \$31,659,617,808 of insurance in force as of December 31, 2016, for which the gross premium was less than the net premium according to the standard valuation set by the Division. Deficiency reserves to cover this insurance totaled \$455,661,862 as of December 31, 2016 and are reported in Exhibit 5.

**NOTES TO FINANCIAL STATEMENTS**

- (4) Tabular interest, tabular reserves less actual reserves released, and tabular cost for all life and annuity contracts and supplementary contracts involving life contingencies are determined in accordance with NAIC Annual Statement instructions. For tabular interest, whole life and term products use a formula that applies a weighted average interest rate determined from a seriatim valuation file to the mean average reserves. Universal life, variable life, group life, annuity and supplemental contracts use a formula that applies a weighted average credited rate to the mean account value. For contracts without an account value (e.g., a Single Premium Immediate Annuity), a weighted average statutory valuation rate is applied to the mean statutory reserve or accepted actuarial methods using applicable interest rates are applied.
- (5) Liabilities for funding agreements, dividend accumulations, premium deposit funds, investment-type contracts such as supplementary contracts not involving life contingencies and certain structured settlement annuities are based on account value or accepted actuarial methods using applicable interest rates. Refer to Note 20 a. "Fair Value Measurements" for information on the Company's policy for determining fair value.
- (6) The details for other changes:

ITEM	Total	Industrial Life	Ordinary			Credit Life Group and Individual	Group	
			Life Ins.	Individual Annuities	Supplementary Contracts		Life Ins.	Annuities
None	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics**

The withdrawal characteristics of the Company's annuity actuarial reserves and deposit-type contracts as of December 31, 2016 are illustrated below:

	General Account	Separate Account w/ Guarantees	Separate Account Nonguaranteed	Total	% of Total
A. Subject to discretionary withdrawal:					
(1) With market value adjustment	\$ 14,197,066,631	\$ -	\$ -	\$ 14,197,066,631	13 %
(2) At book value less current surrender charge of 5% or more	2,177,076,961	-	-	2,177,076,961	2
(3) At fair value	-	17,763,776,688	40,443,583,531	58,207,360,219	54
(4) Total with market value adjustment or at fair value (total of 1 through 3)	16,374,143,592	17,763,776,688	40,443,583,531	74,581,503,811	70
(5) At book value without adjustment (minimal or no charge or adjustment)	9,881,105,915	552,409,359	-	10,433,515,274	10
B. Not subject to discretionary withdrawal provision	21,879,627,921	-	28,380	21,879,656,301	20
C. Total (gross)	48,134,877,428	18,316,186,047	40,443,611,911	106,894,675,386	100 %
D. Reinsurance ceded	-	-	-	-	
E. Total (net)* (C)-(D)	\$ 48,134,877,428	\$ 18,316,186,047	\$ 40,443,611,911	\$ 106,894,675,386	

\* Reconciliation of total annuity actuarial reserves and deposit-type fund liabilities.

	Amount
F. Life and Accident and Health Annual Statement:	
(1) Exhibit 5, annuities section, total (net)	\$ 36,448,678,077
(2) Exhibit 5, supplementary contracts with life contingencies section, total (net)	112,051,485
(3) Exhibit 7, deposit-type contracts Column 1, Line 14	11,574,147,866
(4) Subtotal	48,134,877,428
Separate Accounts Annual Statement:	
(5) Exhibit 3, Line 0299999, Column 2	55,550,228,906
(6) Exhibit 3, Line 0399999, Column 2	-
(7) Policyholders dividend and coupon accumulations	-
(8) Policyholder premiums	-
(9) Guaranteed interest contracts	-
(10) Other contract deposit funds	3,209,569,052
(11) Subtotal	58,759,797,958
(12) Combined total	\$ 106,894,675,386

**Note 33 – Premium and Annuity Considerations Deferred and Uncollected**

- a. Deferred and uncollected life insurance premiums and annuity considerations as of December 31, 2016, were as follows:

Type	Gross	Net of Loading
(1) Industrial	\$ -	\$ -
(2) Ordinary new business	134,931,762	41,995,134
(3) Ordinary renewal	694,548,786	727,868,243
(4) Credit life	-	-
(5) Group life	9,495,775	9,467,289
(6) Group annuity	-	-
(7) Totals	\$ 838,976,323	\$ 779,330,666

## NOTES TO FINANCIAL STATEMENTS

### Note 34 – Separate Accounts

#### a. Separate account activity:

- (1) Separate accounts are segregated funds administered and invested by the Company. Selection of the separate account investments is directed by group and individual variable annuity, variable life and other insurance contract holders/policyholders. The returns produced by separate account assets increase or decrease separate account reserves. Separate account assets consist principally of marketable securities reported at fair value. Except for the Company's seed money and supplemental accounts, as noted below, and certain guaranteed separate accounts issued in Minnesota, separate account assets can only be used to satisfy separate account liabilities and are not available to satisfy the general obligations of the Company. Separate account administrative and investment advisory fees are included in fees and other income.

The separate account classification of all separate account products for the Company is supported by the following state statutes, by product identifier:

Product/Transaction:	State Statute Reference / Commissioner Approval / Guidance
Alpha-Backed Note Separate Account	Massachusetts General Laws Annotated Chapter 175, Section 132H
Capital Preservation	Massachusetts General Laws Annotated Chapter 175, Section 132F
Cornerstone Hotel Income Equity Fund	Massachusetts General Laws Annotated Chapter 175, Section 132H
Corporate-Owned Life Insurance	Massachusetts General Laws Annotated Chapter 175, Section 132H
Group Variable Universal Life	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Immediate Variable Annuity	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Variable Annuity	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Variable Universal Life	Massachusetts General Laws Annotated Chapter 175, Section 132G
Nonguaranteed Retirement Services Separate Accounts	Massachusetts General Laws Annotated Chapter 175, Section 132F
Separate Account Guaranteed Interest Contract	Massachusetts General Laws Annotated Chapter 175, Section 132F
Stable Value Bank-Owned Life Insurance	Massachusetts General Laws Annotated Chapter 175, Section 132H
Supplemental Account	Massachusetts General Laws Annotated Chapter 175, Section 132F

- (2) In accordance with the products recorded within the separate accounts, some are considered legally insulated whereas others are not legally insulated from the general account. The legal insulation of the separate account products prevents assets other than seed money or amounts in a supplemental account from being generally available to satisfy claims resulting from the general account.

The Company's NAIC Separate Account Annual Statement included Separate Accounts with legally insulated products of \$61,988,716,747 as of December 31, 2016 and \$60,181,109,452 as of December 31, 2015. Assets backing products which are not legally insulated are available to satisfy general obligations of the Company. The assets backing legally insulated products from the general account as of December 31, 2016 are attributed to the following:

Product/Transaction:	Separate Account Assets	
	Legally Insulated	Not Legally Insulated*
Nonguaranteed Retirement Services Separate Accounts	\$ 29,316,391,348	\$ 3,120
Separate Account Guaranteed Interest Contract	18,029,490,503	210,810,014
Individual Variable Annuity	11,294,075,306	-
Stable Value Bank-Owned Life Insurance	1,534,148,039	-
Individual Variable Universal Life	1,003,308,797	8
Capital Preservation	610,241,344	-
Corporate-Owned Life Insurance	82,787,837	-
Group Variable Universal Life	60,430,200	-
Individual Immediate Variable Annuity	57,020,943	-
Cornerstone Hotel Income Equity Fund	822,430	-
Supplemental Account	-	4,417,551
Total	<u>\$ 61,988,716,747</u>	<u>\$ 215,230,693</u>

\* Exclusive of seed money and unsettled fees and expenses, there are 17 contracts totaling \$210,807,325 that are now included as non-insulated. Total separate account assets of the Company are \$62,203,947,440 at December 31, 2016. These 17 non-insulated contracts represent 0.34% of the Company's separate account balance at December 31, 2016. Given the immateriality of the balances, we are disclosing the existence of these 17 non-insulated contracts, but are not preparing a separate green book blank.

- (3) In accordance with the products/transactions recorded within the separate accounts, some separate account liabilities are guaranteed by the general account. Reserves for guarantees covering death benefits or minimum rates of return are held in the general account. If the investment proceeds are insufficient to cover the rate of return guaranteed for the product or the guaranteed death benefit, the policyholder proceeds will be remitted by the general account.

**NOTES TO FINANCIAL STATEMENTS**

As of December 31, 2016, the general account of the Company had a maximum guarantee for separate account liabilities of \$734,800,980. To compensate the general account for the risk taken, the separate accounts have paid risk charges as follows for the past five years:

2016	\$	88,772,303
2015		89,035,421
2014		84,791,816
2013		69,485,096
2012		59,634,146

For the year ended December 31, 2016, the general account of the Company had paid \$4,619,165 toward separate account guarantees. The total separate account guarantees paid by the general account for the preceding years ending December 31, 2015, 2014, 2013, and 2012 was \$2,543,318, \$2,099,135, \$2,287,116, and \$5,202,041, respectively.

The following separate account products would be classified differently under GAAP than under statutory accounting principles:

Product Identifier:	Same as GAAP/Condition that Requires GAAP General Account Reporting
Alpha-Backed Note Separate Account	GAAP GIA classification/Investment Performance
Capital Preservation	GAAP GIA classification/Investment Performance
Separate Account Guaranteed Interest Contract	GAAP GIA classification/Investment Performance
Stable Value Bank-owned Life Insurance	GAAP GIA classification/Investment Performance
Supplemental Account	GAAP GIA classification/Investment Performance

(4) The Company does not engage in securities lending transactions within the separate accounts.

b. General nature and characteristics of separate account business:

The Company has guaranteed separate accounts classified as the following: nonindexed, which have reserve interest rates at no greater than 4% and/or to fund a long-term interest guarantee in excess of a year that does not exceed 4%. The Company has nonguaranteed separate accounts that are variable accounts where the benefit is determined by the performance and/or market value of the investments held in the separate account with incidental risk, notional expense and minimum death benefit guarantees.

Information regarding the separate accounts of the Company as of and for the year ended December 31, 2016 is as follows:

	Indexed	Nonindexed Guarantee Less than/ Equal to 4%	Nonindexed Guarantee More than 4%	Nonguaranteed Separate Accounts	Total
(1) Premiums, considerations or deposits for the year ended December 31, 2016	\$ -	\$ -	\$ -	\$ 8,136,777,107	\$ 8,136,777,107
Reserves at December 31, 2016:					
(2) For accounts with assets at:					
a. Fair value	\$ -	\$ 18,316,186,047	\$ -	\$ 43,107,669,250	\$ 61,423,855,297
b. Amortized cost	-	-	-	-	-
c. Total Reserves*	\$ -	\$ 18,316,186,047	\$ -	\$ 43,107,669,250	\$ 61,423,855,297
(3) By withdrawal characteristics:					
a. Subject to discretionary withdrawal:	\$ -	\$ -	\$ -	\$ -	-
1. With market value adjustment	-	-	-	-	-
2. At book value without market value adjustment and with current surrender charge of 5% or more	-	-	-	-	-
3. At fair value	-	17,763,776,688	-	43,107,640,870	60,871,417,558
4. At book value, without market value adjustment and with current surrender charge of less than 5%	-	552,409,359	-	-	552,409,359
5. Subtotal	\$ -	\$ 18,316,186,047	\$ -	\$ 43,107,640,870	\$ 61,423,826,917
b. Not subject to discretionary withdrawal	-	-	-	28,380	28,380
c. Total	\$ -	\$ 18,316,186,047	\$ -	\$ 43,107,669,250	\$ 61,423,855,297
(4) Reserves for Assets Default Risk in Lieu of AVR	\$ -	\$ -	\$ -	\$ -	-

\*Line 2(c) should equal Line 3(h)

**NOTES TO FINANCIAL STATEMENTS**

c. Reconciliation of net transfers (from) to separate accounts is as follows:

	<u>December 31, 2016</u>
(1) Transfers as reported in the Summary of Operations of the Separate Account Statement:	
(a) Transfers to separate accounts (Page 4, Line 1.4 and 2)	\$ 7,365,901,364
(b) Transfers from separate accounts (Page 4, Line 10)	<u>(8,407,746,503)</u>
(c) Net transfers to (from) separate accounts (a) - (b)	(1,041,845,139)
(2) Reconciling adjustments:	
(a) Net withdrawals on deposit-type liabilities	<u>(1,183,038,715)</u>
(3) Transfers as reported in the Summary of Operations of the Life, Accident & Health Annual Statement	
(1c) + (2) = (Page 4, Line 26)	<u><u>\$ (2,224,883,854)</u></u>

**Note 35 – Loss/Claim Adjustment Expenses**

The balance in the liability for unpaid accident and health claim adjustment expenses was \$28,744,275 as of December 31, 2016 and \$27,868,594 as of December 31, 2015. The Company incurred \$363,516,918 and paid \$345,431,256 of claim and claim adjustment expenses in the current year, of which \$332,143,521 of the paid amount was attributable to insured or covered events of prior years. The Company increased the provision for insured events of prior years by \$43,382,821. There is no salvage and subrogation associated with the Company's disability and long-term care businesses.

# GENERAL INTERROGATORIES

## PART 1 - COMMON INTERROGATORIES GENERAL

- 1.1 Is the reporting entity a member of an Insurance Holding Company System consisting of two or more affiliated persons, one or more of which is an insurer? ..... Yes [ X ] No [ ]  
If yes, complete Schedule Y, Parts 1, 1A and 2
- 1.2 If yes, did the reporting entity register and file with its domiciliary State Insurance Commissioner, Director or Superintendent, or with such regulatory official of the state of domicile of the principal insurer in the Holding Company System, a registration statement providing disclosure substantially similar to the standards adopted by the National Association of Insurance Commissioners (NAIC) in its Model Insurance Holding Company System Regulatory Act and model regulations pertaining thereto, or is the reporting entity subject to standards and disclosure requirements substantially similar to those required by such Act and regulations? ..... Yes [ X ] No [ ] N/A [ ]
- 1.3 State Regulating? ..... Massachusetts
- 2.1 Has any change been made during the year of this statement in the charter, by-laws, articles of incorporation, or deed of settlement of the reporting entity? ..... Yes [ ] No [ X ]
- 2.2 If yes, date of change: .....
- 3.1 State as of what date the latest financial examination of the reporting entity was made or is being made. .... 12/31/2014
- 3.2 State the as of date that the latest financial examination report became available from either the state of domicile or the reporting entity. This date should be the date of the examined balance sheet and not the date the report was completed or released. .... 12/31/2014
- 3.3 State as of what date the latest financial examination report became available to other states or the public from either the state of domicile or the reporting entity. This is the release date or completion date of the examination report and not the date of the examination (balance sheet date). .... 06/30/2016
- 3.4 By what department or departments?  
Commonwealth of Massachusetts Division of Insurance .....
- 3.5 Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? ..... Yes [ ] No [ ] N/A [ X ]
- 3.6 Have all of the recommendations within the latest financial examination report been complied with? ..... Yes [ X ] No [ ] N/A [ ]
- 4.1 During the period covered by this statement, did any agent, broker, sales representative, non-affiliated sales/service organization or any combination thereof under common control (other than salaried employees of the reporting entity), receive credit or commissions for or control a substantial part (more than 20 percent of any major line of business measured on direct premiums) of:  
4.11 sales of new business? ..... Yes [ ] No [ X ]  
4.12 renewals? ..... Yes [ ] No [ X ]
- 4.2 During the period covered by this statement, did any sales/service organization owned in whole or in part by the reporting entity or an affiliate, receive credit or commissions for or control a substantial part (more than 20 percent of any major line of business measured on direct premiums) of:  
4.21 sales of new business? ..... Yes [ ] No [ X ]  
4.22 renewals? ..... Yes [ ] No [ X ]
- 5.1 Has the reporting entity been a party to a merger or consolidation during the period covered by this statement? ..... Yes [ ] No [ X ]
- 5.2 If yes, provide the name of the entity, NAIC Company Code, and state of domicile (use two letter state abbreviation) for any entity that has ceased to exist as a result of the merger or consolidation.
- | 1<br>Name of Entity | 2<br>NAIC Company Code | 3<br>State of Domicile |
|---------------------|------------------------|------------------------|
|                     |                        |                        |
- 6.1 Has the reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period? ..... Yes [ ] No [ X ]
- 6.2 If yes, give full information:  
.....
- 7.1 Does any foreign (non-United States) person or entity directly or indirectly control 10% or more of the reporting entity? ..... Yes [ ] No [ X ]
- 7.2 If yes,  
7.21 State the percentage of foreign control; ..... %  
7.22 State the nationality(s) of the foreign person(s) or entity(s) or if the entity is a mutual or reciprocal, the nationality of its manager or attorney-in-fact; and identify the type of entity(s) (e.g., individual, corporation or government, manager or attorney in fact).

1 Nationality	2 Type of Entity

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**GENERAL INTERROGATORIES**

- 8.1 Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board? ..... Yes [ ] No [ X ]
- 8.2 If response to 8.1 is yes, please identify the name of the bank holding company.  
.....
- 8.3 Is the company affiliated with one or more banks, thrifts or securities firms? ..... Yes [ X ] No [ ]
- 8.4 If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Securities Exchange Commission (SEC)] and identify the affiliate's primary federal regulator.

1 Affiliate Name	2 Location (City, State)	3 FRB	4 OCC	5 FDIC	6 SEC
Baring International Investment Limited .....	London, UK .....				YES
Barings Securities, LLC .....	Boston, MA .....				YES
MML Distributors, LLC .....	Enfield, CT .....				YES
MML Investment Advisers, LLC .....	Enfield, CT .....				YES
MML Investors Services, LLC .....	Springfield, MA .....				YES
MML Strategic Distributors, LLC .....	Springfield, MA .....				YES
MMLISI Financial Alliances, LLC .....	Springfield, MA .....				YES
MSI Financial Services, Inc. ....	Springfield, MA .....				YES
OppenheimerFunds Distributor, Inc. ....	New York, NY .....				YES
Society of Grownups, LLC .....	Springfield, MA .....				YES
The MassMutual Trust Company, FSB .....	Enfield, CT .....		YES		

9. What is the name and address of the independent certified public accountant or accounting firm retained to conduct the annual audit?  
KPMG, LLP, One Financial Plaza, Hartford, CT 06103
- 10.1 Has the insurer been granted any exemptions to the prohibited non-audit services provided by the certified independent public accountant requirements as allowed in Section 7H of the Annual Financial Reporting Model Regulation (Model Audit Rule), or substantially similar state law or regulation? ..... Yes [ ] No [ X ]
- 10.2 If the response to 10.1 is yes, provide information related to this exemption:  
.....
- 10.3 Has the insurer been granted any exemptions related to the other requirements of the Annual Financial Reporting Model Regulation as allowed for in Section 18A of the Model Regulation, or substantially similar state law or regulation? ..... Yes [ ] No [ X ]
- 10.4 If the response to 10.3 is yes, provide information related to this exemption:  
.....
- 10.5 Has the reporting entity established an Audit Committee in compliance with the domiciliary state insurance laws? ..... Yes [ X ] No [ ] N/A [ ]
- 10.6 If the response to 10.5 is no or n/a, please explain  
.....
11. What is the name, address and affiliation (officer/employee of the reporting entity or actuary/consultant associated with an actuarial consulting firm) of the individual providing the statement of actuarial opinion/certification?  
Douglas W Taylor, FSA, MAAA, Vice President and Appointed Actuary, 1295 State Street, Springfield, MA 01111 .....
- 12.1 Does the reporting entity own any securities of a real estate holding company or otherwise hold real estate indirectly? ..... Yes [ X ] No [ ]
- 12.11 Name of real estate holding company .... See 12.2
- 12.12 Number of parcels involved ..... 134
- 12.13 Total book/adjusted carrying value ..... \$ 3,249,733,281
- 12.2 If, yes provide explanation:  
The Company held investments in debt and equity securities in 134 parcels, which own or hold real estate indirectly. The statement value at December 31, 2016 of debt and equity was \$3,238,132,915 and \$11,600,366, respectively. The Company also held 67 parcels through investments in LP and LLC entities that own real estate. These investments had a statement value of \$1,203,280,290 as of December 31, 2016.
13. **FOR UNITED STATES BRANCHES OF ALIEN REPORTING ENTITIES ONLY:**
- 13.1 What changes have been made during the year in the United States manager or the United States trustees of the reporting entity?  
.....
- 13.2 Does this statement contain all business transacted for the reporting entity through its United States Branch on risks wherever located? ..... Yes [ ] No [ ]
- 13.3 Have there been any changes made to any of the trust indentures during the year? ..... Yes [ ] No [ ]
- 13.4 If answer to (13.3) is yes, has the domiciliary or entry state approved the changes? ..... Yes [ ] No [ ] N/A [ ]
- 14.1 Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? ..... Yes [ X ] No [ ]
- (a) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- (b) Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting entity;
- (c) Compliance with applicable governmental laws, rules and regulations;
- (d) The prompt internal reporting of violations to an appropriate person or persons identified in the code; and
- (e) Accountability for adherence to the code.
- 14.11 If the response to 14.1 is No, please explain:  
.....
- 14.2 Has the code of ethics for senior managers been amended? ..... Yes [ X ] No [ ]
- 14.21 If the response to 14.2 is yes, provide information related to amendment(s).  
The Code was revised in June 2016. The revisions to the Code included updating: the company records principle to reflect updated company policy terminology and references to the Compliance & Ethics department to reflect recent reorganization.
- 14.3 Have any provisions of the code of ethics been waived for any of the specified officers? ..... Yes [ ] No [ X ]
- 14.31 If the response to 14.3 is yes, provide the nature of any waiver(s).  
.....

**GENERAL INTERROGATORIES**

- 15.1 Is the reporting entity the beneficiary of a Letter of Credit that is unrelated to reinsurance where the issuing or confirming bank is not on the SVO Bank List? Yes [ X ] No [ ]
- 15.2 If the response to 15.1 is yes, indicate the American Bankers Association (ABA) Routing Number and the name of the issuing or confirming bank of the Letter of Credit and describe the circumstances in which the Letter of Credit is triggered.

1 American Bankers Association (ABA) Routing Number	2 Issuing or Confirming Bank Name	3 Circumstances That Can Trigger the Letter of Credit	4 Amount
121140399	Silcon Valley Bank	Business obligation not fulfilled	1,229,790
121140399	Silcon Valley Bank	Business obligation not fulfilled	117,857
121140399	Silcon Valley Bank	Business obligation not fulfilled	303,678
121140399	Silcon Valley Bank	Business obligation not fulfilled	695,082
013308784	National Penn Bank, Exton PA	Business obligation not fulfilled	100,000
122240492	Boston Private Bank and Trust Company	Business obligation not fulfilled	128,214

**BOARD OF DIRECTORS**

16. Is the purchase or sale of all investments of the reporting entity passed upon either by the board of directors or a subordinate committee thereof? Yes [ X ] No [ ]
17. Does the reporting entity keep a complete permanent record of the proceedings of its board of directors and all subordinate committees thereof? Yes [ X ] No [ ]
18. Has the reporting entity an established procedure for disclosure to its board of directors or trustees of any material interest or affiliation on the part of any of its officers, directors, trustees or responsible employees that is in conflict with the official duties of such person? Yes [ X ] No [ ]

**FINANCIAL**

19. Has this statement been prepared using a basis of accounting other than Statutory Accounting Principles (e.g., Generally Accepted Accounting Principles)? Yes [ ] No [ X ]
- 20.1 Total amount loaned during the year (inclusive of Separate Accounts, exclusive of policy loans):
- 20.11 To directors or other officers \$ 1,229,790
  - 20.12 To stockholders not officers \$ 117,857
  - 20.13 Trustees, supreme or grand (Fraternal Only) \$ 303,678
- 20.2 Total amount of loans outstanding at the end of year (inclusive of Separate Accounts, exclusive of policy loans):
- 20.21 To directors or other officers \$ 695,082
  - 20.22 To stockholders not officers \$ 100,000
  - 20.23 Trustees, supreme or grand (Fraternal Only) \$ 128,214
- 21.1 Were any assets reported in this statement subject to a contractual obligation to transfer to another party without the liability for such obligation being reported in the statement? Yes [ ] No [ X ]
- 21.2 If yes, state the amount thereof at December 31 of the current year:
- 21.21 Rented from others \$
  - 21.22 Borrowed from others \$
  - 21.23 Leased from others \$
  - 21.24 Other \$
- 22.1 Does this statement include payments for assessments as described in the Annual Statement Instructions other than guaranty fund or guaranty association assessments? Yes [ ] No [ X ]
- 22.2 If answer is yes:
- 22.21 Amount paid as losses or risk adjustment \$
  - 22.22 Amount paid as expenses \$
  - 22.23 Other amounts paid \$
- 23.1 Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? Yes [ X ] No [ ]
- 23.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: \$ 0

**INVESTMENT**

- 24.01 Were all the stocks, bonds and other securities owned December 31 of current year, over which the reporting entity has exclusive control, in the actual possession of the reporting entity on said date? (other than securities lending programs addressed in 24.03) Yes [ X ] No [ ]
- 24.02 If no, give full and complete information relating thereto
- 24.03 For security lending programs, provide a description of the program including value for collateral and amount of loaned securities, and whether collateral is carried on or off-balance sheet. (an alternative is to reference Note 17 where this information is also provided) N/A
- 24.04 Does the Company's security lending program meet the requirements for a conforming program as outlined in the Risk-Based Capital Instructions? Yes [ ] No [ ] N/A [ X ]
- 24.05 If answer to 24.04 is yes, report amount of collateral for conforming programs. \$
- 24.06 If answer to 24.04 is no, report amount of collateral for other programs. \$
- 24.07 Does your securities lending program require 102% (domestic securities) and 105% (foreign securities) from the counterparty at the outset of the contract? Yes [ ] No [ ] N/A [ X ]
- 24.08 Does the reporting entity non-admit when the collateral received from the counterparty falls below 100%? Yes [ ] No [ ] N/A [ X ]
- 24.09 Does the reporting entity or the reporting entity's securities lending agent utilize the Master Securities Lending Agreement (MSLA) to conduct securities lending? Yes [ ] No [ ] N/A [ X ]

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**GENERAL INTERROGATORIES**

24.10 For the reporting entity's security lending program state the amount of the following as December 31 of the current year:

24.101 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2 .....	\$ .....
24.102 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2 .....	\$ .....
24.103 Total payable for securities lending reported on the liability page .....	\$ .....

25.1 Were any of the stocks, bonds or other assets of the reporting entity owned at December 31 of the current year not exclusively under the control of the reporting entity, or has the reporting entity sold or transferred any assets subject to a put option contract that is currently in force? (Exclude securities subject to Interrogatory 21.1 and 24.03). ..... Yes  No

25.2 If yes, state the amount thereof at December 31 of the current year:

25.21 Subject to repurchase agreements .....	\$ 4,735,615,498
25.22 Subject to reverse repurchase agreements .....	\$ .....
25.23 Subject to dollar repurchase agreements .....	\$ .....
25.24 Subject to reverse dollar repurchase agreements .....	\$ .....
25.25 Placed under option agreements .....	\$ .....
25.26 Letter stock or securities restricted as to sale - excluding FHLB Capital Stock .....	\$ 512,860,645
25.27 FHLB Capital Stock .....	\$ 74,500,000
25.28 On deposit with states .....	\$ 8,582,961
25.29 On deposit with other regulatory bodies .....	\$ .....
25.30 Pledged as collateral - excluding collateral pledged to an FHLB .....	\$ 1,137,685,573
25.31 Pledged as collateral to FHLB - including assets backing funding agreements .....	\$ 1,224,686,104
25.32 Other .....	\$ .....

25.3 For category (25.26) provide the following:

1 Nature of Restriction	2 Description	3 Amount
Restricted by contractual agreements .....	Various .....	512,860,645

26.1 Does the reporting entity have any hedging transactions reported on Schedule DB? ..... Yes  No

26.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? ..... Yes  No  N/A   
 If no, attach a description with this statement.

27.1 Were any preferred stocks or bonds owned as of December 31 of the current year mandatorily convertible into equity, or, at the option of the issuer, convertible into equity? ..... Yes  No

27.2 If yes, state the amount thereof at December 31 of the current year. .... \$ 373,968,963

28. Excluding items in Schedule E - Part 3 - Special Deposits, real estate, mortgage loans and investments held physically in the reporting entity's offices, vaults or safety deposit boxes, were all stocks, bonds and other securities, owned throughout the current year held pursuant to a custodial agreement with a qualified bank or trust company in accordance with Section 1, III - General Examination Considerations, F. Outsourcing of Critical Functions, Custodial or Safekeeping Agreements of the NAIC Financial Condition Examiners Handbook?..... Yes  No

28.01 For agreements that comply with the requirements of the NAIC Financial Condition Examiners Handbook, complete the following:

1 Name of Custodian(s)	2 Custodian's Address
Citibank, N.A. ....	333 West 34th Street, New York, NY 10001 .....
JP Morgan Chase Bank N.A. ....	1 Chase Manhattan Plaza, 19th Floor, New York, NY 10005 .....
Northern Trust .....	50 South LaSalle Street, Chicago, IL 60603 .....
State Street Global Services .....	801 Pennsylvania Avenue, Kansas City, MO 64105 .....

28.02 For all agreements that do not comply with the requirements of the NAIC Financial Condition Examiners Handbook, provide the name, location and a complete explanation:

1 Name(s)	2 Location(s)	3 Complete Explanation(s)

28.03 Have there been any changes, including name changes, in the custodian(s) identified in 28.01 during the current year?..... Yes  No

28.04 If yes, give full and complete information relating thereto:

1 Old Custodian	2 New Custodian	3 Date of Change	4 Reason

**ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company**  
**GENERAL INTERROGATORIES**

28.05 Investment management – Identify all investment advisors, investment managers, broker/dealers, including individuals that have the authority to make investment decisions on behalf of the reporting entity. For assets that are managed internally by employees of the reporting entity, note as such. ["...that have access to the investment accounts"; "...handle securities"]

1 Name of Firm or Individual	2 Affiliation
OFI Institutional Asset Management, Inc.	A
Barings LLC	A
Franklin Advisers, Inc.	U
Tortoise Capital Advisors, L.L.C.	U
PIMCO- Pacific Investment Management Company LLC	U
Earnest Partners LLC	U
KA Fund Advisors LLC	U
IFM Investors Pty Ltd	U
Ashmore Investment Management Limited	U
Jefferies Finance LLC	A
20 Gates Management, LLC	U

28.0597 For those firms/individuals listed in the table for Question 28.05, do any firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") manage more than 10% of the reporting entity's assets? Yes [ ] No [ X ]

28.0598 For firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") listed in the table for Question 28.05, does the total assets under management aggregate to more than 50% of the reporting entity's assets? Yes [ ] No [ X ]

28.06 For those firms or individuals listed in the table for 28.05 with an affiliation code of "A" (affiliated) or "U" (unaffiliated), provide the information for the table below.

1 Central Registration Depository Number	2 Name of Firm or Individual	3 Legal Entity Identifier (LEI)	4 Registered With	5 Investment Management Agreement (IMA) Filed
110363	OFI Institutional Asset Management, Inc.		SEC	DS
106006	Barings LLC	R6ZKX5P01NP6HXS1S07	SEC	DS
104517	Franklin Advisers, Inc.		SEC	NO
123711	Tortoise Capital Advisors, L.L.C.		SEC	NO
104559	PIMCO- Pacific Investment Management Company LLC		SEC	NO
107926	Earnest Partners LLC		SEC	NO
141037	KA Fund Advisors LLC		SEC	NO
162754	IFM Investors Pty Ltd		SEC	NO
185402	Ashmore Investment Management Limited	R6ZKX5P01NP6HXS1S07	SEC	NO
162264	Jefferies Finance LLC		SEC	DS
155480	20 Gates Management, LLC		SEC	NO

29.1 Does the reporting entity have any diversified mutual funds reported in Schedule D, Part 2 (diversified according to the Securities and Exchange Commission (SEC) in the Investment Company Act of 1940 [Section 5(b)(1)])? Yes [ X ] No [ ]

29.2 If yes, complete the following schedule:

1 CUSIP #	2 Name of Mutual Fund	3 Book/Adjusted Carrying Value
553097-14-8	M M L Series	94,845
55312G-63-0	M M L Series Inv Fd II	96,900
55312G-64-8	M M L Series Inv Fd II	19,328,642
55312G-65-5	M M L Series Inv Fd II	113,368
55312G-66-3	M M L Series Inv Fd II	22,614,125
55312G-67-1	M M L Series Inv Fd II	101,791
55312G-69-7	M M L Series Inv Fd II	102,900
55312G-71-3	M M L Series Inv Fd II	20,554,071
57629E-49-8	MM Premier Value Fund	103,335
57629U-27-8	MM Select Diversified Intl Fd	74,962
57630A-15-4	MassMutual RetireSMART 2055	762,858
57630C-65-5	MM Premier Value Fund	114,653
57630C-66-3	MM Premier Value Fund	115,076
57630C-67-1	MM Premier Strat Emerg Mkts Fd	86,960
57630C-68-9	MM Premier Strat Emerg Mkts Fd	86,690
57630C-74-7	MM Premier Main Street Fund	79,058
57630E-17-2	MM RetireSMART Growth Fund	95,704
57630E-21-4	MM RetireSMART Conservative Fd	99,033
57630E-22-2	MassMutual RetireSMART 2055	100,269
57630E-25-5	MassMutual RetireSMART 2055	100,424
57630E-58-6	MM Select Small Company Val Fd	86,885
57630E-64-4	MM Select Small Cap Val Eq Fd	113,128
57630E-69-3	MM Select Mid-Cap Value Fund	97,497
57630E-72-7	MM Select Large Cap Value Fund	88,254
57630E-77-6	MM Select Fundamental Gwth Fd	91,931
57630E-81-8	MM Select Diversified Value Fd	109,951
57630E-84-2	MM Select Diversified Intl Fd	85,418
57630G-40-9	MM RetireSMART Moderate Fund	97,927
57630G-70-6	MM RetireSMART Moderate Gth Fd	96,876
57630G-81-3	MassMutual RetireSMART 2060	100,361
57630G-82-1	MassMutual RetireSMART 2060	100,591
57630G-83-9	MassMutual RetireSMART 2060	100,479
57630G-84-7	MassMutual RetireSMART 2060	100,405
57630G-85-4	MassMutual RetireSMART 2060	100,516
57630G-86-2	MassMutual RetireSMART 2060	100,629
57630G-87-0	MassMutual RetireSMART 2060	9,460,155
68385C-50-1	Oppenheimer Global Real Estate	75,453,996
683974-60-4	Oppenheimer Developing Mkts Fd	74,375,000
G069E@-10-1	Babson Capital Global Investment Fund	23,261,702

**ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company**

1 CUSIP #	2 Name of Mutual Fund	3 Book/Adjusted Carrying Value
G069E@-YY-1	Babson Capital Global Investment Fund	108,919,733
G0756X-MM-5	Babson Capital Global Umb Fund	108,703,077
G0756Y-PP-3	Babson Capital Global Umb Fund	91,200,000
G0833C-38-0	Baring Emerging Markets CDF	15,480,000
29.2999 - Total		573,150,177

29.3 For each mutual fund listed in the table above, complete the following schedule:

1 Name of Mutual Fund (from above table)	2 Name of Significant Holding of the Mutual Fund	3 Amount of Mutual Fund's Book/Adjusted Carrying Value Attributable to the Holding	4 Date of Valuation
MM RetireSMART Conservative Fd	MM SELECT BOND + INCOME ASSET	39,536,578	12/30/2016
MM RetireSMART Growth Fund	MM SELECT EQUITY ASSET FUND	39,452,787	12/30/2016
MM RetireSMART Moderate Fund	MM SELECT EQUITY ASSET FUND	81,699,821	12/30/2016
MM RetireSMART Moderate Gth Fd	MM SELECT EQUITY ASSET FUND	93,230,462	12/30/2016
M M L Series Inv Fd II	VANGUARD TOTAL STOCK MARKET ET	5,477,700	12/30/2016
M M L Series Inv Fd II	VANGUARD TOTAL STOCK MARKET ET	5,477,700	12/30/2016
M M L Series Inv Fd II	US TREASURY N/B	15,301,831	12/30/2016
M M L Series Inv Fd II	AMAZON.COM INC	1,192,293	12/30/2016
M M L Series Inv Fd II	AMAZON.COM INC	1,192,293	12/30/2016
M M L Series Inv Fd II	SCIENCE APPLICATIONS INTE	1,407,680	12/30/2016
M M L Series Inv Fd II	SCIENCE APPLICATIONS INTE	1,407,680	12/30/2016
M M L Series	GLENCORE PLC	6,409,271	12/30/2016
MM Premier Main Street Fund	APPLE INC	7,051,353	12/30/2016
MM Premier Strat Emerg Mkts Fd	ALIBABA GROUP HOLDING SP ADR	9,001,491	12/30/2016
MM Premier Strat Emerg Mkts Fd	ALIBABA GROUP HOLDING SP ADR	9,001,491	12/30/2016
MM Premier Value Fund	BANK OF AMERICA CORP	3,698,214	12/30/2016
MM Premier Value Fund	BANK OF AMERICA CORP	3,698,214	12/30/2016
MM Premier Value Fund	BANK OF AMERICA CORP	3,698,214	12/30/2016
MM Select Diversified Intl Fd	MITSUBISHI UFJ FINANCIAL GRO	1,173,647	12/30/2016
MM Select Diversified Intl Fd	MITSUBISHI UFJ FINANCIAL GRO	1,173,647	12/30/2016
MM Select Diversified Value Fd	APPLE INC	12,643,964	12/30/2016
MM Select Fundamental Gwth Fd	APPLE INC	6,992,053	12/30/2016
MM Select Large Cap Value Fund	BANK OF AMERICA CORP	8,548,192	12/30/2016
MM Select Mid-Cap Value Fund	NORTHERN TRUST CORP	3,486,218	12/30/2016
MassMutual RetireSMART 2055	MM SELECT EQUITY ASSET FUND	11,817,056	12/30/2016
MassMutual RetireSMART 2055	MM SELECT EQUITY ASSET FUND	11,817,056	12/30/2016
MassMutual RetireSMART 2055	MM SELECT EQUITY ASSET FUND	11,817,056	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MassMutual RetireSMART 2060	MM SELECT EQUITY ASSET FUND	4,304,653	12/30/2016
MM Select Small Cap Val Eq Fd	TEXAS CAPITAL BANCSHARES INC	3,946,342	12/30/2016
MM Select Small Company Val Fd	RADIAN GROUP INC	4,048,017	12/30/2016
Oppenheimer Global Real Estate	SIMON PROPERTY GROUP INC	4,146,818	12/31/2016
Babson Capital Global Umb Fund	Institutional Cash Series PLC	17,490,000	12/31/2016
Babson Capital Global Umb Fund	Institutional Cash Series PLC	17,490,000	12/31/2016
Babson Capital Global Investment Fund	JPMorgan Liquidity Funds	347,647,314	12/31/2016
Babson Capital Global Investment Fund	JPMorgan Liquidity Funds	347,647,314	12/31/2016

30. Provide the following information for all short-term and long-term bonds and all preferred stocks. Do not substitute amortized value or statement value for fair value.

	1 Statement (Admitted) Value	2 Fair Value	3 Excess of Statement over Fair Value (-), or Fair Value over Statement (+)
30.1 Bonds	87,403,939,747	90,330,536,306	2,926,596,559
30.2 Preferred stocks	464,925,273	481,903,751	16,978,478
30.3 Totals	87,868,865,020	90,812,440,057	2,943,575,037

30.4 Describe the sources or methods utilized in determining the fair values:

The Fair Value of securities is obtained using quoted market prices when available. If not available, estimated fair value is based on values provided by other third-party organizations. If values provided by other third-party organizations are unavailable, fair value is estimated using internal models by discounting future cash flows using observable current market rates applicable to yield, credit quality and maturity of the investment or using quoted market values for comparable investments. Internal inputs used in the determination of fair value include estimated prepayment speeds, default rates, discount rates and collateral values, among others. Structure Characteristics and results of cash flow priority are also considered.

31.1 Was the rate used to calculate fair value determined by a broker or custodian for any of the securities in Schedule D? Yes [ X ] No [ ]

31.2 If the answer to 31.1 is yes, does the reporting entity have a copy of the broker's or custodian's pricing policy (hard copy or electronic copy) for all brokers or custodians used as a pricing source? Yes [ X ] No [ ]

31.3 If the answer to 31.2 is no, describe the reporting entity's process for determining a reliable pricing source for purposes of disclosure of fair value for Schedule D:

32.1 Have all the filing requirements of the Purposes and Procedures Manual of the NAIC Investment Analysis Office been followed? Yes [ ] No [ X ]

32.2 If no, list exceptions:

At 12/31/2016, 60 issues for 45 issuers did not meet the filing requirements of the Purposes and Procedures Manual. The majority of these issues currently lack one or more of the following: Valid cusip/PPN, audited financials and/or executed legal documentation. Exceptions totaled \$517,132,687 or 0.62% of all assets.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**GENERAL INTERROGATORIES**

**OTHER**

33.1 Amount of payments to trade associations, service organizations and statistical or rating bureaus, if any? .....\$ .....4,992,743

33.2 List the name of the organization and the amount paid if any such payment represented 25% or more of the total payments to trade associations, service organizations and statistical or rating bureaus during the period covered by this statement.

1 Name	2 Amount Paid
American Council of Life Insurers (ACLI) .....	1,561,600

34.1 Amount of payments for legal expenses, if any? .....\$ .....4,304,433

34.2 List the name of the firm and the amount paid if any such payment represented 25% or more of the total payments for legal expenses during the period covered by this statement.

1 Name	2 Amount Paid
Sutherland Asbill & Brennan LLP .....	2,715,383

35.1 Amount of payments for expenditures in connection with matters before legislative bodies, officers or departments of government, if any? .....\$ .....2,250,299

35.2 List the name of the firm and the amount paid if any such payment represented 25% or more of the total payment expenditures in connection with matters before legislative bodies, officers or departments of government during the period covered by this statement.

1 Name	2 Amount Paid
.....	

**GENERAL INTERROGATORIES**

**PART 2 - LIFE INTERROGATORIES**

1.1 Does the reporting entity have any direct Medicare Supplement Insurance in force? ..... Yes [ ] No [ X ]

1.2 If yes, indicate premium earned on U.S. business only ..... \$

1.3 What portion of Item (1.2) is not reported on the Medicare Supplement Insurance Experience Exhibit? ..... \$

1.31 Reason for excluding:  
.....

1.4 Indicate amount of earned premium attributable to Canadian and/or Other Alien not included in Item (1.2) above. .... \$

1.5 Indicate total incurred claims on all Medicare Supplement insurance. .... \$

1.6 Individual policies:

Most current three years:

1.61 Total premium earned ..... \$

1.62 Total incurred claims ..... \$

1.63 Number of covered lives .....

All years prior to most current three years

1.64 Total premium earned ..... \$

1.65 Total incurred claims ..... \$

1.66 Number of covered lives .....

1.7 Group policies:

Most current three years:

1.71 Total premium earned ..... \$

1.72 Total incurred claims ..... \$

1.73 Number of covered lives .....

All years prior to most current three years

1.74 Total premium earned ..... \$

1.75 Total incurred claims ..... \$

1.76 Number of covered lives .....

2. Health Test:

	1 Current Year	2 Prior Year
2.1 Premium Numerator .....	21,408,422,772	21,530,383,076
2.2 Premium Denominator .....	0.000	0.000
2.3 Premium Ratio (2.1/2.2) .....	102,393,835	102,210,781
2.4 Reserve Numerator .....	110,519,352,240	101,065,917,785
2.5 Reserve Denominator .....	0.001	0.001
2.6 Reserve Ratio (2.4/2.5) .....		

3.1 Does this reporting entity have Separate Accounts? ..... Yes [ X ] No [ ]

3.2 If yes, has a Separate Accounts Statement been filed with this Department? ..... Yes [ X ] No [ ] N/A [ ]

3.3 What portion of capital and surplus funds of the reporting entity covered by assets in the Separate Accounts statement, is not currently distributable from the Separate Accounts to the general account for use by the general account? ..... \$ 176,924,714

3.4 State the authority under which Separate Accounts are maintained:  
Massachusetts General Law, C175 Section 132F & 132G .....

3.5 Was any of the reporting entity's Separate Accounts business reinsured as of December 31? ..... Yes [ ] No [ X ]

3.6 Has the reporting entity assumed by reinsurance any Separate Accounts business as of December 31? ..... Yes [ X ] No [ ]

3.7 If the reporting entity has assumed Separate Accounts business, how much, if any, reinsurance assumed receivable for reinsurance of Separate Accounts reserve expense allowances is included as a negative amount in the liability for "Transfers to Separate Accounts due or accrued (net)"? ..... 0

4.1 Are personnel or facilities of this reporting entity used by another entity or entities or are personnel or facilities of another entity or entities used by this reporting entity (except for activities such as administration of jointly underwritten group contracts and joint mortality or morbidity studies)? ..... Yes [ X ] No [ ]

4.2 Net reimbursement of such expenses between reporting entities:

4.21 Paid ..... \$ 0

4.22 Received ..... \$ 59,398,113

5.1 Does the reporting entity write any guaranteed interest contracts? ..... Yes [ X ] No [ ]

5.2 If yes, what amount pertaining to these lines is included in:

5.21 Page 3, Line 1 ..... \$ 0

5.22 Page 4, Line 1 ..... \$ 0

6. FOR STOCK REPORTING ENTITIES ONLY:

6.1 Total amount paid in by stockholders as surplus funds since organization of the reporting entity: ..... \$

7. Total dividends paid stockholders since organization of the reporting entity:

7.11 Cash ..... \$

7.12 Stock ..... \$

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**GENERAL INTERROGATORIES**

8.1 Does the company reinsure any Workers' Compensation Carve-Out business defined as: ..... Yes [ ] No [ X ]  
 Reinsurance (including retrocessional reinsurance) assumed by life and health insurers of medical, wage loss and death benefits of the occupational illness and accident exposures, but not the employers liability exposures, of business originally written as workers' compensation insurance.

8.2 If yes, has the reporting entity completed the Workers' Compensation Carve-Out Supplement to the Annual Statement? ..... Yes [ ] No [ ]

8.3 If 8.1 is yes, the amounts of earned premiums and claims incurred in this statement are:

	1 Reinsurance Assumed	2 Reinsurance Ceded	3 Net Retained
8.31 Earned premium .....	.....	.....	.....
8.32 Paid claims .....	.....	.....	.....
8.33 Claim liability and reserve (beginning of year) .....	.....	.....	.....
8.34 Claim liability and reserve (end of year) .....	.....	.....	.....
8.35 Incurred claims .....	.....	.....	.....

8.4 If reinsurance assumed included amounts with attachment points below \$1,000,000, the distribution of the amounts reported in Lines 8.31 and 8.34 for Column (1) are:

	Attachment Point	1 Earned Premium	2 Claim Liability and Reserve
8.41	<\$25,000	.....	.....
8.42	\$25,000 - 99,999	.....	.....
8.43	\$100,000 - 249,999	.....	.....
8.44	\$250,000 - 999,999	.....	.....
8.45	\$1,000,000 or more	.....	.....

8.5 What portion of earned premium reported in 8.31, Column 1 was assumed from pools? ..... \$ .....

9.1 Does the company have variable annuities with guaranteed benefits? ..... Yes [ X ] No [ ]

9.2 If 9.1 is yes, complete the following table for each type of guaranteed benefit.

Type		3	4	5	6	7	8	9
1	2	Waiting Period Remaining	Account Value Related to Col. 3	Total Related Account Values	Gross Amount of Reserve	Location of Reserve	Portion Reinsured	Reinsurance Reserve Credit
Guaranteed Death Benefit	Guaranteed Living Benefit							
See attached .....	.....	.....	.....	.....	.....	.....	.....	.....

10. For reporting entities having sold annuities to another insurer where the insurer purchasing the annuities has obtained a release of liability from the claimant (payee) as the result of the purchase of an annuity from the reporting entity only:

10.1 Amount of loss reserves established by these annuities during the current year: ..... \$ .....

10.2 List the name and location of the insurance company purchasing the annuities and the statement value on the purchase date of the annuities.

1	2
	Statement Value on Purchase Date of Annuities (i.e., Present Value)
P&C Insurance Company And Location	.....
.....	.....

11.1 Do you act as a custodian for health savings accounts? ..... Yes [ ] No [ X ]

11.2 If yes, please provide the amount of custodial funds held as of the reporting date. .... \$ .....

11.3 Do you act as an administrator for health savings accounts? ..... Yes [ ] No [ X ]

11.4 If yes, please provide the balance of funds administered as of the reporting date. .... \$ .....

**GENERAL INTERROGATORIES**

12.1 Are any of the captive affiliates reported on Schedule S, Part 3, authorized reinsurers? ..... Yes [ ] No [ ] N/A [ X ]

12.2 If the answer to 12.1 is yes, please provide the following:

1 Company Name	2 NAIC Company Code	3 Domiciliary Jurisdiction	4 Reserve Credit	Assets Supporting Reserve Credit		
				5 Letters of Credit	6 Trust Agreements	7 Other

13. Provide the following for individual ordinary life insurance\* policies (U.S. business only) for the current year (prior to reinsurance assumed or ceded):

13.1 Direct Premium Written .....\$ .....4,898,467,740  
 13.2 Total Incurred Claims .....\$ .....1,869,473,604  
 13.3 Number of Covered Lives .....1,576,932

*Ordinary Life Insurance Includes
Term (whether full underwriting,limited underwriting,jet issue,"short form app")
Whole Life (whether full underwriting,limited underwriting,jet issue,"short form app")
Variable Life (with or without secondary gurarantee)
Universal Life (with or without secondary gurarantee)
Variable Universal Life (with or without secondary gurarantee)

**FIVE-YEAR HISTORICAL DATA**

Show amounts in whole dollars only, no cents; show percentages to one decimal place, i.e. 17.6.

Show amounts of life insurance in this exhibit in thousands (OMIT \$000)

	1 2016	2 2015	3 2014	4 2013	5 2012
<b>Life Insurance in Force</b> (Exhibit of Life Insurance)					
1. Ordinary - whole life and endowment (Line 34, Col. 4) .....	256,056,164	237,304,751	222,715,389	210,785,773	200,188,340
2. Ordinary - term (Line 21, Col. 4, less Line 34, Col. 4) .....	253,041,259	231,263,192	213,592,180	197,311,951	185,202,189
3. Credit life (Line 21, Col. 6) .....					
4. Group, excluding FEGLI/SGLI (Line 21, Col. 9 less Lines 43 & 44, Col. 4) .....	60,320,208	55,273,484	51,810,319	48,602,456	46,911,984
5. Industrial (Line 21, Col. 2) .....					
6. FEGLI/SGLI (Lines 43 & 44, Col. 4) .....					
7. Total (Line 21, Col. 10) .....	569,417,631	523,841,427	488,117,888	456,700,180	432,302,513
<b>New Business Issued</b> (Exhibit of Life Insurance)					
8. Ordinary - whole life and endowment (Line 34, Col. 2) .....	28,150,352	24,506,721	22,507,671	18,950,805	18,385,152
9. Ordinary - term (Line 2, Col. 4, less Line 34, Col. 2) .....	34,383,023	29,662,683	28,083,518	25,875,429	24,656,699
10. Credit life (Line 2, Col. 6) .....					
11. Group (Line 2, Col. 9) .....	5,979,182	5,035,633	4,444,460	4,029,423	3,606,518
12. Industrial (Line 2, Col. 2) .....					
13. Total (Line 2, Col. 10) .....	68,512,557	59,205,037	55,035,649	48,855,657	46,648,369
<b>Premium Income - Lines of Business</b> (Exhibit 1 - Part 1)					
14. Industrial life (Line 20.4, Col. 2) .....					
15.1 Ordinary-life insurance (Line 20.4, Col. 3) .....	5,310,388,997	5,277,080,473	4,859,801,424	4,391,291,155	4,257,705,721
15.2 Ordinary-individual annuities (Line 20.4, Col. 4) .....	2,428,308,628	2,236,745,879	2,511,819,475	3,312,423,007	1,998,585,164
16. Credit life (group and individual) (Line 20.4, Col. 5) .....					
17.1 Group life insurance (Line 20.4, Col. 6) .....	1,428,629,720	1,356,040,660	1,182,721,337	1,054,797,579	843,059,436
17.2 Group annuities (Line 20.4, Col. 7) .....	11,655,352,698	12,094,590,573	9,278,793,497	11,124,116,908	12,691,765,687
18.1 A & H-group (Line 20.4, Col. 8) .....					
18.2 A & H-credit (group and individual) (Line 20.4, Col. 9) .....					
18.3 A & H-other (Line 20.4, Col. 10) .....	586,947,018	565,759,442	543,909,490	524,477,159	515,175,821
19. Aggregate of all other lines of business (Line 20.4, Col. 11) .....					
20. Total .....	21,409,627,061	21,530,217,027	18,377,045,223	20,407,105,808	20,306,291,829
<b>Balance Sheet (Pages 2 &amp; 3)</b>					
21. Total admitted assets excluding Separate Accounts business (Page 2, Line 26, Col. 3) .....	161,466,469,743	149,973,161,492	136,804,647,038	124,384,789,092	103,308,521,664
22. Total liabilities excluding Separate Accounts business (Page 3, Line 26) .....	146,052,119,164	134,999,742,976	122,583,280,790	111,869,642,792	90,630,459,432
23. Aggregate life reserves (Page 3, Line 1) .....	109,391,085,184	99,942,257,473	90,679,671,843	83,604,977,107	71,243,342,721
24. Aggregate A & H reserves (Page 3, Line 2) .....	2,794,862,457	2,683,981,025	2,610,834,429	2,548,833,307	2,490,755,452
25. Deposit-type contract funds (Page 3, Line 3) .....	11,574,147,866	10,491,117,975	9,044,956,553	9,408,618,610	5,322,733,989
26. Asset valuation reserve (Page 3, Line 24.01) .....	3,178,008,369	2,817,138,360	2,620,278,026	2,194,546,171	1,928,271,336
27. Capital (Page 3, Lines 29 and 30) .....					
28. Surplus (Page 3, Line 37) .....	15,423,489,956	14,982,532,137	14,231,326,051	12,524,446,904	12,686,883,638
<b>Cash Flow (Page 5)</b>					
29. Net Cash from Operations (Line 11) .....	9,338,557,644	7,800,197,774	6,998,820,442	7,563,694,666	5,933,809,636
<b>Risk-Based Capital Analysis</b>					
30. Total adjusted capital .....	17,276,323,340	17,340,787,408	16,353,434,004	14,531,382,160	14,440,389,862
31. Authorized control level risk - based capital .....	1,882,163,260	1,732,441,607	1,646,252,886	1,601,245,537	1,434,671,609
<b>Percentage Distribution of Cash, Cash Equivalents and Invested Assets</b> (Page 2, Col. 3) (Line No. /Page 2, Line 12, Col. 3) x 100.0					
32. Bonds (Line 1) .....	54.1	55.3	56.2	55.8	56.2
33. Stocks (Lines 2.1 and 2.2) .....	10.2	6.7	7.3	6.5	6.9
34. Mortgage loans on real estate(Lines 3.1 and 3.2) .....	13.5	15.3	14.5	13.7	13.8
35. Real estate (Lines 4.1, 4.2 and 4.3) .....	0.6	0.6	0.6	0.7	1.1
36. Cash, cash equivalents and short-term investments (Line 5) .....	2.4	2.1	1.4	3.5	2.8
37. Contract loans (Line 6) .....	8.0	8.2	8.4	8.8	9.9
38. Derivatives (Page 2, Line 7) .....	6.3	6.4	6.4	5.1	2.8
39. Other invested assets (Line 8) .....	4.6	5.2	5.2	6.0	6.5
40. Receivables for securities (Line 9) .....	0.1	0.0	0.0	0.0	0.0
41. Securities lending reinvested collateral assets (Line 10) .....					
42. Aggregate write-ins for invested assets (Line 11) .....					
43. Cash, cash equivalents and invested assets (Line 12) .....	100.0	100.0	100.0	100.0	100.0

**FIVE-YEAR HISTORICAL DATA**

(Continued)

	1 2016	2 2015	3 2014	4 2013	5 2012
<b>Investments in Parent, Subsidiaries and Affiliates</b>					
44. Affiliated bonds (Schedule D Summary, Line 12, Col. 1) .....	6,508,255,596	6,176,512,151	5,525,755,051	5,424,703,960	5,260,115,376
45. Affiliated preferred stocks (Schedule D Summary, Line 18, Col. 1) .....					
46. Affiliated common stocks (Schedule D Summary Line 24, Col. 1), .....	13,670,494,513	7,503,525,833	7,243,083,433	6,073,875,718	5,476,632,773
47. Affiliated short-term investments (subtotal included in Schedule DA Verification, Col. 5, Line 10) .....					
48. Affiliated mortgage loans on real estate .....					
49. All other affiliated .....	3,484,857,931	4,213,299,770	4,192,597,007	4,410,978,298	4,288,037,148
50. Total of above Lines 44 to 49 .....	23,663,608,040	17,893,337,754	16,961,435,491	15,909,557,976	15,024,785,297
51. Total Investment in Parent included in Lines 44 to 49 above .....					
<b>Total Nonadmitted and Admitted Assets</b>					
52. Total nonadmitted assets (Page 2, Line 28, Col. 2) .....	1,630,741,548	1,304,547,618	1,288,654,690	1,191,202,220	1,276,194,789
53. Total admitted assets (Page 2, Line 28, Col. 3) .....	223,670,465,625	210,358,711,235	197,189,089,372	182,776,470,724	155,648,727,921
<b>Investment Data</b>					
54. Net investment income (Exhibit of Net Investment Income) .....	6,198,498,168	6,246,441,543	6,140,050,815	5,281,824,824	4,798,175,414
55. Realized capital gains (losses) (Page 4, Line 34, Column 1) .....	(208,411,773)	58,635,533	166,082,947	(476,328,506)	108,979,674
56. Unrealized capital gains (losses) (Page 4, Line 38, Column 1) .....	1,104,826,359	194,731,062	2,021,875,603	(210,583,599)	742,645,690
57. Total of above Lines 54, 55 and 56 .....	7,094,912,754	6,499,808,138	8,328,009,365	4,594,912,719	5,649,800,778
<b>Benefits and Reserve Increases (Page 6)</b>					
58. Total contract benefits - life (Lines 10, 11, 12, 13, 14 and 15 Col. 1, minus Lines 10, 11, 12, 13, 14 and 15 Cols. 9, 10 and 11) .....	17,460,110,130	15,643,535,253	15,902,284,606	17,734,702,304	10,431,170,962
59. Total contract benefits - A & H (Lines 13 & 14, Cols. 9, 10 & 11) .....	338,035,628	338,979,632	329,147,017	326,008,563	314,772,359
60. Increase in life reserves - other than group and annuities (Line 19, Cols. 2 and 3) .....	3,271,691,628	3,197,567,991	3,016,850,274	2,465,774,105	2,354,828,403
61. Increase in A & H reserves (Line 19, Cols. 9, 10 & 11) .....	110,881,432	73,146,596	62,001,122	58,077,855	40,476,955
62. Dividends to policyholders (Line 30, Col. 1) .....	1,565,630,560	1,727,593,543	1,553,324,172	1,474,794,280	1,378,515,704
<b>Operating Percentages</b>					
63. Insurance expense percent (Page 6, Col. 1, Lines 21, 22 & 23, less Line 6)/(Page 6, Col. 1, Line 1 plus Exhibit 7, Col. 2, Line 2) x 100.0 .....	12.0	10.7	12.9	12.9	9.0
64. Lapse percent (ordinary only) [(Exhibit of Life Insurance, Col. 4, Lines 14 & 15) / 1/2 (Exhibit of Life Insurance, Col. 4, Lines 1 & 21)] x 100.0 .....	4.1	4.0	4.2	4.7	5.1
65. A & H loss percent (Schedule H, Part 1, Lines 5 and 6, Col. 2) .....	77.6	74.0	73.5	74.7	70.4
66. A & H cost containment percent (Schedule H, Pt. 1, Line 4, Col. 2) .....	1.2	1.3	1.6	1.7	1.8
67. A & H expense percent excluding cost containment expenses (Schedule H, Pt. 1, Line 10, Col. 2) .....	41.0	40.9	42.8	45.4	48.2
<b>A &amp; H Claim Reserve Adequacy</b>					
68. Incurred losses on prior years' claims - group health (Schedule H, Part 3, Line 3.1 Col. 2) .....					
69. Prior years' claim liability and reserve - group health (Schedule H, Part 3, Line 3.2 Col. 2) .....					
70. Incurred losses on prior years' claims-health other than group (Schedule H, Part 3, Line 3.1 Col. 1 less Col. 2) .....	2,023,132,666	2,013,155,304	1,992,051,459	1,989,698,871	1,978,820,854
71. Prior years' claim liability and reserve-health other than group (Schedule H, Part 3, Line 3.2 Col. 1 less Col. 2) .....	1,900,378,992	1,900,423,384	1,897,074,726	1,888,659,078	1,879,307,672
<b>Net Gains From Operations After Federal Income Taxes by Lines of Business (Page 6, Line 33)</b>					
72. Industrial life (Col. 2) .....					
73. Ordinary - life (Col. 3) .....	(452,874,059)	(273,993,807)	(8,277,135)	(121,956,755)	(84,335,789)
74. Ordinary - individual annuities (Col. 4) .....	105,282,875	32,895,738	(24,879,662)	368,015,232	379,661,383
75. Ordinary-supplementary contracts (Col. 5) .....	41,806,527	44,096,574	33,453,815	23,782,043	18,432,661
76. Credit life (Col. 6) .....					
77. Group life (Col. 7) .....	117,350,263	66,510,596	175,484,510	87,550,371	95,400,181
78. Group annuities (Col. 8) .....	339,521,949	415,593,989	203,257,125	(225,582,784)	183,545,106
79. A & H-group (Col. 9) .....	800,122	833,228	406,735	338,953	204,328
80. A & H-credit (Col. 10) .....					
81. A & H-other (Col. 11) .....	42,641,185	67,608,742	77,596,369	58,568,733	53,613,995
82. Aggregate of all other lines of business (Col. 12) ....					
83. Total (Col. 1) .....	194,528,862	353,545,060	457,041,757	190,715,793	646,521,865

NOTE: If a party to a merger, have the two most recent years of this exhibit been restated due to a merger in compliance with the disclosure requirements of SSAP No. 3, Accounting Changes and Correction of Errors? ..... Yes [ ] No [ ]  
 If no, please explain: .....



**ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company**

DIRECT BUSINESS IN THE STATE OF Grand Total

DURING THE YEAR 2016

NAIC Group Code 0435

**LIFE INSURANCE**

NAIC Company Code 65935

DIRECT PREMIUMS AND ANNUITY CONSIDERATIONS	1	2	3	4	5
	Ordinary	Credit Life (Group and Individual)	Group	Industrial	Total
1. Life insurance	4,920,187,894		1,479,150,269		6,399,338,163
2. Annuity considerations	2,425,098,031		2,509,576,068		4,934,674,099
3. Deposit-type contract funds	794,224	XXX	3,889,701,266	XXX	3,890,495,490
4. Other considerations			7,756,835,663		7,756,835,663
5. Totals (Sum of Lines 1 to 4)	7,346,080,149		15,635,263,266		22,981,343,415
<b>DIRECT DIVIDENDS TO POLICYHOLDERS</b>					
Life insurance:					
6.1 Paid in cash or left on deposit	167,184,594				167,184,594
6.2 Applied to pay renewal premiums	363,233,336				363,233,336
6.3 Applied to provide paid-up additions or shorten the endowment or premium-paying period	1,368,686,029				1,368,686,029
6.4 Other					
6.5 Totals (Sum of Lines 6.1 to 6.4)	1,899,103,959				1,899,103,959
Annuities:					
7.1 Paid in cash or left on deposit	26,111		302		26,413
7.2 Applied to provide paid-up annuities	3,172,846				3,172,846
7.3 Other					
7.4 Totals (Sum of Lines 7.1 to 7.3)	3,198,957		302		3,199,259
8. Grand Totals (Lines 6.5 plus 7.4)	1,902,302,916		302		1,902,303,218
<b>DIRECT CLAIMS AND BENEFITS PAID</b>					
9. Death benefits	1,991,958,028		239,322,992		2,231,281,020
10. Matured endowments	21,985,696		8,072		21,993,768
11. Annuity benefits	692,314,154		983,198,678		1,675,512,832
12. Surrender values and withdrawals for life contracts	2,362,869,579		8,740,727,859		11,103,597,438
13. Aggregate write-ins for miscellaneous direct claims and benefits paid					
14. All other benefits, except accident and health	25,907,843		163,105		26,070,948
15. Totals	5,095,035,300		9,963,420,706		15,058,456,006
<b>DETAILS OF WRITE-INS</b>					
1301.					
1302.					
1303.					
1398. Summary of Line 13 from overflow page					
1399. Totals (Lines 1301 thru 1303 plus 1398) (Line 13 above)					

DIRECT DEATH BENEFITS AND MATURED ENDOWMENTS INCURRED	Ordinary		Credit Life (Group and Individual)		Group		Industrial		Total	
	1	2	3	4	5	6	7	8	9	10
	No.	Amount	No. of Ind.Pols. & Gr. Certifs.	Amount	No. of Certifs.	Amount	No.	Amount	No.	Amount
16. Unpaid December 31, prior year	3,628	389,372,787			80	65,628,097			3,708	455,000,885
17. Incurred during current year	29,503	1,962,466,983			478	212,693,469			29,981	2,175,160,452
Settled during current year:										
18.1 By payment in full	29,997	2,038,390,198			475	239,494,167			30,472	2,277,884,366
18.2 By payment on compromised claims	2	1,200,000							2	1,200,000
18.3 Totals paid	29,999	2,039,590,198			475	239,494,167			30,474	2,279,084,366
18.4 Reduction by compromise	(2)	(800,000)							(2)	(800,000)
18.5 Amount rejected	2	800,000							2	800,000
18.6 Total settlements	29,999	2,039,590,198			475	239,494,167			30,474	2,279,084,366
19. Unpaid Dec. 31, current year (16+17-18.6)	3,132	312,249,572			83	38,827,399			3,215	351,076,971
<b>POLICY EXHIBIT</b>						No. of Policies				
20. In force December 31, prior year	1,544,884	461,835,736,330	(a)		5,188	53,003,956,943			1,550,072	514,839,693,272
21. Issued during year	105,077	62,533,374,525			642	5,979,181,797			105,719	68,512,556,322
22. Other changes to in force (Net)	(69,372)	(21,637,943,405)			(31)	(925,009,520)			(69,403)	(22,562,952,926)
23. In force December 31 of current year	1,580,589	502,731,167,449	(a)		5,799	58,058,129,219			1,586,388	560,789,296,669

(a) Includes Individual Credit Life Insurance prior year \$ \_\_\_\_\_, current year \$ \_\_\_\_\_  
Includes Group Credit Life Insurance Loans less than or equal to 60 months at issue, prior year \$ \_\_\_\_\_, current year \$ \_\_\_\_\_  
Loans greater than 60 months at issue BUT NOT GREATER THAN 120 MONTHS, prior year \$ \_\_\_\_\_, current year \$ \_\_\_\_\_

**ACCIDENT AND HEALTH INSURANCE**

	1	2	3	4	5
	Direct Premiums	Direct Premiums Earned	Dividends Paid Or Credited On Direct Business	Direct Losses Paid	Direct Losses Incurred
24. Group Policies (b)					
24.1 Federal Employees Health Benefits Plan premium (b)					
24.2 Credit (Group and Individual)					
24.3 Collectively renewable policies (b)					
24.4 Medicare Title XVIII exempt from state taxes or fees Other Individual Policies:					
25.1 Non-cancelable (b)	465,922,684	478,675,759	24,833,942	345,826,592	356,192,154
25.2 Guaranteed renewable (b)	220,767,016	219,000,385		29,071,058	50,578,570
25.3 Non-renewable for stated reasons only (b)	9,793,941	10,062,110	516,207	391,753	997,672
25.4 Other accident only					
25.5 All other (b)					
25.6 Totals (sum of Lines 25.1 to 25.5)	696,483,641	707,738,254	25,350,149	375,289,403	407,768,396
26. Totals (Lines 24 + 24.1 + 24.2 + 24.3 + 24.4 + 25.6)	696,483,641	707,738,254	25,350,149	375,289,403	407,768,396

(b) For health business on indicated lines report: Number of persons insured under PPO managed care products .....0 and number of persons  
insured under indemnity only products .....0

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**EXHIBIT OF LIFE INSURANCE**

	Industrial		Ordinary		Credit Life (Group and Individual)		Group			10 Total Amount of Insurance (a)
	1 Number of Policies	2 Amount of Insurance (a)	3 Number of Policies	4 Amount of Insurance (a)	5 Number of Individual Policies and Group Certificates	6 Amount of Insurance (a)	7 Number of		9 Amount of Insurance (a)	
							7 Policies	8 Certificates		
1. In force end of prior year .....			1,563,064	468,567,943			5,188	90,089	55,273,484	523,841,427
2. Issued during year .....			105,077	62,533,375			642	13,973	5,979,182	68,512,557
3. Reinsurance assumed .....				110						110
4. Revived during year .....			38	19,266				49	24,325	43,591
5. Increased during year (net) .....			4	2,367			10	129	799,178	801,545
6. Subtotals, Lines 2 to 5 .....			105,119	62,555,118			652	14,151	6,802,685	69,357,803
7. Additions by dividends during year .....	XXX		XXX	2,630,657	XXX		XXX	XXX		2,630,657
8. Aggregate write-ins for increases .....										
9. Totals (Lines 1 and 6 to 8) .....			1,668,183	533,753,718			5,840	104,240	62,076,169	595,829,887
Deductions during year:										
10. Death .....			17,873	1,785,497			XXX	376	192,085	1,977,582
11. Maturity .....			572	22,432			XXX			22,432
12. Disability .....							XXX			
13. Expiry .....			3,249	300,964						300,964
14. Surrender .....			15,808	3,127,120			14	595	380,848	3,507,968
15. Lapse .....			29,754	16,910,079			11	2,601	1,108,943	18,019,022
16. Conversion .....			2,056	1,390,697			XXX	XXX	XXX	1,390,697
17. Decreased (net) .....			102	753,443			16	10	66,636	820,079
18. Reinsurance .....			887	366,063				11	7,449	373,512
19. Aggregate write-ins for decreases .....										
20. Totals (Lines 10 to 19) .....			70,301	24,656,295			41	3,593	1,755,961	26,412,256
21. In force end of year (Line 9 minus Line 20) .....			1,597,882	509,097,423			5,799	100,647	60,320,208	569,417,631
22. Reinsurance ceded end of year .....	XXX		XXX	359,328,501	XXX		XXX	XXX	16,705,391	376,033,892
23. Line 21 minus Line 22 .....	XXX		XXX	149,768,922	XXX	(b)	XXX	XXX	43,614,817	193,383,739
<b>DETAILS OF WRITE-INS</b>										
0801. ....										
0802. ....										
0803. ....										
0898. Summary of remaining write-ins for Line 8 from overflow page .....										
0899. TOTALS (Lines 0801 thru 0803 plus 0898) (Line 8 above) .....										
1901. ....										
1902. ....										
1903. ....										
1998. Summary of remaining write-ins for Line 19 from overflow page .....										
1999. TOTALS (Lines 1901 thru 1903 plus 1998) (Line 19 above) .....										

(a) Amounts of life insurance in this exhibit shall be shown in thousands (omit 000)

(b) Group \$ ..... ; Individual \$ .....

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**EXHIBIT OF LIFE INSURANCE (Continued)**

**ADDITIONAL INFORMATION ON INSURANCE IN FORCE END OF YEAR**

	Industrial		Ordinary	
	1 Number of Policies	2 Amount of Insurance (a)	3 Number of Policies	4 Amount of Insurance (a)
24. Additions by dividends .....	XXX		XXX	22,673,990
25. Other paid-up insurance .....			125,399	12,248,164
26. Debit ordinary insurance .....	XXX	XXX		

**ADDITIONAL INFORMATION ON ORDINARY INSURANCE**

Term Insurance Excluding Extended Term Insurance	Issued During Year (Included in Line 2)		In Force End of Year (Included in Line 21)	
	1 Number of Policies	2 Amount of Insurance (a)	3 Number of Policies	4 Amount of Insurance (a)
27. Term policies - decreasing .....				
28. Term policies - other .....	38,955	30,571,812	340,791	229,273,653
29. Other term insurance - decreasing .....	XXX		XXX	19
30. Other term insurance .....	XXX	2,342,137	XXX	12,283,265
31. Totals (Lines 27 to 30) .....	38,955	32,913,949	340,791	241,556,937
Reconciliation to Lines 2 and 21:				
32. Term additions .....	XXX	1,469,074	XXX	11,026,824
33. Totals, extended term insurance .....	XXX	XXX	4,712	457,497
34. Totals, whole life and endowment .....	66,122	28,150,352	1,252,379	256,056,164
35. Totals (Lines 31 to 34) .....	105,077	62,533,375	1,597,882	509,097,422

**CLASSIFICATION OF AMOUNT OF INSURANCE (a) BY PARTICIPATING STATUS**

	Issued During Year (Included in Line 2)		In Force End of Year (Included in Line 21)	
	1	2	3	4
	Non-Participating	Participating	Non-Participating	Participating
36. Industrial .....				
37. Ordinary .....	211,936	62,321,439	6,644,927	502,452,495
38. Credit Life (Group and Individual) .....				
39. Group .....		5,979,182	2,262,079	58,058,129
40. Totals (Lines 36 to 39) .....	211,936	68,300,621	8,907,006	560,510,624

**ADDITIONAL INFORMATION ON CREDIT LIFE AND GROUP INSURANCE**

	Credit Life		Group	
	1 Number of Individual Policies and Group Certificates	2 Amount of Insurance (a)	3 Number of Certificates	4 Amount of Insurance (a)
41. Amount of insurance included in Line 2 ceded to other companies .....	XXX		XXX	1,819,754
42. Number in force end of year if the number under shared groups is counted on a pro-rata basis .....		XXX		XXX
43. Federal Employees' Group Life Insurance included in Line 21 .....				
44. Servicemen's Group Life Insurance included in Line 21 .....				
45. Group Permanent Insurance included in Line 21 .....				

**ADDITIONAL ACCIDENTAL DEATH BENEFITS**

46. Amount of additional accidental death benefits in force end of year under ordinary policies (a)	1,687,879
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**BASIS OF CALCULATION OF ORDINARY TERM INSURANCE**

47. State basis of calculation of (47.1) decreasing term insurance contracts containing Family Income, Mortgage Income, etc., policies and riders and of (47.2) term insurance on wife and children under Family, Parent and Child, etc., policies and riders, including above:	
47.1 .....	
47.2 .....	

**NONE**

**POLICIES WITH DISABILITY PROVISIONS**

Disability Provisions	Industrial		Ordinary		Credit		Group	
	1 Number of Policies	2 Amount of Insurance (a)	3 Number of Policies	4 Amount of Insurance (a)	5 Number of Policies	6 Amount of Insurance (a)	7 Number of Certificates	8 Amount of Insurance (a)
48. Waiver of Premium .....			636,765	195,309,170			8,836	3,544,473
49. Disability Income .....								
50. Extended Benefits .....			XXX	XXX				
51. Other .....								
52. Total .....		(b)	636,765	(b) 195,309,170		(b)	8,836	(b) 3,544,473

(a) Amounts of life insurance in this exhibit shall be shown in thousands (omit 000)

(b) See Paragraph 9 of the Annual Audited Financial Reports in the General section of the annual statement instructions

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**EXHIBIT OF NUMBER OF POLICIES, CONTRACTS, CERTIFICATES, INCOME PAYABLE AND ACCOUNT VALUES IN FORCE FOR SUPPLEMENTARY CONTRACTS, ANNUITIES, ACCIDENT & HEALTH AND OTHER POLICIES**

**SUPPLEMENTARY CONTRACTS**

	Ordinary		Group	
	1 Involving Life Contingencies	2 Not Involving Life Contingencies	3 Involving Life Contingencies	4 Not Involving Life Contingencies
1. In force end of prior year .....	4,557	8,583	4	
2. Issued during year .....	385	1,217		
3. Reinsurance assumed .....				
4. Increased during year (net) .....				
5. Total (Lines 1 to 4) .....	4,942	9,800	4	
Deductions during year:				
6. Decreased (net) .....	343	1,097	2	
7. Reinsurance ceded .....				
8. Totals (Lines 6 and 7) .....	343	1,097	2	
9. In force end of year .....	4,599	8,703	2	
10. Amount on deposit .....	152,998,509	(a) 615,526,154	799	(a)
11. Income now payable .....	4,599	1,201		
12. Amount of income payable .....	(a) 17,523,360	(a) 12,463,261	(a) 241	(a)

**ANNUITIES**

	Ordinary		Group	
	1 Immediate	2 Deferred	3 Contracts	4 Certificates
1. In force end of prior year .....	33,722	201,869	15,782	2,090,062
2. Issued during year .....	5,573	8,687	640	308,471
3. Reinsurance assumed .....				
4. Increased during year (net) .....				
5. Totals (Lines 1 to 4) .....	39,295	210,556	16,422	2,398,533
Deductions during year:				
6. Decreased (net) .....	1,291	12,101	1,400	185,253
7. Reinsurance ceded .....				
8. Totals (Lines 6 and 7) .....	1,291	12,101	1,400	185,253
9. In force end of year .....	38,004	198,455	15,022	2,213,280
Income now payable:				
10. Amount of income payable .....	(a) 480,086,055	XXX	XXX	(a) 646,923,868
Deferred fully paid:				
11. Account balance .....	XXX	(a) 3,821,417,907	XXX	(a) 7,789,300,761
Deferred not fully paid:				
12. Account balance .....	XXX	(a) 15,465,226,156	XXX	(a) 63,513,967,714

**ACCIDENT AND HEALTH INSURANCE**

	Group		Credit		Other	
	1 Certificates	2 Premiums in Force	3 Policies	4 Premiums in Force	5 Policies	6 Premiums in Force
1. In force end of prior year .....					341,985	698,218,458
2. Issued during year .....					34,508	56,115,866
3. Reinsurance assumed .....						
4. Increased during year (net) .....		XXX		XXX		XXX
5. Totals (Lines 1 to 4) .....		XXX		XXX	376,493	XXX
Deductions during year:						
6. Conversions .....		XXX	XXX	XXX	XXX	XXX
7. Decreased (net) .....		XXX		XXX	34,297	XXX
8. Reinsurance ceded .....		XXX		XXX		XXX
9. Totals (Lines 6 to 8) .....		XXX		XXX	34,297	XXX
10. In force end of year .....		(a)		(a)	342,196	(a) 715,387,996

**DEPOSIT FUNDS AND DIVIDEND ACCUMULATIONS**

	1	2
	Deposit Funds Contracts	Dividend Accumulations Contracts
1. In force end of prior year .....	43,524	102,266
2. Issued during year .....	1,837	345
3. Reinsurance assumed .....		
4. Increased during year (net) .....	352	1,106
5. Totals (Lines 1 to 4) .....	45,713	103,717
Deductions During Year:		
6. Decreased (net) .....	1,792	6,532
7. Reinsurance ceded .....		
8. Totals (Lines 6 and 7) .....	1,792	6,532
9. In force end of year .....	43,921	97,185
10. Amount of account balance .....	(a) 3,591,853,882	(a) 531,588,125

(a) See Paragraph 9 of the Annual Audited Financial Reports in the General section of the annual statement instructions.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**FORM FOR CALCULATING THE INTEREST MAINTENANCE RESERVE**

**INTEREST MAINTENANCE RESERVE**

	1 Amount
1. Reserve as of December 31, Prior Year .....	349,152,262
2. Current year's realized pre-tax capital gains/(losses) of \$ .....(168,717,822) transferred into the reserve net of taxes of \$ .....(24,257,586) .....	(144,460,236)
3. Adjustment for current year's liability gains/(losses) released from the reserve .....	(64,542,483)
4. Balance before reduction for amount transferred to Summary of Operations (Line 1 + Line 2 + Line 3) .....	140,149,543
5. Current year's amortization released to Summary of Operations (Amortization, Line 1, Column 4) .....	135,285,880
6. Reserve as of December 31, current year (Line 4 minus Line 5)	4,863,663

**AMORTIZATION**

Year of Amortization	1 Reserve as of December 31, Prior Year	2 Current Year's Realized Capital Gains/(Losses) Transferred into the Reserve Net of Taxes	3 Adjustment for Current Year's Liability Gains/(Losses) Released From the Reserve	4 Balance Before Reduction for Current Year's Amortization (Cols. 1 + 2 + 3)
1. 2016 .....	94,951,839	42,206,824	(1,872,783)	135,285,880
2. 2017 .....	70,007,393	(10,230,541)	(3,774,809)	56,002,044
3. 2018 .....	44,882,154	(8,463,578)	(3,863,434)	32,555,143
4. 2019 .....	25,271,768	(8,124,740)	(3,935,746)	13,211,282
5. 2020 .....	12,801,390	(7,784,578)	(4,000,750)	1,016,062
6. 2021 .....	2,734,821	(7,391,375)	(4,070,136)	(8,726,690)
7. 2022 .....	(3,961,726)	(7,193,103)	(4,127,848)	(15,282,677)
8. 2023 .....	(4,501,009)	(7,162,138)	(4,143,457)	(15,806,604)
9. 2024 .....	(3,367,904)	(7,136,561)	(4,159,023)	(14,663,488)
10. 2025 .....	(1,150,980)	(6,964,743)	(4,164,393)	(12,280,116)
11. 2026 .....	1,474,054	(7,041,879)	(4,195,214)	(9,763,039)
12. 2027 .....	4,119,390	(6,965,363)	(3,923,545)	(6,769,518)
13. 2028 .....	6,474,278	(6,608,944)	(3,417,575)	(3,552,241)
14. 2029 .....	7,512,581	(6,421,835)	(2,851,318)	(1,760,572)
15. 2030 .....	8,729,293	(6,065,299)	(2,230,662)	433,332
16. 2031 .....	8,978,538	(5,804,051)	(1,693,622)	1,480,865
17. 2032 .....	9,148,904	(5,773,836)	(1,316,689)	2,058,379
18. 2033 .....	8,752,969	(5,913,655)	(1,259,545)	1,579,769
19. 2034 .....	9,681,505	(6,191,461)	(1,214,321)	2,275,723
20. 2035 .....	11,437,022	(6,434,835)	(1,153,041)	3,849,146
21. 2036 .....	13,100,397	(6,572,146)	(1,114,610)	5,413,641
22. 2037 .....	12,714,494	(6,609,605)	(972,599)	5,132,290
23. 2038 .....	9,473,450	(6,507,505)	(774,048)	2,191,897
24. 2039 .....	6,079,301	(6,201,062)	(507,326)	(629,087)
25. 2040 .....	(104,230)	(6,143,684)	(250,383)	(6,498,297)
26. 2041 .....	(934,655)	(5,869,165)	13,345	(6,790,475)
27. 2042 .....	(2,791,475)	(5,319,982)	157,361	(7,954,096)
28. 2043 .....	(1,098,998)	(4,234,272)	123,361	(5,209,909)
29. 2044 .....	(731,930)	(3,039,990)	85,308	(3,686,612)
30. 2045 .....	(530,374)	(1,845,708)	49,076	(2,327,006)
31. 2046 and Later		(651,426)	15,943	(635,483)
32. Total (Lines 1 to 31)	349,152,262	(144,460,236)	(64,542,483)	140,149,543

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE**

	Default Component			Equity Component			7 Total Amount (Cols. 3 + 6)
	1 Other Than Mortgage Loans	2 Mortgage Loans	3 Total (Cols. 1 + 2)	4 Common Stock	5 Real Estate and Other Invested Assets	6 Total (Cols. 4 + 5)	
1. Reserve as of December 31, prior year .....	789,093,043	139,212,563	928,305,606	940,806,337	948,026,416	1,888,832,753	2,817,138,360
2. Realized capital gains/(losses) net of taxes - General Account .....	36,004,575	(8,914,135)	27,090,440	(31,706,797)	(52,447,755)	(84,154,552)	(57,064,112)
3. Realized capital gains/(losses) net of taxes - Separate Accounts .....							
4. Unrealized capital gains/(losses) net of deferred taxes - General Account .....	(86,346,297)	(105,005,843)	(191,352,140)	588,504,426	(65,445,456)	523,058,970	331,706,830
5. Unrealized capital gains/(losses) net of deferred taxes - Separate Accounts .....							
6. Capital gains credited/(losses charged) to contract benefits, payments or reserves .....	(3,725,483)	(395,073)	(4,120,556)	436,379	57,221	493,600	(3,626,956)
7. Basic contribution .....	205,333,681	49,741,832	255,075,513	8,931,207	9,016,661	17,947,868	273,023,381
8. Accumulated balances (Lines 1 through 5 - 6 + 7) .....	947,810,485	75,429,490	1,023,239,975	1,506,098,794	839,092,645	2,345,191,439	3,368,431,415
9. Maximum reserve .....	961,919,988	210,370,063	1,172,290,051	1,247,976,280	1,025,709,738	2,273,686,017	3,445,976,069
10. Reserve objective .....	677,477,798	162,014,001	839,491,798	1,234,800,404	1,013,747,754	2,248,548,158	3,088,039,956
11. 20% of (Line 10 - Line 8) .....	(54,066,538)	17,316,902	(36,749,635)	(54,259,678)	34,931,022	(19,328,656)	(56,078,292)
12. Balance before transfers (Lines 8 + 11) .....	893,743,948	92,746,392	986,490,339	1,451,839,116	874,023,667	2,325,862,783	3,312,353,123
13. Transfers .....				(151,686,071)	151,686,071		
14. Voluntary contribution .....							
15. Adjustment down to maximum/up to zero .....				(52,176,767)		(52,176,767)	(52,176,767)
16. Reserve as of December 31, current year (Lines 12 + 13 + 14 + 15) .....	893,743,948	92,746,392	986,490,339	1,247,976,278	1,025,709,738	2,273,686,016	3,260,176,356

**ASSET VALUATION RESERVE**  
**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS**  
**DEFAULT COMPONENT**

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
<b>LONG-TERM BONDS</b>												
1.		Exempt Obligations .....	6,819,359,058	XXX	XXX	6,819,359,058	0.0000		0.0000		0.0000	
2.	1	Highest Quality .....	40,878,832,614	XXX	XXX	40,878,832,614	0.0004	16,351,533	0.0023	94,021,315	0.0030	122,636,498
3.	2	High Quality .....	29,068,893,233	XXX	XXX	29,068,893,233	0.0019	55,230,897	0.0058	168,599,581	0.0090	261,620,039
4.	3	Medium Quality .....	3,255,670,406	XXX	XXX	3,255,670,406	0.0093	30,277,735	0.0230	74,880,419	0.0340	110,692,794
5.	4	Low Quality .....	2,390,477,011	XXX	XXX	2,390,477,011	0.0213	50,917,160	0.0530	126,695,282	0.0750	179,285,776
6.	5	Lower Quality .....	1,048,682,354	XXX	XXX	1,048,682,354	0.0432	45,303,078	0.1100	115,355,059	0.1700	178,276,000
7.	6	In or Near Default .....	358,903,018	XXX	XXX	358,903,018	0.0000		0.2000	71,780,604	0.2000	71,780,604
8.		Total Unrated Multi-class Securities Acquired by Conversion .....		XXX	XXX		XXX		XXX		XXX	
9.		Total Long-Term Bonds (Sum of Lines 1 through 8)	83,820,817,694	XXX	XXX	83,820,817,694	XXX	198,080,403	XXX	651,332,259	XXX	924,291,710
<b>PREFERRED STOCK</b>												
10.	1	Highest Quality .....	144,700,000	XXX	XXX	144,700,000	0.0004	57,880	0.0023	332,810	0.0030	434,100
11.	2	High Quality .....	165,906,546	XXX	XXX	165,906,546	0.0019	315,222	0.0058	962,258	0.0090	1,493,159
12.	3	Medium Quality .....	123,000,000	XXX	XXX	123,000,000	0.0093	1,143,900	0.0230	2,829,000	0.0340	4,182,000
13.	4	Low Quality .....	2,797,430	XXX	XXX	2,797,430	0.0213	59,585	0.0530	148,264	0.0750	209,807
14.	5	Lower Quality .....	13,131,970	XXX	XXX	13,131,970	0.0432	567,301	0.1100	1,444,517	0.1700	2,232,435
15.	6	In or Near Default .....	15,389,326	XXX	XXX	15,389,326	0.0000		0.2000	3,077,865	0.2000	3,077,865
16.		Affiliated Life with AVR .....		XXX	XXX		0.0000		0.0000		0.0000	
17.		Total Preferred Stocks (Sum of Lines 10 through 16)	464,925,272	XXX	XXX	464,925,272	XXX	2,143,889	XXX	8,794,714	XXX	11,629,366
<b>SHORT - TERM BONDS</b>												
18.		Exempt Obligations .....		XXX	XXX		0.0000		0.0000		0.0000	
19.	1	Highest Quality .....	370,478,324	XXX	XXX	370,478,324	0.0004	148,191	0.0023	852,100	0.0030	1,111,435
20.	2	High Quality .....	337,513,903	XXX	XXX	337,513,903	0.0019	641,276	0.0058	1,957,581	0.0090	3,037,625
21.	3	Medium Quality .....		XXX	XXX		0.0093		0.0230		0.0340	
22.	4	Low Quality .....		XXX	XXX		0.0213		0.0530		0.0750	
23.	5	Lower Quality .....		XXX	XXX		0.0432		0.1100		0.1700	
24.	6	In or Near Default .....		XXX	XXX		0.0000		0.2000		0.2000	
25.		Total Short - Term Bonds (Sum of Lines 18 through 24)	707,992,227	XXX	XXX	707,992,227	XXX	789,468	XXX	2,809,681	XXX	4,149,060
<b>DERIVATIVE INSTRUMENTS</b>												
26.		Exchange Traded .....		XXX	XXX		0.0004		0.0023		0.0030	
27.	1	Highest Quality .....	744,952,133	XXX	XXX	744,952,133	0.0004	297,981	0.0023	1,713,390	0.0030	2,234,856
28.	2	High Quality .....		XXX	XXX		0.0019		0.0058		0.0090	
29.	3	Medium Quality .....		XXX	XXX		0.0093		0.0230		0.0340	
30.	4	Low Quality .....		XXX	XXX		0.0213		0.0530		0.0750	
31.	5	Lower Quality .....		XXX	XXX		0.0432		0.1100		0.1700	
32.	6	In or Near Default .....		XXX	XXX		0.0000		0.2000		0.2000	
33.		Total Derivative Instruments .....	744,952,133	XXX	XXX	744,952,133	XXX	297,981	XXX	1,713,390	XXX	2,234,856
34.		Total (Lines 9 + 17 + 25 + 33)	85,738,687,326	XXX	XXX	85,738,687,326	XXX	201,311,740	XXX	664,650,044	XXX	942,304,993

**ASSET VALUATION RESERVE (Continued)**  
**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS**  
**DEFAULT COMPONENT**

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
MORTGAGE LOANS												
In Good Standing:												
35.		Farm Mortgages - CM1 - Highest Quality .....	1,727,027		XXX	1,727,027	0.0010	1,727	0.0050	8,635	0.0065	11,226
36.		Farm Mortgages - CM2 - High Quality .....			XXX		0.0035		0.0100		0.0130	
37.		Farm Mortgages - CM3 - Medium Quality .....			XXX		0.0060		0.0175		0.0225	
38.		Farm Mortgages - CM4 - Low Medium Quality .....			XXX		0.0105		0.0300		0.0375	
39.		Farm Mortgages - CM5 - Low Quality .....			XXX		0.0160		0.0425		0.0550	
40.		Residential Mortgages - Insured or Guaranteed .....	1,762,761,615		XXX	1,762,761,615	0.0003	528,828	0.0006	1,057,657	0.0010	1,762,762
41.		Residential Mortgages - All Other .....	5,142,195		XXX	5,142,195	0.0013	6,685	0.0030	15,427	0.0040	20,569
42.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0003		0.0006		0.0010	
43.		Commercial Mortgages - All Other - CM1 - Highest Quality .....	9,247,081,933	(27,687,878)	XXX	9,219,394,055	0.0010	9,219,394	0.0050	46,096,970	0.0065	59,926,061
44.		Commercial Mortgages - All Other - CM2 - High Quality .....	8,138,992,777		XXX	8,138,992,777	0.0035	28,486,475	0.0100	81,389,928	0.0130	105,806,906
45.		Commercial Mortgages - All Other - CM3 - Medium Quality .....	1,657,295,735		XXX	1,657,295,735	0.0060	9,943,774	0.0175	29,002,675	0.0225	37,289,154
46.		Commercial Mortgages - All Other - CM4 - Low Medium Quality .....	148,090,283		XXX	148,090,283	0.0105	1,554,948	0.0300	4,442,708	0.0375	5,553,386
47.		Commercial Mortgages - All Other - CM5 - Low Quality .....			XXX		0.0160		0.0425		0.0550	
Overdue, Not in Process:												
48.		Farm Mortgages .....			XXX		0.0420		0.0760		0.1200	
49.		Residential Mortgages - Insured or Guaranteed .....			XXX		0.0005		0.0012		0.0020	
50.		Residential Mortgages - All Other .....			XXX		0.0025		0.0058		0.0090	
51.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0005		0.0012		0.0020	
52.		Commercial Mortgages - All Other .....			XXX		0.0420		0.0760		0.1200	
In Process of Foreclosure:												
53.		Farm Mortgages .....			XXX		0.0000		0.1700		0.1700	
54.		Residential Mortgages - Insured or Guaranteed .....			XXX		0.0000		0.0040		0.0040	
55.		Residential Mortgages - All Other .....			XXX		0.0000		0.0130		0.0130	
56.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0000		0.0040		0.0040	
57.		Commercial Mortgages - All Other .....			XXX		0.0000		0.1700		0.1700	
58.		Total Schedule B Mortgages (Sum of Lines 35 through 57)	20,961,091,565	(27,687,878)	XXX	20,933,403,687	XXX	49,741,832	XXX	162,014,001	XXX	210,370,063
59.		Schedule DA Mortgages			XXX		0.0030		0.0100		0.0130	
60.		Total Mortgage Loans on Real Estate (Lines 58 + 59)	20,961,091,565	(27,687,878)	XXX	20,933,403,687	XXX	49,741,832	XXX	162,014,001	XXX	210,370,063

**ASSET VALUATION RESERVE**  
**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS**  
**EQUITY AND OTHER INVESTED ASSET COMPONENT**

Line Number	NAIC Designation	Description	1	2	3	4	Basic Contribution		Reserve Objective		Maximum Reserve	
			Book/Adjusted Carrying Value	Reclassify Related Party Encumbrances	Add Third Party Encumbrances	Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	5	6	7	8	9	10
							Factor	Amount (Cols. 4 x 5)	Factor	Amount (Cols. 4 x 7)	Factor	Amount (Cols. 4 x 9)
<b>COMMON STOCK</b>												
1.		Unaffiliated - Public .....	766,715,746	XXX	XXX	766,715,746	0.0000		0.1515 (a)	116,157,436	0.1515 (a)	116,157,436
2.		Unaffiliated - Private .....	278,524,373	XXX	XXX	278,524,373	0.0000		0.1600	44,563,900	0.1600	44,563,900
3.		Federal Home Loan Bank .....	74,500,000	XXX	XXX	74,500,000	0.0000		0.0050	372,500	0.0080	596,000
4.		Affiliated - Life with AVR .....	1,546,673,795	XXX	XXX	1,546,673,795	0.0000		0.0000		0.0000	
Affiliated - Investment Subsidiary:												
5.		Fixed Income - Exempt Obligations .....	654,532,091			654,532,091	XXX		XXX		XXX	
6.		Fixed Income - Highest Quality .....	1,921,564,515			1,921,564,515	XXX	768,626	XXX	4,419,598	XXX	5,764,694
7.		Fixed Income - High Quality .....	1,855,377,417			1,855,377,417	XXX	3,525,217	XXX	10,761,189	XXX	16,698,397
8.		Fixed Income - Medium Quality .....	294,863,649			294,863,649	XXX	2,742,232	XXX	6,781,864	XXX	10,025,364
9.		Fixed Income - Low Quality .....	27,106,289			27,106,289	XXX	577,364	XXX	1,436,633	XXX	2,032,972
10.		Fixed Income - Lower Quality .....	30,503,896			30,503,896	XXX	1,317,768	XXX	3,355,429	XXX	5,185,662
11.		Fixed Income - In/Near Default .....	100,877,827			100,877,827	XXX		XXX	20,175,565	XXX	20,175,565
12.		Unaffiliated Common Stock - Public .....					0.0000		0.1300 (a)		0.1300 (a)	
13.		Unaffiliated Common Stock - Private .....					0.0000		0.1600		0.1600	
14.		Real Estate .....					(b)		(b)		(b)	
15.		Affiliated - Certain Other (See SVO Purposes and Procedures Manual) .....	7,438,898,112	XXX	XXX	7,438,898,112	0.0000		0.1300	967,056,755	0.1300	967,056,755
16.		Affiliated - All Other .....	373,247,100	XXX	XXX	373,247,100	0.0000		0.1600	59,719,536	0.1600	59,719,536
17.		Total Common Stock (Sum of Lines 1 through 16)	15,363,384,810			15,363,384,810	XXX	8,931,207	XXX	1,234,800,404	XXX	1,247,976,280
<b>REAL ESTATE</b>												
18.		Home Office Property (General Account only) .....	158,135,975			158,135,975	0.0000		0.0750	11,860,198	0.0750	11,860,198
19.		Investment Properties .....	818,543,982		710,199,688	1,528,743,670	0.0000		0.0750	114,655,775	0.0750	114,655,775
20.		Properties Acquired in Satisfaction of Debt .....					0.0000		0.1100		0.1100	
21.		Total Real Estate (Sum of Lines 18 through 20)	976,679,957		710,199,688	1,686,879,645	XXX		XXX	126,515,973	XXX	126,515,973
<b>OTHER INVESTED ASSETS</b>												
<b>INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF BONDS</b>												
22.		Exempt Obligations .....		XXX	XXX		0.0000		0.0000		0.0000	
23.	1	Highest Quality .....		XXX	XXX		0.0004		0.0023		0.0030	
24.	2	High Quality .....	627,915,286	XXX	XXX	627,915,286	0.0019	1,193,039	0.0058	3,641,909	0.0090	5,651,238
25.	3	Medium Quality .....		XXX	XXX		0.0093		0.0230		0.0340	
26.	4	Low Quality .....	113,218	XXX	XXX	113,218	0.0213	2,412	0.0530	6,001	0.0750	8,491
27.	5	Lower Quality .....	114,971,170	XXX	XXX	114,971,170	0.0432	4,966,755	0.1100	12,646,829	0.1700	19,545,099
28.	6	In or Near Default .....		XXX	XXX		0.0000		0.2000		0.2000	
29.		Total with Bond Characteristics (Sum of Lines 22 through 28)	742,999,674	XXX	XXX	742,999,674	XXX	6,162,205	XXX	16,294,738	XXX	25,204,828

**ASSET VALUATION RESERVE (Continued)**  
**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS**  
**EQUITY AND OTHER INVESTED ASSET COMPONENT**

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols.4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF PREFERRED STOCKS												
30.	1	Highest Quality .....	185,066,927	XXX	XXX	185,066,927	0.0004	74,027	0.0023	425,654	0.0030	555,201
31.	2	High Quality .....	9,350,000	XXX	XXX	9,350,000	0.0019	17,765	0.0058	54,230	0.0090	84,150
32.	3	Medium Quality .....		XXX	XXX		0.0093		0.0230		0.0340	
33.	4	Low Quality .....		XXX	XXX		0.0213		0.0530		0.0750	
34.	5	Lower Quality .....		XXX	XXX		0.0432		0.1100		0.1700	
35.	6	In or Near Default .....		XXX	XXX		0.0000		0.2000		0.2000	
36.		Affiliated Life with AVR .....		XXX	XXX		0.0000		0.0000		0.0000	
37.		Total with Preferred Stock Characteristics (Sum of Lines 30 through 36)	194,416,927	XXX	XXX	194,416,927	XXX	91,792	XXX	479,884	XXX	639,351
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF MORTGAGE LOANS												
In Good Standing Affiliated:												
38.		Mortgages - CM1 - Highest Quality .....	12,481,691		XXX	12,481,691	0.0010	12,482	0.0050	62,408	0.0065	81,131
39.		Mortgages - CM2 - High Quality .....	83,561,530		XXX	83,561,530	0.0035	292,465	0.0100	835,615	0.0130	1,086,300
40.		Mortgages - CM3 - Medium Quality .....	71,153,246		XXX	71,153,246	0.0060	426,919	0.0175	1,245,182	0.0225	1,600,948
41.		Mortgages - CM4 - Low Medium Quality .....			XXX		0.0105		0.0300		0.0375	
42.		Mortgages - CM5 - Low Quality .....			XXX		0.0160		0.0425		0.0550	
43.		Residential Mortgages - Insured or Guaranteed .....			XXX		0.0003		0.0006		0.0010	
44.		Residential Mortgages - All Other .....		XXX	XXX		0.0013		0.0030		0.0040	
45.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0003		0.0006		0.0010	
Overdue, Not in Process Affiliated:												
46.		Farm Mortgages .....			XXX		0.0420		0.0760		0.1200	
47.		Residential Mortgages - Insured or Guaranteed .....			XXX		0.0005		0.0012		0.0020	
48.		Residential Mortgages - All Other .....			XXX		0.0025		0.0058		0.0090	
49.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0005		0.0012		0.0020	
50.		Commercial Mortgages - All Other .....			XXX		0.0420		0.0760		0.1200	
In Process of Foreclosure Affiliated:												
51.		Farm Mortgages .....			XXX		0.0000		0.1700		0.1700	
52.		Residential Mortgages - Insured or Guaranteed .....			XXX		0.0000		0.0040		0.0040	
53.		Residential Mortgages - All Other .....			XXX		0.0000		0.0130		0.0130	
54.		Commercial Mortgages - Insured or Guaranteed .....			XXX		0.0000		0.0040		0.0040	
55.		Commercial Mortgages - All Other .....			XXX		0.0000		0.1700		0.1700	
56.		Total Affiliated (Sum of Lines 38 through 55)	167,196,467		XXX	167,196,467	XXX	731,867	XXX	2,143,206	XXX	2,768,379
57.		Unaffiliated - In Good Standing With Covenants .....			XXX		(c)		(c)		(c)	
58.		Unaffiliated - In Good Standing Defeased With Government Securities .....			XXX		0.0010		0.0050		0.0065	
59.		Unaffiliated - In Good Standing Primarily Senior .....	1,384,107		XXX	1,384,107	0.0035	4,844	0.0010	1,384	0.0130	17,993
60.		Unaffiliated - In Good Standing All Other .....	415,935		XXX	415,935	0.0060	2,496	0.0175	7,279	0.0225	9,359
61.		Unaffiliated - Overdue, Not in Process .....			XXX		0.0420		0.0760		0.1200	
62.		Unaffiliated - In Process of Foreclosure .....			XXX		0.0000		0.1700		0.1700	
63.		Total Unaffiliated (Sum of Lines 57 through 62)	1,800,042		XXX	1,800,042	XXX	7,340	XXX	8,663	XXX	27,352
64.		Total with Mortgage Loan Characteristics (Lines 56 + 63)	168,996,509		XXX	168,996,509	XXX	739,207	XXX	2,151,869	XXX	2,795,731

**ASSET VALUATION RESERVE (Continued)**  
**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS**  
**EQUITY AND OTHER INVESTED ASSET COMPONENT**

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF COMMON STOCK												
65.		Unaffiliated Public .....		XXX	XXX		0.0000		0.1300 (a)		0.1300 (a)	
66.		Unaffiliated Private .....	2,849,160,999	XXX	XXX	2,849,160,999	0.0000		0.1600	455,865,760	0.1600	455,865,760
67.		Affiliated Life with AVR .....		XXX	XXX		0.0000		0.0000		0.0000	
68.		Affiliated Certain Other (See SVO Purposes & Procedures Manual) .....		XXX	XXX		0.0000		0.1300		0.1300	
69.		Affiliated Other - All Other .....	1,432,483,356	XXX	XXX	1,432,483,356	0.0000		0.1600	229,197,337	0.1600	229,197,337
70.		Total with Common Stock Characteristics (Sum of Lines 65 through 69)	4,281,644,355	XXX	XXX	4,281,644,355	XXX		XXX	685,063,097	XXX	685,063,097
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF REAL ESTATE												
71.		Home Office Property (General Account only) .....					0.0000		0.0750		0.0750	
72.		Investment Properties .....	1,203,280,290	27,687,878	692,197,308	1,923,165,476	0.0000		0.0750	144,237,411	0.0750	144,237,411
73.		Properties Acquired in Satisfaction of Debt .....					0.0000		0.1100		0.1100	
74.		Total with Real Estate Characteristics (Sum of Lines 71 through 73)	1,203,280,290	27,687,878	692,197,308	1,923,165,476	XXX		XXX	144,237,411	XXX	144,237,411
LOW INCOME HOUSING TAX CREDIT INVESTMENTS												
75.		Guaranteed Federal Low Income Housing Tax Credit .....	4,178,447			4,178,447	0.0003	1,254	0.0006	2,507	0.0010	4,178
76.		Non-guaranteed Federal Low Income Housing Tax Credit .....	320,984,711			320,984,711	0.0063	2,022,204	0.0120	3,851,817	0.0190	6,098,710
77.		Guaranteed State Low Income Housing Tax Credit .....					0.0003		0.0006		0.0010	
78.		Non-guaranteed State Low Income Housing Tax Credit .....					0.0063		0.0120		0.0190	
79.		All Other Low Income Housing Tax Credit .....					0.0273		0.0600		0.0975	
80.		Total LIHTC (Sum of Lines 75 through 79)	325,163,157			325,163,157	XXX	2,023,457	XXX	3,854,324	XXX	6,102,888
ALL OTHER INVESTMENTS												
81.		NAIC 1 Working Capital Finance Investments .....		XXX			0.0000		0.0037		0.0037	
82.		NAIC 2 Working Capital Finance Investments .....		XXX			0.0000		0.0120		0.0120	
83.		Other Invested Assets - Schedule BA .....	270,388,149	XXX		270,388,149	0.0000		0.1300	35,150,459	0.1300	35,150,459
84.		Other Short-Term Invested Assets - Schedule DA .....		XXX			0.0000		0.1300		0.1300	
85.		Total All Other (Sum of Lines 81, 82, 83 and 84) .....	270,388,149	XXX		270,388,149	XXX		XXX	35,150,459	XXX	35,150,459
86.		Total Other Invested Assets - Schedules BA & DA (Sum of Lines 29, 37, 64, 70, 74, 80 and 85)	7,186,889,061	27,687,878	692,197,308	7,906,774,247	XXX	9,016,661	XXX	887,231,781	XXX	899,193,764

(a) Times the company's weighted average portfolio beta (Minimum .10, Maximum .20).  
 (b) Determined using the same factors and breakdowns used for directly owned real estate.  
 (c) This will be the factor associated with the risk category determined in the company generated worksheet.



ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	52,438,752	20,976	120,609	157,316
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	54,946,171	21,978	126,376	164,839
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	52,503,942	21,002	120,759	157,512
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,847,772	20,339	116,950	152,543
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	54,208,213	21,683	124,679	162,625
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AN1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AP6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	51,407,270	97,674	298,162	462,665
57629*AP6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2				
57629*AP6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2				
57629*AP6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2				
57629*AP6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2				
57629*AQ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	51,965,192	20,786	119,520	155,896
57629*AQ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AQ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AQ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AQ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	59,336,261	23,735	136,473	178,009
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AR2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AS0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	52,209,276	20,884	120,081	156,628
57629*AS0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AS0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AS0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AT8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	51,456,575	20,583	118,350	154,370
57629*AT8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AT8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AT8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	58,217,279	23,287	133,900	174,652
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	61,103,123	24,441	140,537	183,309
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	56,556,592	22,623	130,080	169,670
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,404,132	24,162	138,930	181,212
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	58,605,253	23,442	134,792	175,816
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	63,315,424	25,326	145,625	189,946
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BB6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,800,000	22,320	128,340	167,400
57629*AZ4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,800,000	22,320	128,340	167,400
92553PA*3	R		Viacom, Inc. Senior Note	2	23,756,680	45,138	137,789	213,810
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	112,158,361	44,863	257,964	336,475
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	107,397,087	42,959	247,013	322,191
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BE0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	164,835,009	65,934	379,121	494,505
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	139,604,145	55,842	321,090	418,812
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BG5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	156,000,000	62,400	358,800	468,000
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	160,947,468	64,379	370,179	482,842
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BH3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BJ9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	159,209,907	63,684	366,183	477,630
57629*BJ9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BJ9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BJ9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				
57629*BK6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	154,818,705	61,927	356,083	464,456
57629*BK6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1				

























ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	Basic Contribution	Reserve Objective	Maximum Reserve
CW		05618M-AJ-3	Babson CLO Ltd 2014-III Secd Def Mezz Term Nt C C-1	1	6,447,668	(2,579)	(14,830)	(19,343)
CW		50183X-AG-6	LCM Ltd Partnership Series 11A Class C	1	2,022,382	(809)	(4,651)	(6,067)
CW		87154E-AF-7	Symphony CLO XV Ltd Def Mezz NT CL D 144A	1	4,514,548	(1,806)	(10,383)	(13,544)
CW		15135A-AA-1	Cent CDO Ltd Series 2006-12A Class A	1	3,904,532	(1,562)	(8,980)	(11,714)
CW		056162-AC-4	Babson CLO Ltd 2015-I Sr Secd Note Class B	1	4,112,451	(1,645)	(9,459)	(12,337)
CW		81789G-AA-9	SEVEN STICKS CLO LTD Sr Secured Note Class A-1	1	17,400,000	(6,960)	(40,020)	(52,200)
CW		46617Y-AD-5	JFIN CLO LTD Series 2015-1A Class C1	1	6,857,975	(2,743)	(15,773)	(20,574)
CW		24820R-AA-6	Statoil ASA Senior Unsecured Note	1	13,911,768	(5,565)	(31,997)	(41,735)
CW		00162L-AW-7	ALM XVI, LTD.	1	4,119,854	(1,648)	(9,476)	(12,360)
CW		053633-AB-9	AVERY POINT CLO LTD.	1	4,388,373	(1,755)	(10,093)	(13,165)
CW		04965C-AC-2	ATRIUM XII Note Class B	1	12,116,207	(4,846)	(27,867)	(36,349)
CW		94949L-AA-8	WELLFLEET CLO 2016-2 LTD	1	10,500,000	(4,200)	(24,150)	(31,500)
CW		55953H-AL-7	MAGNETITE CLO LTD	1	10,000,000	(4,000)	(23,000)	(30,000)
CW		00900A-AA-6	Aimco Series 2014-AA Class A	1	43,800,000	(17,520)	(100,740)	(131,400)
CW		14309D-AC-4	Carlyle High Yield Partners Series 2007-10A Class A2B	1	11,757,197	(4,703)	(27,042)	(35,272)
CW		48251B-AA-8	KKR CLO 16 Ltd Sr Secd Nt CI A-1	1	6,800,000	(2,720)	(15,640)	(20,400)
CW		26250U-AC-9	Dryden Senior Loan Fund Series 2013-26A Class A	1	35,089,107	(14,036)	(80,705)	(105,267)
CW		67590B-AE-0	Octagon Inv Partners XVI Ltd Series 2013-1A Class C1	1	4,900,000	(1,960)	(11,270)	(14,700)
CW		38136B-AG-7	Goldentree Loan Opp III Ltd Sr Secured Nt Class A-1B-J	1	4,284,858	(1,714)	(9,855)	(12,855)
CW		55817U-AB-6	Madison Park Funding Ltd Series 2007-4A Class A1B	1	15,110,140	(6,044)	(34,753)	(45,330)
CW		26828C-AC-2	ECP CLO Ltd Series 2012-4A Class A2	1	8,555,143	(3,422)	(19,677)	(25,665)
CW		87155M-AC-5	Symphony CLO Ltd Series 2007-5A Class A2	1	9,173,987	(3,670)	(21,100)	(27,522)
CW		10302V-AG-0	Bowman Park CLO Ltd Series 2014-1A Class C	1	6,774,357	(2,710)	(15,581)	(20,323)
CW		55818X-BA-0	MADISON PARK FUNDING XVI, LTD.	1	7,000,000	(2,800)	(16,100)	(21,000)
CW		949496-AC-7	WELLFLEET CLO LTD Series 2015-1A Class A1	1	50,000,000	(20,000)	(115,000)	(150,000)
CW		67104L-AA-5	OHA Loan Funding Ltd. Series 2013-2A Class A	1	34,750,757	(13,900)	(79,927)	(104,252)
CW		38137D-AC-1	Goldentree Loan Opp VII Ltd Sr Secured Nt Class B-1 144A	1	9,150,000	(3,660)	(21,045)	(27,450)
CW		92329X-AA-6	Venture XVI CLO Ltd Sr Secd Note Class A-1L 144A	1	42,816,211	(17,126)	(98,477)	(128,449)
CW		89852T-AC-2	Tryon Park CLO Ltd Series 2013-1A Class A2	1	17,900,000	(7,160)	(41,170)	(53,700)
CW		14310U-AC-3	Carlyle Global Mkt CLO 2014-4 Sr Secd Note Class A-1 Accd	1	9,325,000	(3,730)	(21,448)	(27,975)
CW		38137D-AG-2	Goldentree Loan Opp VII Ltd Sr Secured Nt Class C-1 144A	1	5,400,000	(2,160)	(12,420)	(16,200)
CW		09626Y-AC-4	Bluemountain CLO 2013-2 Ltd Sr Secured Note Class B-1 144A	1	10,100,000	(4,040)	(23,230)	(30,300)
CW		74982L-AE-0	Race Point CLO Ltd. Series 2013-8A Class B	1	6,849,999	(2,740)	(15,755)	(20,550)
CW		33882W-AA-1	Flatiron CLO Ltd. Series 2011-1A Class A	1	5,726,771	(2,291)	(13,172)	(17,180)
CW		29108Q-AC-6	Emerson Park CLO Ltd Series 2013-1A Class B1	1	13,396,822	(5,359)	(30,813)	(40,190)
CW		94949L-AC-4	Wellfleet CLO 2016-2 Ltd Sr Secd Nt CI A-2	1	6,859,033	(2,744)	(15,776)	(20,577)
CW		50184V-AG-9	L C M Ltd Partnership Series 14A Class C	1	5,046,403	(2,019)	(11,607)	(15,139)
CW		46617N-AE-7	JFIN CLO 2014-II Ltd Sr Secd Deferrable Nt Class B	1	4,954,986	(1,982)	(11,396)	(14,865)
CW		00163E-AM-4	ALM VI Ltd Series 2012-6A Class A2R	1	14,228,635	(5,691)	(32,726)	(42,686)
CW		50189G-AC-6	LCM XXII Ltd Sr Note CI A-2	1	6,825,000	(2,730)	(15,698)	(20,475)
CW		09626U-AQ-1	Bluemountain CLO 2013-1 Ltd Sr Secd Def Nt CI B-R	1	4,253,811	(1,702)	(9,784)	(12,761)
CW		26249K-AM-3	DRYDEN 36 SR LN FD SR SECD DEF NT CL C-R	1	6,350,000	(2,540)	(14,605)	(19,050)
CW		46617E-AC-1	JFIN CLO 2014 Ltd Sr Secured Note Class B-1	1	1,278,846	(512)	(2,941)	(3,837)
CW		854432-AA-9	Staniford Street CLO Ltd Sr Secd Nt Class A	1	15,332,994	(6,133)	(35,266)	(45,999)
CW		09625J-AA-2	Bluemountain CLO 2013-3 Ltd Sr Secured Note Class A 144A	1	20,037,365	(8,015)	(46,086)	(60,112)
CW		568416-BD-2	MARINE PARK CLO LTD Sr Secd Deferrable Nt CI B-R	1	9,568,393	(3,827)	(22,007)	(28,705)
CW		26245C-AE-3	DRYDEN 43 SENIOR LOAN FUND Sr Secd Note Class B	1	7,500,000	(3,000)	(17,250)	(22,500)
CW		15135D-AC-1	Cent CDO 14 Ltd Sr Term Note Class B	1	7,303,765	(2,922)	(16,799)	(21,911)
CW		03765P-AC-7	APIDOS CLO XXI Sr Secured Note Class A-2 144A	1	12,000,000	(4,800)	(27,600)	(36,000)
CW		38137P-AE-0	Goldentree Loan Opp X Ltd Sr Secd Note Class B 144A	1	11,725,000	(4,690)	(26,968)	(35,175)
CW		04013Y-AQ-5	Ares XXIV CLO Ltd Sr Secd Note Class B-1-R	1	11,250,000	(4,500)	(25,875)	(33,750)
CW		26250D-AS-2	Dryden XXIV Senior Loan Fund Series 2012-24RA Class BR	1	11,195,000	(4,478)	(25,749)	(33,585)
CW		14311A-AG-7	Carlyle Global Market Strategi Series 2014-5A Class C	2	1,472,406	(589)	(3,387)	(4,417)
CW		14310D-AG-2	Carlyle Global Mkt CLO 2013-2 Mezz Secd Def Nt Class C 144A	1	11,828,844	(4,732)	(27,206)	(35,487)
CW		09626U-AN-8	BLUEMOUNTAIN CLO 2013-1 LTD.	1	12,740,000	(5,096)	(29,302)	(38,220)
CW		69688X-AL-5	PALMER SQUARE CLO 2014-1 LTD	1	10,600,000	(4,240)	(24,380)	(31,800)
CW		05363X-AC-1	Avery Point V CLO Ltd Sr Secured Note Class A	1	17,335,098	(6,934)	(39,871)	(52,005)
CW		278287-AA-5	Eaton Vance CDO Ltd Series 2006-8A Class A	1	10,513,984	(4,206)	(24,182)	(31,542)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CW		87159Q-AN-8	Symphony CLO Ltd Series 2014-14A Class C1	1	3,065,691	(1,226)	(7,051)	(9,197)
CW		62953G-AC-5	NZCG Funding 2 Ltd Sr Secured Note Class A-2	1	10,831,442	(4,333)	(24,912)	(32,494)
CW		00191Y-AP-9	ARES XXXIII CLO LTD Mezz Def Nt Cl B-2-R	1	3,050,000	(1,220)	(7,015)	(9,150)
CW		50184K-AW-8	LCM XIII LTD PARTNERSHIP SECD DEF NT CL C-R	1	4,486,655	(1,795)	(10,319)	(13,460)
CW		08181L-AA-5	Benefit Str Partners CLO X Ltd Sr Secd Nt Cl A-1	1	5,000,000	(2,000)	(11,500)	(15,000)
CW		43132W-AC-4	Hildene CLO IV Ltd Series 2015-4A Class A2	1	10,000,000	(4,000)	(23,000)	(30,000)
CW		05875F-AC-1	BALLYROCK CLO 2016-1 LTD Sr Secd Note Cl B-1	1	3,900,000	(1,560)	(8,970)	(11,700)
CW		72349B-AE-4	Pinnacle Park CLO Ltd Series 2014-1A Class C	1	7,000,000	(2,800)	(16,100)	(21,000)
CW		09625Y-AD-3	Bluemountain CLO 2012-1 Ltd Sr Secured Note Class B 144A	1	15,446,968	(6,179)	(35,528)	(46,341)
CW		55818V-AC-1	Madison Park Funding Ltd 2014-15A Class A2	1	3,056,180	(1,222)	(7,029)	(9,169)
CW		04014J-AA-2	Ares XXVI CLO Ltd. Series 2013-26A Class A	1	1,899,713	(760)	(4,369)	(5,699)
CW		26249Q-AG-3	Dryden Senior Loan Fund Series 2015-38A Class B	1	9,475,000	(3,790)	(21,793)	(28,425)
CW		39808P-AC-0	Greywolf CLO Ltd Series 2015-1A Class A2	1	8,705,352	(3,482)	(20,022)	(26,116)
CW		26829C-AC-1	ECP CLO 2015-7 Ltd Sr Secd Nt Class A-2 144A	1	8,625,000	(3,450)	(19,838)	(25,875)
CW		00248P-AE-6	A Voce CLO Ltd Series 2014-1A Class B	1	5,845,614	(11,107)	(33,905)	(52,611)
CW		67108F-AG-1	Ozlm Funding Ltd Series 2013-4A Class B	1	4,032,987	(7,663)	(23,391)	(36,297)
CW		223611-A*-5	Cowboys Stadium LP Senior Secured Note	2	39,000,000	(74,100)	(226,200)	(351,000)
CW		15015P-AB-1	Cedar Creek CLO Ltd Series 2013-1A Class B	1	1,539,985	(2,926)	(8,932)	(13,860)
CW		44983W-AD-0	I N G Investment Management Series 2007-5A Class B	1	988,684	(1,878)	(5,734)	(8,898)
CW		55820J-AC-4	Madison Park Funding XXI Ltd Note Class A-2	1	14,300,000	(5,720)	(32,890)	(42,900)
CW		948214-AC-5	Webster Park CLO Ltd. Sr Secd Note Class A-2	1	13,800,009	(5,520)	(31,740)	(41,400)
CW		67104L-AC-1	OHA Loan Funding 2013-2 Ltd Mezz Secd Def Nt Cl C	1	6,759,172	(2,704)	(15,546)	(20,278)
CW		020053-AS-3	ALM VIII Ltd Sr Secd Nt Cl A-1-R	1	4,350,000	(1,740)	(10,005)	(13,050)
CW		38136G-AE-1	Goldentree Loan Opp IV Ltd Sr Secured Nt Class A-2 144A	1	4,086,503	(1,635)	(9,399)	(12,260)
CW		59983H-AB-5	MILL CREEK CLO II LTD Sr Secd Nt Cl B-1	1	8,669,508	(3,468)	(19,940)	(26,009)
CW		BCC0XF-V8-9	St Pauls CLO I B.V. Sr Secd Class A Reg-S	1	19,918,846	(7,968)	(45,813)	(59,757)
CW		67706H-AG-3	OHA Loan Funding 2013-1 Ltd Mezz Secd Def Note Cl C	1	6,396,237	(2,558)	(14,711)	(19,189)
CW		39808F-AC-2	Greywolf CLO III Ltd Sr Secd Nt Cl A-2	1	9,646,178	(3,858)	(22,186)	(28,939)
CW		26244M-AC-6	Dryden 45 Senior Loan Fd Sr Secd Note Cl B	1	4,500,000	(1,800)	(10,350)	(13,500)
CW		09628Q-AC-9	Bluemountain CLO 2016-1 Ltd Sr Secd Nt Class B	1	7,150,000	(2,860)	(16,445)	(21,450)
CW		24823B-AC-4	Denalii Capital CLO X Ltd Sr Secd Note Class A-2L	1	3,700,000	(1,480)	(8,510)	(11,100)
CW		05618P-AJ-6	BABSON CLO LTD 2016-1 Secd Defferable Mezz Term Cl C	1	8,025,000	(3,210)	(18,458)	(24,075)
CW		46616K-AE-4	JFIN CLO 2013 Ltd Sr Secd Defferable Nt Class B	1	9,241,239	(3,696)	(21,255)	(27,724)
CW		03764D-AD-3	Apidos CLO XII Mezz Def Note Class C	1	11,693,037	(4,677)	(26,894)	(35,079)
CW		006897-AE-2	Adirondack Park CLO Ltd. Sr Secd Note Class B	1	10,600,000	(4,240)	(24,380)	(31,800)
CW		50188Q-AE-1	LCM XIX Ltd Partnership Def Mezz Nt Cl C	1	10,000,000	(4,000)	(23,000)	(30,000)
CW		38137Q-AC-2	Goldentree Loan Opp IX Ltd Sr Secd Nt Cl B-1-R	1	10,675,000	(4,270)	(24,553)	(32,025)
CW		15136R-AJ-4	Cent CLO 18 Ltd Def Note Class C-1	1	5,078,043	(2,031)	(11,679)	(15,234)
CW		14308L-AE-3	Carlyle Global Mkt CLO 2014-3 Sr Secd Note Class A-2	1	4,306,109	(1,722)	(9,904)	(12,918)
CW		27830D-AC-4	Eaton Vance CLO 2014-1 Ltd Sr Secd Note Class B	1	17,250,000	(6,900)	(39,675)	(51,750)
CW		74982L-AG-5	Race Point VIII CLO Ltd. Sr Secd Def Nt Cl C	1	3,072,423	(1,229)	(7,067)	(9,217)
CW		39808P-AA-4	Greywolf CLO V Ltd Sr Secd Nt Cl A-1	1	21,750,000	(8,700)	(50,025)	(65,250)
CW		04014J-AA-2	Ares XXVI CLO Ltd. Series 2013-26A Class A	1	28,290,627	(11,316)	(65,068)	(84,872)
CW		36248M-AB-3	GT Loan Financing I Ltd. Sr Secd Note Class B	1	4,802,173	(1,921)	(11,045)	(14,407)
CW		14954W-AC-0	Cavalry CLO III Ltd Sr Secd Note Class B	1	12,577,914	(5,031)	(28,929)	(37,734)
CW		67106J-AG-5	OHA Credit Partners X Ltd Mezz Secd Def Nt Cl C	1	6,225,000	(2,490)	(14,318)	(18,675)
CW		43132R-AA-9	Hildene CLO I Ltd Sr Secd Nt Cl A	1	6,321,565	(2,529)	(14,540)	(18,965)
CW		04941G-AC-2	Atlas Senior Loan Fund III Ltd Sr Secd Note Class B	1	22,400,000	(8,960)	(51,520)	(67,200)
CW		38137D-AC-1	Goldentree Loan Opp VII Ltd Sr Secured Nt Class B-1 144A	1	9,150,000	(3,660)	(21,045)	(27,450)
CW		09625Y-AG-6	Bluemountain CLO 2012-1 Ltd Sr Sec Def Note Class C 144A	1	3,786,816	(1,515)	(8,710)	(11,360)
CW		14310M-AS-6	Carlyle Global Mkt CLO 2014-1 MEZZ SECD DEF NT CL C-R	1	10,000,000	(4,000)	(23,000)	(30,000)
CW		27830B-AQ-7	Eaton Vance CLO 2013-1 Ltd Series 2013-1A Clas A2R	1	12,750,000	(5,100)	(29,325)	(38,250)
CW		131248-AE-6	Callidus Debt Ptrs CLO Fd VI Sr Secd Note Class A-2	1	3,016,307	(1,207)	(6,938)	(9,049)
CW		50183X-AC-5	LCM XI Ltd Partnership Sr Nt Cl A	1	2,946,357	(1,179)	(6,777)	(8,839)
CW		50184V-AG-9	LCM XIV LP Def Mezz Nt Cl C	1	7,872,388	(3,149)	(18,106)	(23,617)
CW		55818P-AC-4	Madison Park Funding XII Ltd Note Class B-1	1	17,100,000	(6,840)	(39,330)	(51,300)
CW		50188G-AE-3	LCM XVIII Ltd Partnership Sr Nt Class B-1 144A	1	12,500,000	(5,000)	(28,750)	(37,500)
CW		67104L-AB-3	OHA Loan Funding 2013-2 Ltd Sr Secd Nt Cl B	1	3,137,847	(1,255)	(7,217)	(9,414)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	Basic Contribution	Reserve Objective	Maximum Reserve
CW		26244Y-AC-0	Dryden 42 Sr Ln Fd Sr Secd Note Class B	1	13,000,000	(5,200)	(29,900)	(39,000)
CW		27829K-AE-7	Eaton Vance CDO X PLC 2nd Priority Sr Secd Nt Cl B2	1	20,719,259	(8,288)	(47,654)	(62,158)
CW		50184V-AC-8	LCM XIV LP Series 14A Class A	1	3,123,861	(1,250)	(7,185)	(9,372)
CW		860444-AC-2	Stewart Park CLO Ltd Sr Secured Note Class B 144A	1	8,610,000	(3,444)	(19,803)	(25,830)
CW		26829C-AJ-6	ECP CLO 2015-7 Ltd Sr Secd Deferrable Nt Cl B-1	1	8,626,012	(3,450)	(19,840)	(25,878)
CW		568416-BB-6	MARINE PARK CLO LTD Sr Secd Note Class A-2-R 144A	1	7,500,000	(3,000)	(17,250)	(22,500)
CW		50188Q-AC-5	LCM XIX Ltd Partnership Sr Note Class B	1	7,000,000	(2,800)	(16,100)	(21,000)
CW		89473L-AB-0	Treman Park CLO Ltd Sr Secd Nt Class B-1 144A	1	4,825,000	(1,930)	(11,098)	(14,475)
CW		67110H-AA-6	OZLM XIV LTD Sr Secd Note Class A-1A	1	28,642,940	(11,457)	(65,879)	(85,929)
CW		54303P-AB-1	Longfellow Place CLO Ltd Sr Secd Nt Cl B	1	16,962,313	(6,785)	(39,013)	(50,887)
CW		50189C-AE-1	LCM XXI LP Sr Note Cl B-1	1	13,000,000	(5,200)	(29,900)	(39,000)
CW		04941G-AA-6	Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	38,028,765	(15,212)	(87,466)	(114,086)
CW		14310G-AA-8	Carlyle Global Mkt CLO 2013-3 Sr Secd Note Class A-1 144A	1	25,286,659	(10,115)	(58,159)	(75,860)
CW		54303P-AA-3	Longfellow Place CLO Ltd Sr Secd Nt Cl A	1	55,800,000	(22,320)	(128,340)	(167,400)
CW		54303P-AA-3	Longfellow Place CLO Ltd Sr Secd Nt Cl A	1	55,800,000	(22,320)	(128,340)	(167,400)
CN		Q3915F-AB-2	Fletcher Building Intl LP Gtd Senior Note Series B	2	23,500,000			
CW		872455-AA-8	TICP CLO I Ltd Sr Secd Nt Class A-1	1	112,158,361	(44,863)	(257,964)	(336,475)
CW		854432-AA-9	Staniford Street CLO Ltd Sr Secd Nt Class A	1	102,219,962	(40,888)	(235,106)	(306,660)
CW		40537X-AE-5	Halcyon Ln Advisors Fdg 2013-1 Sr Secd Def Nt Cl B	1	5,177,125	(2,071)	(11,907)	(15,531)
CW		09627L-AA-5	Bluemountain CLO 2014-1 Ltd Sr Secured Note Class A 144A	1	164,835,009	(65,934)	(379,121)	(494,505)
CW		43132R-AA-9	Hildene CLO I Ltd Sr Secd Nt Cl A	1	85,443,086	(34,177)	(196,519)	(256,329)
CW		49638W-AD-8	Kingsland VI Ltd Sr Secd Nt Cl B	1	40,878,516	(16,351)	(94,021)	(122,636)
CW		26249E-AC-9	Dryden 31 Senior Loan Fund Sr Secd Note Class B	1	13,282,543	(5,313)	(30,550)	(39,848)
CW		05363U-AC-7	Avery Point IV CLO Ltd Sr Secd Nt Cl A	1	156,000,000	(62,400)	(358,800)	(468,000)
CW		03765D-AE-0	Apidos CLO XVIII Mezz Def Note Class B	1	8,797,468	(3,519)	(20,234)	(26,392)
CW		00164B-AS-6	ALM VII R 2 Ltd Series 2013-7R2A Class A2R	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		09627V-AS-4	Bluemountain CLO 2014-4 Ltd Sr Secd Nt Cl B-1 R	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		38137F-AE-2	Goldentree Ln Opp XI Ltd Sr Secd Nt Cl B-R	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		67091H-AK-7	OHA Loan Fdg 2012-1 Ltd Sr Secd Nt Cl B-1R	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		09628W-AC-6	Bluemountain CLO 2016-2 Ltd Sr Secd Nt Cl A-2	1	14,600,000	(5,840)	(33,580)	(43,800)
CW		92915P-AB-1	Voya CLO 2014-1 Ltd Note Cl A-2A-R	1	13,900,000	(5,560)	(31,970)	(41,700)
CW		09626R-AQ-8	Bluemountain CLO 2012-2 Ltd Sr Secd Nt Cl B-R	1	13,850,000	(5,540)	(31,855)	(41,550)
CW		11014P-AB-1	Bristol Park CLO Ltd Sr Secd Nt Cl B	1	13,850,000	(5,540)	(31,855)	(41,550)
CW		88433A-AC-3	THL CR WIND RIV 2016-1 CLO LTD SR SECN NT CL B	1	12,625,000	(5,050)	(29,038)	(37,875)
CW		056828-AC-0	Bain Capital Credit CLO 2016-2 Sr Secd Nt Cl B	1	12,150,000	(4,860)	(27,945)	(36,450)
CW		04941M-AF-2	Atlas Sr Loan Fund V Ltd Sr Secd Nt Cl B-R	1	11,175,000	(4,470)	(25,703)	(33,525)
CW		49638W-AB-2	Kingsland VI Ltd Sr Secd Nt Cl A-1	1	142,938,093	(57,175)	(328,758)	(428,814)
CW		639107-AE-1	Nautique Funding Ltd Sr Note Class A-3	1	1,041,475	(417)	(2,395)	(3,124)
CW		82835A-AE-6	Silverado CLO 2006-II Ltd Sr Secd Nt Class A-1-J	1	4,041,822	(1,617)	(9,296)	(12,125)
CW		05617W-AA-1	Babson CLO Ltd 2013-I Series 13-1A Class A	1	11,188,517	(4,475)	(25,734)	(33,566)
CW		49638Y-AA-0	Kingsland VII Ltd Sr Secd Nt Cl A	1	145,668,705	(58,267)	(335,038)	(437,006)
CW		79410U-AC-5	Salem Fields CLO Ltd Sr Secd Nt Cl A-2	1	9,150,000	(3,660)	(21,045)	(27,450)
CW		36248M-AA-5	GT Loan Financing I Ltd. Sr Secd Note Class A	1	40,848,892	(16,340)	(93,952)	(122,547)
CW		46617N-AA-5	JFIN CLO 2014-II Ltd Sr Secured Note Class A-1 144A	1	77,000,000	(30,800)	(177,100)	(231,000)
CW		50184V-AC-8	LCM XIV LP Series 14A Class A	1	32,601,510	(13,041)	(74,983)	(97,805)
CW		87159F-AB-8	Symphony CLO XII LTD Sr Note Class B-1	1	1,767,148	(707)	(4,064)	(5,301)
CW		126612-AA-8	CVP Cascade CLO-1 Ltd Note Class A-1	1	122,861,910	(49,145)	(282,582)	(368,586)
CW		38137L-AA-7	Goldentree Loan Opp VIII Ltd Sr Secd Nt Class A	1	32,826,778	(13,131)	(75,502)	(98,480)
CW		48274L-AA-9	KVK CLO 2014-1 LTD Sr Secd Nt Cl A-1	1	112,514,158	(45,006)	(258,783)	(337,542)
CW		48274L-AC-5	KVK CLO 2014-1 LTD Sr Secd Nt Cl B	1	33,845,839	(13,538)	(77,845)	(101,538)
CW		67108L-AA-1	Ozlm VI Ltd Sr Secd Nt Cl A-1	1	94,893,357	(37,957)	(218,255)	(284,680)
CW		48274H-AA-8	KVK CLO 2013-2 Ltd Sr Secd Nt Cl A	1	67,660,035	(27,064)	(155,618)	(202,980)
CW		126611-AA-0	CVP Cascade CLO-2 Ltd Note Class A-1	1	132,217,233	(52,887)	(304,100)	(396,652)
CW		126611-AA-0	CVP Cascade CLO-2 Ltd Note Class A-1	1	24,409,335	(9,764)	(56,141)	(73,228)
CW		17178N-AC-3	CIFC Fdg 2007-III Ltd Sr Secd Note Class A-1-J	1	15,981,664	(6,393)	(36,758)	(47,945)
CW		87159F-AA-0	Symphony CLO XII LTD Sr Note Cl A	1	39,309,029	(15,724)	(90,411)	(117,927)
CW		14954W-AA-4	Cavalry CLO III Ltd Sr Secd Note Class A	1	25,474,913	(10,190)	(58,592)	(76,425)
CW		26249B-AA-9	Dryden 30 Senior Loan Fund Sr Secd Note Class A	1	7,769,346	(3,108)	(17,869)	(23,308)

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ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CW		67102Q-AP-3	OHA CR PARTNERS VII LTD SECD MEZZ NT CL C-R	1	2,977,481	(1,191)	(6,848)	(8,932)
CW		87231L-AC-5	TCI-CENT CLO 2016-1 LTD. SR SECD NT CL A-2	1	6,540,000	(2,616)	(15,042)	(19,620)
CW		88433B-AC-1	THL Cr Wind River 2016-2 CLO Series 16-2A Class B	1	5,750,000	(2,300)	(13,225)	(17,250)
CW		87247C-AA-1	TICP CLO II Ltd Sr Secured Note Class A-1A	1	39,121,426	(15,649)	(89,979)	(117,364)
CW		67590B-AA-8	Octagon Inv Partners XVI Ltd Series 2013-1A Class A	1	9,046,154	(3,618)	(20,806)	(27,138)
CW		05363U-AE-3	Avery Point IV CLO Ltd Sr Secd Nt Cl B-1	1	24,999,382	(10,000)	(57,499)	(74,998)
CW		09627L-AC-1	Bluemountain CLO 2014-1 Ltd Sr Secured Note Class B-1 144A	1	25,594,495	(10,238)	(58,867)	(76,783)
CW		55818K-AG-6	Madison Park Funding XI Ltd. Note Class B-1	1	10,333,431	(4,133)	(23,767)	(31,000)
CW		03765L-AG-7	Apidos CLO XX Mezzanine Deferrable Note Cl C	1	4,461,643	(1,785)	(10,262)	(13,385)
CW		05617L-AD-9	Babson CLO Ltd 2012-1 Sr Secd Def Note Class C	1	4,360,613	(1,744)	(10,029)	(13,082)
CW		75887N-AC-3	REGATTA VI FUNDING LTD. Sr Secd Nt Class A	1	8,251,709	(3,301)	(18,979)	(24,755)
CW		48274H-AA-8	KVK CLO 2013-2 Ltd Sr Secd Nt Cl A	1	3,070,803	(1,228)	(7,063)	(9,212)
CW		87244D-AC-8	THL Cr Wind River 2013-CLO Ltd Sr Secd Nt Class A-2	1	1,549,864	(620)	(3,565)	(4,650)
CW		82842B-AA-0	Silvermore CLO Ltd Sr Secd Nt Class A-1	1	25,028,136	(10,011)	(57,565)	(75,084)
CW		03764D-AB-7	Apidos CLO XII Sr Secd Note Class B-1	1	24,711,573	(9,885)	(56,837)	(74,135)
CW		49638W-AE-6	Kingsland VI Ltd Secd Def Mezz Nt Cl C	1	22,749,581	(9,100)	(52,324)	(68,249)
CW		67104L-AB-3	OHA Loan Funding 2013-2 Ltd Sr Secd Nt Cl B	1	20,724,684	(8,290)	(47,667)	(62,174)
CW		09627R-AA-2	Bluemountain CLO 2014-3 Ltd Sr Secured Note Class A-1 144A	1	23,631,384	(9,453)	(54,352)	(70,894)
CW		05363U-AJ-2	Avery Point IV CLO Ltd Sr Secd Def Nt Cl C	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		67590R-AC-9	Octagon Loan Funding Ltd Sr Secd Note Cl A-1	1	23,709,274	(9,484)	(54,531)	(71,128)
CW		38137D-AA-5	Goldentree Loan Opp VII Ltd Series 2013-7A Class A	1	23,544,310	(9,418)	(54,152)	(70,633)
CW		67108F-AA-4	Ozlm Funding IV Ltd Series 2013-4A Class A1	1	22,899,757	(9,160)	(52,669)	(68,699)
CW		053635-AC-2	Avery Point II CLO Ltd Sr Secd Nt Cl B-1	1	22,400,000	(8,960)	(51,520)	(67,200)
CW		76761R-AE-9	Riserva CLO Ltd DEF MEZZ SECD CL C	1	4,250,000	(1,700)	(9,775)	(12,750)
CW		87231L-AA-9	TCI-CENT CLO 2016-1 LTD. SR SECD NT CL A-1	1	8,500,000	(3,400)	(19,550)	(25,500)
CW		43132R-AC-5	Hildene CLO I Ltd Sr Secd Nt Cl B-1	1	20,409,141	(8,164)	(46,941)	(61,227)
CW		72349B-AC-8	Pinnacle Park CLO Ltd Sr Secd Nt Class B	1	22,000,000	(8,800)	(50,600)	(66,000)
CW		87155F-AL-0	Symphony CLO II Ltd Sr Ntoe Class A-3	1	12,909,595	(5,164)	(29,692)	(38,729)
CW		67092R-AA-6	OCF CLO 2016-12 Ltd Series 16-12A Class A1	1	10,559,444	(4,224)	(24,287)	(31,678)
CW		46617Y-AB-9	JFIN CLO 2015 LTD Sr Secd Nt Cl B-1	1	9,569,057	(3,828)	(22,009)	(28,707)
CW		872455-AE-0	TICP CLO I Ltd Sr Secd Nt Class A-2B	1	20,170,913	(8,068)	(46,393)	(60,513)
CW		50183U-AH-0	LCM X LP Note Class B-R	1	13,000,000	(5,200)	(29,900)	(39,000)
CW		38137L-AJ-8	Goldentree Loan Opp VIII Ltd Sr Secured Nt Class B-1 144A	1	19,570,884	(7,828)	(45,013)	(58,713)
CW		67108L-AC-7	Ozlm VI Ltd Sr Secd Note Cl A-2A	1	19,578,906	(7,832)	(45,031)	(58,737)
CW		74982N-AB-2	Race Point V CLO Ltd Sr Secd Nt Cl B-R	1	18,900,000	(7,560)	(43,470)	(56,700)
CW		05363X-AE-7	Avery Point V CLO Ltd Sr Secd Nt Cl B	1	18,650,000	(7,460)	(42,895)	(55,950)
CW		03765D-AC-4	Apidos CLO XVIII Sr Secd Note Class A-2A	1	19,129,042	(7,652)	(43,997)	(57,387)
CW		06759Y-AA-3	Barings CLO Ltd 2016-III Sr Secd Nt Cl A-1	1	14,100,000	(5,640)	(32,430)	(42,300)
CW		67106J-AE-0	OHA Credit Partners X Ltd Sr Secd Nt Cl B	1	18,500,000	(7,400)	(42,550)	(55,500)
CW		49638Y-AC-6	Kingsland VII Ltd Sr Secd Nt Cl B	1	18,889,139	(7,556)	(43,445)	(56,667)
CW		04015B-AC-4	Ares XXXI CLO Ltd Sr Note Class A-2	1	18,679,977	(7,472)	(42,964)	(56,040)
CW		09626Q-AC-1	Bluemountain CLO 2014-2 Ltd Sr Secured Note Class B-1 144A	1	18,640,487	(7,456)	(42,873)	(55,921)
CW		14954T-AC-7	Cavalry CLO II Ltd Note Class B-1	1	16,858,098	(6,743)	(38,774)	(50,574)
CW		48274L-AA-9	KVK CLO 2014-1 LTD Sr Secd Nt Cl A-1	1	63,928,499	(25,571)	(147,036)	(191,785)
CW		033286-AC-9	Anchorage Cap CLO 5 Ltd Sr Secd Note Class A	1	12,221,015	(4,888)	(28,108)	(36,663)
CW		949496-AC-7	WELLFLEET CLO 2015-1 LTD Sr Secd Nt Class A-1	1	60,000,000	(24,000)	(138,000)	(180,000)
CW		55954E-AJ-8	MAGNETITE XVII LTD Def Mezz Nt Cl C	1	4,330,000	(1,732)	(9,959)	(12,990)
CW		48250W-AA-3	KKR CLO 14 Ltd Sr Secd Nt Cl A-1A	1	13,000,000	(5,200)	(29,900)	(39,000)
CW		532621-AC-3	Limerock CLO II Ltd Sr Secd Note Class B-1	1	18,525,048	(7,410)	(42,608)	(55,575)
CW		14310K-AC-5	Carlyle Global Mkt CLO 2013-4 Sr Secd Note Cl A-1 144A	1	18,000,000	(7,200)	(41,400)	(54,000)
CW		03763Y-AQ-9	Apidos CLO XI Note Cl B-R	1	10,850,000	(4,340)	(24,955)	(32,550)
CW		55818R-AJ-5	Madison Park Funding XIV Ltd Mezz Note Class C	1	9,300,000	(3,720)	(21,390)	(27,900)
CW		05617W-AC-7	Babson CLO Ltd 2013-I Sr Secd Note Class B	1	9,372,277	(3,749)	(21,556)	(28,117)
CW		04941G-AE-8	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C	1	9,393,117	(3,757)	(21,604)	(28,179)
CW		00164K-AC-1	ALM XIV Ltd Sr Secd Note Cl A-2	1	4,116,459	(1,647)	(9,468)	(12,349)
CW		50188G-AN-3	LCM XVIII Ltd Partnership Series 18A Class D	3	3,778,376	(1,511)	(8,690)	(11,335)
CW		056162-AG-5	Babson CLO Ltd 2015-I Sr Secd Deferrable Note Cl D-1	2	3,710,982	(1,484)	(8,535)	(11,133)
CW		33883B-AB-4	Flatiron CLO 2013-1 Ltd Sr Secd Note Class A-2	1	15,000,000	(6,000)	(34,500)	(45,000)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CW		05617Y-AC-3	Babson CLO 2013-11A Sr Secd Note Class A-2	1	17,235,085	(6,894)	(39,641)	(51,705)
CW		05618M-AE-4	Babson CLO Ltd 2014-111 Sr Secd Term Note Cl B-1 144A	1	20,848,084	(8,339)	(47,951)	(62,544)
CW		46186G-AG-8	Inwood Park CDO Ltd Series 2006-1A Class B	1	9,866,685	(3,947)	(22,693)	(29,600)
CW		09627R-AE-4	Bluemountain CLO 2014-3 Ltd Sr Sec Def Note Class B 144A	1	9,337,366	(3,735)	(21,476)	(28,012)
CW		67572N-AW-6	Octagon Inv Partners XII Ltd Sr Secd Nt Class B-1-R	1	5,300,000	(2,120)	(12,190)	(15,900)
CW		05618D-AC-8	Babson CLO Ltd 2014-1 Class A-2 144A	1	13,548,358	(5,419)	(31,161)	(40,645)
CW		00248P-AC-0	A Voce CLO Ltd Sr Secd Note Class A-2	1	12,109,225	(4,844)	(27,851)	(36,328)
CW		93677P-AB-7	Wasatch CLO Ltd Note Class A-1B	1	9,260,819	(3,704)	(21,300)	(27,782)
CW		87159Q-AJ-7	Symphony CLO XIV Ltd Sr Note Class B-1	1	11,500,000	(4,600)	(26,450)	(34,500)
CW		55818Y-AG-6	Madison Pk Fdg XVII Ltd Def Note Class C	1	4,010,380	(1,604)	(9,224)	(12,031)
CW		67332H-AD-5	RRPF Engine Leasing Ltd Senior Secured Note Series D	1	60,000,000	(24,000)	(138,000)	(180,000)
CW		629394-AA-5	NTC Capital I Unsecured Bond	2	26,785,682	(10,714)	(61,607)	(80,357)
CW		230000-AB-7	Cullen/Frost Capital Trust II Subordinated Note	2	20,702,458	(8,281)	(47,616)	(62,107)
CW		09627X-AW-1	Bluemountain CLO 2015-1 Ltd SR SEC NT CL A-2-R	1	20,500,000	(8,200)	(47,150)	(61,500)
CW		72349B-AK-0	Pinnacle Park CLO Ltd SR SEC NT CL B-R	1	18,700,000	(7,480)	(43,010)	(56,100)
CW		873549-AC-3	TACONIC PK CLO LTD SR SEC NT CL A-2	1	16,100,000	(6,440)	(37,030)	(48,300)
CW		09627L-AJ-6	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class D	2	1,842,277	(737)	(4,237)	(5,527)
CW		09627V-AG-0	Bluemountain CLO 2014-4 Ltd Sr Secd Deferrable Nt Class D	2	4,501,297	(1,801)	(10,353)	(13,504)
CW		05617Y-AG-4	Babson CLO 2013-11A Sr Secd Def Note Class C	1	3,155,926	(1,262)	(7,259)	(9,468)
CW		09625J-AF-1	Bluemountain CLO 2013-3 Ltd Sr Secd Deferrable Nt Class D	2	6,747,786	(2,699)	(15,520)	(20,243)
CW		86482B-AC-5	Sugar Creek CLO Ltd Sr Secd Note Class B	1	13,399,981	(5,360)	(30,820)	(40,200)
CW		12627U-AB-7	COA Summit CLO Ltd Sr Secd Note Class A-2	1	13,287,754	(5,315)	(30,562)	(39,863)
CW		69688X-AC-5	Palmer Square CLO 2014-1 Ltd Sr Secd Note Class A-2	1	12,986,902	(5,195)	(29,870)	(38,961)
CW		26251B-AC-0	Dryden XXVIII Senior Loan Fund Sr Secd Note Class A-2L	1	12,500,000	(5,000)	(28,750)	(37,500)
CW		817176-AE-0	Seneca Park CLO Ltd Secd Def Nt Class C	1	4,560,463	(1,824)	(10,489)	(13,681)
CW		291086-AB-2	Emerson Place CLO LTD Sr Note Class B	1	13,303,915	(5,322)	(30,599)	(39,912)
CW		14309Q-AU-5	Carlyle Global Mkt CLO 2012-2 Sr Secd Note Class B-1-R 144A	1	12,125,000	(4,850)	(27,888)	(36,375)
CW		40436Q-AC-6	HPS Loan Mgmt 9-2016 Ltd Sr Secd Note Class A-2	1	12,100,000	(4,840)	(27,830)	(36,300)
CW		673898-AC-6	Oaktree CLO 2014-2 Ltd Sr Secd Note Class A-2A	1	6,544,800	(2,618)	(15,053)	(19,634)
CW		46616A-AE-6	JFIN CLO 2012 Ltd Note Class B 144A	1	6,869,637	(2,748)	(15,800)	(20,609)
CW		38136G-AD-3	Goldentree Loan Opp IV Ltd Sr Secured Nt Class A-1B-J	1	6,060,967	(2,424)	(13,940)	(18,183)
CW		806713-AD-5	Schiller Park CLO LTD Note Class B	1	3,494,174	(1,398)	(8,037)	(10,483)
CW		43132W-AE-0	Hildene CLO IV Ltd Def Mezz Nt Cl B	1	5,948,585	(2,379)	(13,682)	(17,846)
CW		46617Y-AB-9	JFIN CLO 2015 LTD Sr Secd Nt Cl B-1	1	2,974,292	(1,190)	(6,841)	(8,923)
CW		09627D-AC-9	Bluemountain CLO 2013-4 Ltd Sr Secured Note Class B-1 144A	1	14,122,029	(5,649)	(32,481)	(42,366)
CW		55818R-AG-1	Madison Park Funding XIV Ltd Sr Note Class B	1	14,156,952	(5,663)	(32,561)	(42,471)
CW		14955A-AC-7	CAVALRY CLO IV LTD Sr Secd Note Class B-1	1	14,158,335	(5,663)	(32,564)	(42,475)
CW		92558A-AA-8	VIBRANT CLO V LTD SR SEC NT CL A	1	4,300,000	(1,720)	(9,890)	(12,900)
CW		38136B-AJ-1	Goldentree Loan Opp III Ltd Series 2007-3A Class A2	1	13,830,234	(5,532)	(31,810)	(41,491)
CW		88390A-AF-7	THL Cr Wind River 2014-2 CLO Sr Secd Nt Class B-1	1	13,851,076	(5,540)	(31,857)	(41,553)
CW		03764Q-AC-6	Apidos CLO XV Sr Secd Note Class A-2A	1	13,600,000	(5,440)	(31,280)	(40,800)
CW		00191L-AC-6	Ares XXVIII CLO Ltd Class B-1 Sr Floating Rate Nt	1	13,114,739	(5,246)	(30,164)	(39,344)
CW		64129X-AG-4	Neuberger Berman CLO XVI Ltd Sr Secured Note Class B-1	1	13,622,220	(5,449)	(31,331)	(40,867)
CW		05873L-AC-0	Ballyrock CLO 2014-1 Ltd Sr Secd Note Class A-2	1	10,794,947	(4,318)	(24,828)	(32,385)
CW		67105V-AE-4	OHA Credit Partners IX Ltd Sr Secd Note Class B-1 144A	1	12,996,773	(5,199)	(29,893)	(38,990)
CW		50184V-AE-4	LCM XIV LP Sr Note Class B	1	14,880,471	(5,952)	(34,225)	(44,641)
CW		33883B-AB-4	Flatiron CLO 2013-1 Ltd Sr Secd Note Class A-2	1	13,000,000	(5,200)	(29,900)	(39,000)
CW		09073V-AC-8	Birchwood Park CLO Ltd Sr Secd Note Class B-1	1	14,550,000	(5,820)	(33,465)	(43,650)
CW		398080-AC-5	GREYWOLF CLO IV Ltd Sr Secured Note Class A-2 144A	1	13,505,681	(5,402)	(31,063)	(40,517)
CW		04941R-AC-8	Atlas Sr Loan Fund VI Ltd Sr Secd Note Class B	1	14,261,071	(5,704)	(32,800)	(42,783)
CW		09627R-AC-8	Bluemountain CLO 2014-3 Ltd Sr Secured Note Class A-2 144A	1	14,253,207	(5,701)	(32,782)	(42,760)
CW		398080-AE-1	GREYWOLF CLO IV Ltd Sr Secd Deferrable Nt Class B	1	7,323,346	(2,929)	(16,844)	(21,970)
CW		04941G-AA-6	Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	5,529,182	(2,212)	(12,717)	(16,588)
CW		08180R-AC-9	Benefit St Ptrs CLO VII Ltd Sr Secd Note Class A-2	1	14,992,920	(5,997)	(34,484)	(44,979)
CW		36319G-AA-2	GALAXY XVIII CLO LTD SR NT CL A	1	12,771,290	(5,109)	(29,374)	(38,314)
CW		74982D-AQ-1	Race Point VI CLO Ltd Sr Secd Note Class B-R	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		00900A-AB-4	Aimco CLO Ser 2014-A Sr Secd Note Class B-1	1	15,536,830	(6,215)	(35,735)	(46,610)
CW		854432-AB-7	Stanford Street CLO Ltd Sr Secd Note Class B	1	15,289,435	(6,116)	(35,166)	(45,868)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CW		50183X-AE-1	LCM XI Ltd Partnership Sr Note Class B	1	15,184,826	(6,074)	(34,925)	(45,554)
CW		92912V-AC-9	Voya CLO 2014-2 Ltd Note Class A-2	1	14,882,320	(5,953)	(34,229)	(44,647)
CW		67104C-AB-3	OHA Credit Ptrs VIII Ltd Sr Secd Nt Cl B	1	14,880,327	(5,952)	(34,225)	(44,641)
CW		14312L-AC-1	Carlyle Global Mkt CLO 2016-2 Sr Secd Note Class A-2A	1	12,070,000	(4,828)	(27,761)	(36,210)
CW		862015-AC-8	Stoney Lane Funding I Ltd Sr Secd Note Class A-2	1	3,000,588	(1,200)	(6,901)	(9,002)
CW		74983D-AC-1	RACE POINT X CLO LTD Sr Secd Nt Cl B-1	1	8,060,000	(3,224)	(18,538)	(24,180)
CW		40538C-AG-5	Halcyon Ln Advisors Fdg 2014-1 Sr Secd Nt Cl B-1	1	18,416,086	(7,366)	(42,357)	(55,248)
CW		05874P-AC-0	Ballyrock CLO 2013-1 Ltd Sr Secd Note Class B	1	16,600,000	(6,640)	(38,180)	(49,800)
CW		04014W-AC-9	Ares XXIX CLO Ltd Sr Note Class A-2	1	16,891,207	(6,756)	(38,850)	(50,674)
CW		46617E-AC-1	JFIN CLO 2014 Ltd Sr Secured Note Class B-1	1	30,292,624	(12,117)	(69,673)	(90,878)
CW		87247C-AC-7	TICP CLO II Ltd Sr Secured Note Class A-2A	1	15,231,771	(6,093)	(35,033)	(45,695)
CW		87159F-AB-8	Symphony CLO XII LTD Sr Note Class B-1	1	13,392,605	(5,357)	(30,803)	(40,178)
CW		87154E-AC-4	Symphony CLO XV Ltd SR NT CL B-1 144A	1	11,792,941	(4,717)	(27,124)	(35,379)
CW		26250C-AU-9	Dryden XXIII Senior Loan Fund Sr Secd Note Class A-2-R	1	13,975,000	(5,590)	(32,143)	(41,925)
CW		87154E-AB-6	Symphony CLO XV Ltd SR NT CL A 144A	1	25,251,655	(10,101)	(58,079)	(75,755)
CW		532621-AA-7	Limerock CLO II Ltd Sr Secd Note Cl A	1	23,244,912	(9,298)	(53,463)	(69,735)
CW		40538C-AC-4	Halcyon Ln Advisors Fdg 2014-1 Sr Secd Nt Cl A-1	1	21,742,980	(8,697)	(50,009)	(65,229)
CW		053633-AB-9	Avery Point III CLO Ltd Sr Secd Nt Cl A	1	25,220,537	(10,088)	(58,007)	(75,662)
CW		38137M-AC-1	Goldentree Loan Opp XII Ltd Sr Secd Note Class A-2	1	15,137,556	(6,055)	(34,816)	(45,413)
CW		828428-AC-6	Silvermore CLO Ltd Sr Secd Nt Class A-2	1	4,504,642	(1,802)	(10,361)	(13,514)
CW		15135D-AJ-6	Cent CDO 14 Ltd Sr Term Note Class A-2A	1	6,868,388	(2,747)	(15,797)	(20,605)
CW		46619T-AA-0	JFIN CLO 2016 LTD Sr Secd Nt Cl A-1	1	15,000,000	(6,000)	(34,500)	(45,000)
CW		14311D-AJ-5	Carlyle Global Mkt CLO 2015-1 Mezz Secd Def Note Cl D	2	3,664,227	(1,466)	(8,428)	(10,993)
CW		43132V-AA-0	Hildene CLO III Ltd Sr Secd Nt Cl A	1	37,281,410	(14,913)	(85,747)	(111,844)
CW		03329K-AA-1	ANCHORAGE CAPITAL CLO 8 LTD Sr Secd Note Cl A1	1	16,575,725	(6,630)	(38,124)	(49,727)
CW		282523-AB-5	GUGGENHEIM 1828 CLO LLC SR SECN NT CL A-1-S	1	16,040,000	(6,416)	(36,892)	(48,120)
CW		50181G-AC-4	LCM XVI LP Sr Note Cl A	1	22,320,196	(8,928)	(51,336)	(66,961)
CW		50184N-AD-4	LCM XV LP Sr Secd Nt Class C	1	9,456,971	(3,783)	(21,751)	(28,371)
CW		26249B-AE-1	Dryden 30 Senior Loan Fund Mezz Secd Def Nt Class C	1	4,774,851	(1,910)	(10,982)	(14,325)
CW		398079-AE-3	Greywolf CLO II Ltd. Sr Secd Def Nt Cl B	1	4,804,616	(1,922)	(11,051)	(14,414)
CW		14310V-AE-7	Carlyle Global Mkt CLO 2014-2 Mezzanine Secd Deferrable Cl C	1	4,546,758	(1,819)	(10,458)	(13,640)
CW		363206-AA-1	Gale Force 3 CLO Ltd 1st Priority Sr Sec Class A-1	1	861,708	(345)	(1,982)	(2,585)
CW		92914R-AG-7	Voya CLO 2014-4 Ltd Deferrable Note Class C 144A	2	4,540,470	(1,816)	(10,443)	(13,621)
CW		949496-AC-7	WELLFLEET CLO 2015-1 LTD Sr Secd Nt Class A-1	1	5,000,000	(2,000)	(11,500)	(15,000)
CW		41165G-AA-7	Harbourview CLO VIII Ltd Sr Secd Nt Cl A-1	1	65,000,000	(26,000)	(149,500)	(195,000)
CW		09627L-AG-2	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class C	1	4,579,361	(1,832)	(10,533)	(13,738)
CW		92914R-AA-0	Voya CLO 2014-4 Ltd Note Class A-1 144A	1	22,629,052	(9,052)	(52,047)	(67,887)
CW		67706T-AA-0	OHA Loan Funding 2014-1 LLC Sr Secd Nt Cl A-1	1	22,152,518	(8,861)	(50,951)	(66,458)
CW		92912V-AC-9	Voya CLO 2014-2 Ltd Note Class A-2	1	23,260,320	(9,304)	(53,499)	(69,781)
CW		979JXH-11-5	AUTOSTRADA WIELKOPOLSKA SA	3	16,868,336	(32,050)	(97,836)	(151,815)
CW		U8270Y-ZZ-4	SILVER STATE SOLAR SOUTH	2	34,653,108	(65,841)	(200,988)	(311,878)
CW		49636R-AL-3	Kingsland V Ltd Sr Secd Nt Cl A-2B	1	11,295,561	(21,462)	(65,514)	(101,660)
CW		26249B-AC-5	Dryden 30 Senior Loan Fund Sr Secd Note Class B	1	11,536,556	(21,919)	(66,912)	(103,829)
CW		05874P-AE-6	Ballyrock CLO 2013-1 Ltd Sr Secd Def Note Class C	1	11,505,757	(21,861)	(66,733)	(103,552)
CW		92912V-AG-0	Voya CLO 2014-2 Ltd Def Note Class B	1	9,616,781	(18,272)	(55,777)	(86,551)
CW		67590B-AC-4	Octagon Inv Partners XVI Ltd Sr Secd Nt Class B1	1	10,950,000	(20,805)	(63,510)	(98,550)
CW		05617L-AB-3	Babson CLO Ltd 2012-1 Sr Secd Note Class A-2	1	11,131,445	(21,150)	(64,562)	(100,183)
CW		46617N-AC-1	JFIN CLO 2014-II Ltd Sr Secured Note Class A-2 144A	1	11,273,386	(21,419)	(65,386)	(101,460)
CW		46616A-AJ-5	JFIN CLO 2012 Ltd Note Class A2B 144A	1	10,946,248	(20,798)	(63,488)	(98,516)
CW		50181G-AE-0	LCM XVI LP Sr Note Cl B	1	10,784,930	(20,491)	(62,553)	(97,064)
CW		27830D-AE-0	Eaton Vance CLO 2014-1 Ltd Sr Secd Def Note Cl C	1	6,063,139	(11,520)	(35,166)	(54,568)
CW		14310G-AG-5	Carlyle Global Mkt CLO 2013-3 Sr Secd Def Note Class B 144A	1	7,462,777	(14,179)	(43,284)	(67,165)
CW		67572N-BA-3	Octagon Inv Partners XII Ltd Secd Def Note Cl C-R	1	3,850,000	(7,315)	(22,330)	(34,650)
CW		46186G-AJ-2	Inwood Park CDO Ltd Def Note Class C	1	3,711,835	(7,052)	(21,529)	(33,407)
CW		001626-AC-4	ALM XIX Ltd SR SECN NT CL A-2	1	8,100,000	(15,390)	(46,980)	(72,900)
CW		05617W-AE-3	Babson CLO Ltd 2013-I Sr Secd Note Class C	1	9,000,000	(3,600)	(20,700)	(27,000)
CW		46617E-AE-7	JFIN CLO 2014 Ltd Mezz Secd Deferrable Nt Cl C	1	7,209,486	(2,884)	(16,582)	(21,628)
CW		33882W-AE-3	Flatiron CLO 2011-1 Ltd. Def Mezz Class C-1	1	7,055,272	(2,822)	(16,227)	(21,166)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	Basic Contribution	Reserve Objective	Maximum Reserve
CW		14310D-AE-7	Carlyle Global Mkt CLO 2013-2 Sr Secd Note Class B 144A	1	7,000,000	(2,800)	(16,100)	(21,000)
CW		26249E-AG-0	Dryden 31 Senior Loan Fund Mezz Secd Def Note Class D	2	2,625,360	(1,050)	(6,038)	(7,876)
CW		15132V-AG-5	Cent CDO 15 Ltd Def Note Class C	2	2,500,000	(1,000)	(5,750)	(7,500)
CW		46615P-AG-9	JFIN CLO 2007 Ltd Deferrable Mezz Note Class D	1	1,917,106	(767)	(4,409)	(5,751)
CW		15135A-AD-5	Cent CDO 12 Ltd Def Mezz Note Class D	1	1,785,531	(714)	(4,107)	(5,357)
CW		92557W-AE-3	VIBRANT CLO IV LTD SR SECNT CL B	1	6,256,532	(2,503)	(14,390)	(18,770)
CW		74983D-AA-5	RACE POINT X CLO LTD Sr Secd Nt Class A	1	41,400,000	(16,560)	(95,220)	(124,200)
CW		94949R-AC-1	Wellfleet CLO 2016-1 Ltd Sr Secd Nt Class A	1	17,645,101	(7,058)	(40,584)	(52,935)
CW		858102-AD-8	STEELE CREEK CLO 2016-1 LTD Sr Secd Note Class A	1	17,359,032	(6,944)	(39,926)	(52,077)
CW		38137L-AA-7	Goldentree Loan Opp VIII Ltd Sr Secd Nt Class A	1	14,903,359	(5,961)	(34,278)	(44,710)
CW		26250J-AC-9	Dryden XXVI Senior Loan Fund Sr Secd Note Class A	1	7,910,087	(3,164)	(18,193)	(23,730)
CW		02014P-AC-8	ALM XVII LTD SR SECNT CL A-2 144A	1	13,750,000	(5,500)	(31,625)	(41,250)
CW		979JXQ-1I-5	CONNECT PLUS M25 LTD	1	42,114,223	(16,846)	(96,863)	(126,343)
CW		U8270Y-ZZ-4	SILVER STATE SOLAR SOUTH	2	33,663,020	(13,465)	(77,425)	(100,989)
CW		15136G-AQ-2	Cent CLO 16 LP Note Class 2-R	1	14,000,000	(5,600)	(32,200)	(42,000)
CW		87247U-AC-7	TICP CLO III Ltd Sr Secured Note Class A 144A	1	35,000,997	(14,000)	(80,502)	(105,003)
CW		67400L-AC-2	Oaktree EIF II Ser A2 Ltd Note Class B	1	19,762,891	(7,905)	(45,455)	(59,289)
CW		50184K-AU-2	LCM XIII LTD PARTNERSHIP SR SECNT CL B-R	1	12,750,000	(5,100)	(29,325)	(38,250)
CW		55818V-AC-1	Madison Park Funding XV Ltd Sr Secd Note Cl A-2	1	11,670,881	(4,668)	(26,843)	(35,013)
CW		04964W-AC-9	Atrium XI Sr Secd Note Class B	1	21,814,015	(8,726)	(50,172)	(65,442)
CW		04964W-AA-3	Atrium XI Sr Secd Note Class A-1	1	20,514,830	(8,206)	(47,184)	(61,544)
CW		88432D-AC-8	THL Credit Wind Riv 2014-3 CLO Sr Secd Nt Cl B	1	12,438,282	(4,975)	(28,608)	(37,315)
CW		05618L-AB-2	Babson CLO Ltd 2014-II Sr Secd Note Class B-1 144A	1	12,587,285	(5,035)	(28,951)	(37,762)
CW		82817R-AB-7	Silver Spring CLO Ltd Sr Secd Note Class B-1	1	12,271,704	(4,909)	(28,225)	(36,815)
CW		87230A-AA-4	TCI-FLATIRON CLO 2016-1 LTD SR SECNT CL A	1	13,007,933	(5,203)	(29,918)	(39,024)
CW		09628B-AA-6	Bluemountain CLO 2015-2 Ltd Sr Secd Note Class A-1	1	8,218,071	(3,287)	(18,902)	(24,654)
CW		57542Z-AO-7	MassMutual Asset Finance LLC Senior Secured Revolver A	1	328,073,426	(131,229)	(754,569)	(984,220)
CW		65531W-AA-8	Nomad CLO Ltd Series 2013-1A Class A1	1	24,476,800	(9,791)	(56,297)	(73,430)
CW		09625J-AA-2	Bluemountain CLO 2013-3 Ltd Sr Secured Note Class A 144A	1	23,639,018	(9,456)	(54,370)	(70,917)
CW		14310U-AA-7	Carlyle Global Mkt CLO 2014-4 Sr Secd Note Class A-1 144A	1	23,225,000	(9,290)	(53,418)	(69,675)
CW		04941G-AA-6	Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	11,008,327	(4,403)	(25,319)	(33,025)
CW		095560-AC-2	Blue Hill CLO Ltd Sr Note Class A	1	17,530,678	(7,012)	(40,321)	(52,592)
CW		38136G-AG-6	Goldentree Loan Opp IV Ltd Sr Secd Deferrable Nt Class C	1	5,151,643	(2,061)	(11,849)	(15,455)
CW		55819T-AG-6	MADISON PARK FUNDING XX LTD Secd Def Nt Cl C-1	1	5,829,010	(2,332)	(13,407)	(17,487)
CW		532621-AA-7	Limerock CLO II Ltd Sr Secd Note Cl A	1	23,108,474	(9,243)	(53,149)	(69,325)
CW		83609J-AA-7	SOUND POINT CLO XI LTD Sr Secd Note Class A	1	22,253,353	(8,901)	(51,183)	(66,760)
CW		08180R-AA-3	Benefit St Ptrs CLO VII Ltd Sr Secd Note Class A-1A	1	21,630,394	(8,652)	(49,750)	(64,891)
CW		55818Y-AC-5	Madison Pk Fdg XVII Ltd Note Class A-2	1	21,645,640	(8,658)	(49,785)	(64,937)
CW		053633-AB-9	Avery Point III CLO Ltd Sr Secd Nt Cl A	1	24,211,716	(9,685)	(55,687)	(72,635)
CW		57542Z-AO-7	MassMutual Asset Finance LLC Senior Secured Revolver A	1	56,000,000	(22,400)	(128,800)	(168,000)
CW		00164M-AC-7	ALM XII Ltd Sr Secd Note Class A-1 144A	1	18,060,699	(7,224)	(41,540)	(54,182)
CW		67105V-AC-8	OHA Credit Partners IX Ltd OAK 2013 - 9A A1	1	28,447,896	(11,379)	(65,430)	(85,344)
CW		55818X-AY-9	Madison Park Funding XVI Ltd SR SECNT CL A-2-R	1	12,740,000	(5,096)	(29,302)	(38,220)
CW		72349B-AL-8	Pinnacle Park CLO Ltd SECNT DEF NT CL C-R	1	6,100,000	(2,440)	(14,030)	(18,300)
CW		93921B-AC-7	Washington Mill CLO Ltd Senior Note Class A-1 144A	1	22,529,163	(9,012)	(51,817)	(67,587)
CW		36319Q-AA-0	Galaxy XIX CLO Ltd Senior Note Class A-1 144A	1	22,348,128	(8,939)	(51,401)	(67,044)
CW		10302V-AC-9	Bowman Park CLO Ltd Sr Secd Note Class B-1	1	5,784,889	(2,314)	(13,305)	(17,355)
CW		33882U-AC-1	Flatiron CLO 2014-1 Ltd Sr Secd Def Nt Cl B	1	5,460,752	(2,184)	(12,560)	(16,382)
CW		82842B-AA-0	Silvermore CLO Ltd Sr Secd Nt Class A-1	1	15,618,867	(6,248)	(35,923)	(46,857)
CW		14311D-AC-0	Carlyle Global Mkt CLO 2015-1 Sr Secd Note Class A	1	15,288,860	(6,116)	(35,164)	(45,867)
CW		55818P-AE-0	Madison Park Funding XII Ltd Def Ntoe Class C	1	12,506,779	(5,003)	(28,766)	(37,520)
CW		00163K-AS-7	ALM VII R LTD Sr Secd Note Cl A-2-R	1	4,250,000	(1,700)	(9,775)	(12,750)
CW		00191Y-AM-6	ARES XXXIII CLO LTD SR NT CL A-2-R	1	9,600,000	(3,840)	(22,080)	(28,800)
CW		36319Q-AC-6	Galaxy XIX CLO Ltd Senior Note Class A-2 144A	1	9,850,000	(3,940)	(22,655)	(29,550)
CW		14311D-AE-6	Carlyle Global Mkt CLO 2015-1 Sr Secd Note Class B	1	9,580,000	(3,832)	(22,034)	(28,740)
CW		15135A-AC-7	Cent CDO 12 Ltd Def Mezz Note Class C	1	9,088,858	(3,636)	(20,904)	(27,267)
CW		44983W-AD-0	ING Invt Mgmt CLO V Ltd Def Note Class B	1	7,549,161	(3,020)	(17,363)	(22,647)
CW		09626Q-AE-7	Bluemountain CLO 2014-2 Ltd Sr Sec Def Note Class C 144A	1	9,247,250	(3,699)	(21,269)	(27,742)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	Basic Contribution	Reserve Objective	Maximum Reserve
CW		33882W-AC-7	Flatiron CLO 2011-1 Ltd. Sr Note Class B	1	9,279,557	(3,712)	(21,343)	(27,839)
CW		67104C-AC-1	OHA Credit Ptrs VIII Ltd Mezz Secd Def Nt Cl C	1	9,000,000	(3,600)	(20,700)	(27,000)
CW		55817X-AC-8	Madison Park Funding V Ltd Note Class A-2	1	3,983,953	(1,594)	(9,163)	(11,952)
CW		470328-AK-7	James Campbell Company LLC Senior Note Series 2014-E	2	13,500,000	(5,400)	(31,050)	(40,500)
CW		806713-AE-3	Schiller Park CLO LTD Series 2007-1A Class C	1	6,433,961	(2,574)	(14,798)	(19,302)
CW		55817X-AB-0	Madison Park Funding V Ltd Note Class A-1B	1	6,418,625	(2,567)	(14,763)	(19,256)
CW		053635-AG-3	Avery Point II CLO Ltd Sr Secd Def Nt Cl C	1	9,000,000	(3,600)	(20,700)	(27,000)
CW		14310M-AQ-0	Carlyle Global Mkt CLO 2014-1 SR SEC'D NT CL B-R	1	10,000,000	(4,000)	(23,000)	(30,000)
CW		05363X-AG-2	Avery Point V CLO Ltd Sr Secd Def Nt Cl C	1	9,226,272	(3,691)	(21,220)	(27,679)
CW		50181G-AG-5	LCM XVI LP Sr Nt Cl C Def Mezz	1	8,970,115	(3,588)	(20,631)	(26,910)
CW		67102Q-AK-4	OHA CR PARTNERS VII LTD SR SEC'D NT CL B-1-R	1	12,800,000	(5,120)	(29,440)	(38,400)
CW		00900A-AC-2	Aimco CLO Ser 2014-A Sr Secd Note Class C-1	1	8,608,932	(3,444)	(19,801)	(25,827)
CW		49638W-AB-2	Kingsland VI Ltd Sr Secd Nt Cl A-1	1	21,951,207	(8,780)	(50,488)	(65,854)
CW		24823B-AE-0	Denalil Capital CLO X Ltd Sr Secd Def Note Class A-3L	1	8,511,557	(3,405)	(19,577)	(25,535)
CW		14310V-AJ-6	Carlyle Global Mkt CLO 2014-2 Sr Secd Note Class B-2 144A	1	24,471,245	(9,788)	(56,284)	(73,414)
CW		43164Q-AB-0	Hillmark Funding Ltd Sr Secd Nt Cl A-2	1	7,887,570	(3,155)	(18,141)	(23,663)
CW		09626Y-AE-0	Bluemountain CLO 2013-2 Ltd Sr Sec Def Note Class C 144A	1	8,422,185	(3,369)	(19,371)	(25,267)
CW		15015P-AB-1	Cedar Creek CLO Ltd Sr Secd Note Class B	1	1,796,649	(719)	(4,132)	(5,390)
CW		09627X-AG-6	Bluemountain CLO 2015-1 Ltd Sr Secd Deferrable Nt Class C	2	1,670,087	(668)	(3,841)	(5,010)
CW		14954W-AA-4	Cavalry CLO III Ltd Sr Secd Note Class A	1	2,037,993	(815)	(4,687)	(6,114)
CW		55951P-AR-8	Magnetite VII Ltd Sr Secd Nt Cl A-2-R	1	6,850,000	(2,740)	(15,755)	(20,550)
CW		67108F-AC-0	Ozlm Funding IV Ltd Sr Secd Nt Cl A-2	1	8,385,435	(3,354)	(19,287)	(25,156)
CW		38137L-AE-9	Goldentree Loan Opp VIII Ltd Mezz Deferrable Nt Cl C 144A	1	8,169,566	(3,268)	(18,790)	(24,509)
CW		39808F-AE-8	Greywolf CLO III Ltd Sr Secd Def Nt Cl B	1	8,114,443	(3,246)	(18,663)	(24,343)
CW		05618L-AD-8	Babson CLO Ltd 2014-II Sr Secd Note Class C 144A	1	8,162,199	(3,265)	(18,773)	(24,487)
CW		67590B-AA-8	Octagon Inv Partners XVI Ltd Series 2013-1A Class A	1	26,279,331	(10,512)	(60,442)	(78,838)
CW		15136R-AE-5	Cent CLO 18 Ltd Note Class B-1	1	7,850,000	(3,140)	(18,055)	(23,550)
CW		589433-G@-4	Meredith Corp. Senior Note Series Q	3	46,150,000	(18,460)	(106,145)	(138,450)
CW		36248M-AB-3	GT Loan Financing I Ltd. Sr Secd Note Class B	1	7,489,493	(2,996)	(17,226)	(22,468)
CW		278287-AC-1	Eaton Vance CDO VIII Ltd Second Priority Def Nt Cl B	1	1,991,640	(797)	(4,581)	(5,975)
CW		38136A-AA-2	Goldentree Loan Opp III Ltd Secd Deferrable Nt Cl D-1 144A	1	1,852,174	(741)	(4,260)	(5,557)
CW		24820R-AA-6	Statoil ASA Senior Unsecured Note	1	10,015,671	(4,006)	(23,036)	(30,047)
CN		912828-PX-2	US TREASURY N/B Note	1	397,295,922			
CN		76116F-AG-2	Resolution Funding Corp Principal Strip	1	228,863,287			
CN		912828-PX-2	US TREASURY N/B Note	1	301,743,738			
CN		76116F-AG-2	Resolution Funding Corp Principal Strip	1	292,165,898			
CN		92927K-A*-3	WABCO Holdings Inc Senior Note Series A	2	19,800,000			
CN		184692-B@-9	ClearBridge Energy MLP Fund Senior Secured Note Ser A	1	36,353,712			
CN		48661E-B*-8	Kayne Anderson Mdstm Egy Fd Senior Note Series D	1	36,450,000			
CN		03629#-AG-8	ETSA Utilities Finance Pty Ltd Gtd Senior Note Series B	1	36,000,000			
CN		89148B-B*-1	Tortoise MLP Fund Inc. Senior Note Series D	1	47,000,000			
CN		69850@-AB-9	Yorkshire Water Svcs Bradford Gtd Senior Sec Note Cl A Ser 2	1	27,300,000			
CN		68228*-AG-7	Smith & Nephew plc Senior Note Series C	1	28,250,000			
CN		09194@-AF-4	Transpower New Zealand Ltd Gtd Senior Note	1	28,000,000			
CN		55068#-AK-5	Luxtotta US Holdings Corp. Gtd Senior Note Series I	1	22,600,000			
CN		085209-A#-1	Bermuda Government Senior Note	1	25,000,000			
CN		62044@-AY-1	Compass Group plc Senior Note Series K	1	21,600,000			
CN		24820R-AA-6	Statoil ASA Senior Unsecured Note	1	11,127,411			
CN		731068-A@-1	Polaris Industries Inc. Senior Note Series 2011 Tr B	1	20,000,000			
CN		12656*-AC-6	CSLB Holdings Inc. Gtd Senior Note Series C	1	17,550,000			
CN		12656*-AB-8	CSLB Holdings Inc. Gtd Senior Note Series B	1	15,800,000			
CN		18469Q-A@-7	ClearBridge Energy MLP Total R Senior Secured Note Series B	1	9,464,993			
CN		48660P-D@-0	Kayne Anderson Energy Rtn Fd Senior Note Series K	1	12,015,385			
CN		74986@-AM-3	RREEF America REIT II Inc. Senior Note Series C	1	15,900,000			
CN		48661E-A#-5	Kayne Anderson Mdstm Egy Fd Senior Note Series C	1	5,355,000			
CN		486606-K@-4	Kayne Anderson MLP Invest Co. Senior Note Series JJ	1	12,700,000			
CN		21867*-AA-6	Core Labs Interest Hldgs Inc. Senior Note Ser 2011A	2	11,500,000			
CN		21867*-AB-4	Core Labs Interest Hldgs Inc. Senior Note Ser 2011B	2	11,400,000			

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE (Continued)

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CN		003009-A@-6	Aberdeen Asia-Pacific Income Senior Secured Note Series B	1	10,750,000			
CN		941848-C@-0	Waters Corporation Gtd Senior Note Series E	2	12,000,000			
CN		56081#-AL-4	Major League Baseball Trust Senior Note Series 6	1	9,000,000			
CN		912828-PX-2	US TREASURY N/B Note	1	324,223,646			
CN		76116F-AG-2	Resolution Funding Corp Principal Strip	1	71,418,331			
CN		912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	86,965,477			
CN		912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	128,159,651			
CN		912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	64,079,825			
CN		912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	64,079,825			
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	19,853,011	(7,941)	(45,662)	(59,559)
CW		28140V-AE-3	Education Funding Capital Tr Series 2004-1 Class A5	1	35,002,967	(14,001)	(80,507)	(105,009)
CW		78449F-AC-5	SMB Private Ed Ln Tr 2016-A NT CL A-2B	1	28,410,000	(11,364)	(65,343)	(85,230)
CW		63940F-AC-1	NAVIENT STUDENT LOAN TRUST Series 16-2 Class A3	1	22,420,000	(8,968)	(51,566)	(67,260)
CW		26827X-AA-1	ECMC GROUP STUDENT LOAN TRUST Series 2016-1A Class A	1	15,737,551	(6,295)	(36,196)	(47,213)
CW		033290-AN-7	Anchorage Capital CLO 2012-1 Sr Seed Nt Cl A-2A-R	1	5,100,000	(2,040)	(11,730)	(15,300)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	10,919,156	(4,368)	(25,114)	(32,757)
CW		78442G-PQ-3	SLM STUDENT LOAN TRUST Series 2005-5 Class A4	1	14,059,750	(5,624)	(32,337)	(42,179)
CW		49327H-AG-0	Keycorp Student Loan Trust Series 2006-A Class 2A4	1	11,441,538	(4,577)	(26,316)	(34,325)
CW		64031Q-BR-1	NELNET STUDENT LOAN TRUST Series 2005-1 Class A5	1	11,539,826	(4,616)	(26,542)	(34,619)
CW		78448Q-AD-0	SMB Private Ed Ln Tr 2015-B Ln Bckd Nt Cl A-3	1	11,853,800	(4,742)	(27,264)	(35,561)
CW		78442G-RX-6	SLM STUDENT LOAN TRUST Series 2006-2 Class A6	1	10,429,080	(4,172)	(23,987)	(31,287)
CW		78442G-EX-0	SLM STUDENT LOAN TRUST Series 2002-7Class A11	1	11,129,538	(4,452)	(25,598)	(33,389)
CW		10620N-AX-6	Brazos Higher Ed Auth Inc Ser 2006-2 Student LN REV NT	1	10,549,157	(4,220)	(24,263)	(31,647)
CW		64031Q-BX-8	NELNET STUDENT LOAN TRUST Series 2005-2 Class A5	1	9,646,401	(3,859)	(22,187)	(28,939)
CW		83715R-AF-9	South Carolina Student Loan Co Series 14-1 Class A2	1	9,596,383	(3,839)	(22,072)	(28,789)
CW		00432C-AV-3	Access Group Inc. Series 2003-A Class A3	1	7,918,557	(3,167)	(18,213)	(23,756)
CW		640315-AF-4	NELNET STUDENT LOAN TRUST Series 2006	1	7,551,440	(3,021)	(17,368)	(22,654)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	3,970,602	(1,588)	(9,132)	(11,912)
CW		63940L-AC-8	Navient Student Ln Tru 2016-6 Student Ln Bckd Nt Cl A-3	1	65,300,000	(26,120)	(150,190)	(195,900)
CW		61205P-AL-3	Montana Higher Ed Student Asst 2012-A3 Student Sr Ln Rev Bd	1	22,635,246	(9,054)	(52,061)	(67,906)
CW		784419-AF-0	S L C Student Loan Trust Series 2006-A Class B	1	17,044,977	(6,818)	(39,203)	(51,135)
CW		78442G-EW-2	SLM STUDENT LOAN TRUST Series 2002-7 Class A10	1	1,104,247	(442)	(2,540)	(3,313)
CW		429827-AK-4	Higher Education Funding Series 2004-1 Class A10	1	1,764,662	(706)	(4,059)	(5,294)
CW		784419-AE-3	S L C Student Loan Trust Series 2006-A Class A5	1	1,651,987	(661)	(3,800)	(4,956)
CW		429827-AP-3	Higher Education Funding Series 2004-1 Class A14	1	1,140,182	(456)	(2,622)	(3,421)
CW		429827-AB-4	Higher Education Funding Series 2004-1 Class A2	1	1,048,534	(419)	(2,412)	(3,146)
CW		83715A-AJ-8	South Carolina Student Loan Co Sr Unsecured	1	1,830,560	(732)	(4,210)	(5,492)
CW		784427-AF-3	S L C Student Loan Trust Series 2006-1 Class A6	1	1,596,320	(639)	(3,672)	(4,789)
CW		64033Q-AC-3	NELNET STUDENT LOAN TRUST Series 2015-2A Class B	1	1,642,099	(657)	(3,777)	(4,926)
CW		462590-JT-8	Iowa Student Loan Liquidity Co Series 2012-1 Class B	1	1,830,281	(732)	(4,210)	(5,491)
CW		709163-GJ-2	Pennsylvania Higher Education Series 2006-2 Class B	1	1,561,655	(625)	(3,592)	(4,685)
CW		17284L-AB-0	CIT Education Loan Trust Series 2007-1 Class B	1	1,316,649	(527)	(3,028)	(3,950)
CW		78448C-AH-2	SLM Student Ln Tr 2013-6 Student Ln Bckd Nt Pl B Cl B	1	1,325,542	(530)	(3,049)	(3,977)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	14,889,758	(5,956)	(34,246)	(44,669)
CW		78448R-AD-8	SMB Private Ed Ln Tr 2015-C Ln Bckd Nt Cl A-3	1	6,179,026	(2,472)	(14,212)	(18,537)
CW		78448P-AD-2	SMB Private Ed Ln Tr 2015-A Private Ed Ln Bckd Nt A-3	1	5,378,515	(2,151)	(12,371)	(16,136)
CW		69847R-AB-8	Panhandle-Plains Stud Fin Corp Series 2001-1 Class A2	1	4,634,399	(1,854)	(10,659)	(13,903)
CW		19458L-BH-2	Collegiate Funding Services Ed Series 2005-B Class A4	1	4,791,160	(1,916)	(11,020)	(14,373)
CW		78446D-AC-3	SLM STUDENT LOAN TRUST Series 2011-A Class A3	1	4,678,462	(1,871)	(10,760)	(14,035)
CW		63938E-AD-6	Navient Student Loan Trust Series 2014-1 Class A4	1	3,728,889	(1,492)	(8,576)	(11,187)
CW		00432C-CF-6	Access Group Inc. Series 2005-1 Class A3	1	1,948,562	(779)	(4,482)	(5,846)
CW		840555-DA-1	SOUTH TEXAS HIGHER EDUCATION Series 2012-1 Class A3	1	15,944,485	(6,378)	(36,672)	(47,833)
CW		00432C-CW-9	Access Group Inc. Series 2005-B Class A3	1	13,696,117	(5,478)	(31,501)	(41,088)
CW		28148W-AC-7	Educational Funding South Inc Series 2011-1 Class B	1	9,716,728	(3,887)	(22,348)	(29,150)
CW		78444C-AE-3	SLM STUDENT LOAN TRUST Series 07-6 Class A5	1	8,997,926	(3,599)	(20,695)	(26,994)
CW		78443F-AF-4	SLM STUDENT LOAN TRUST Series 2007-5 Class A6	1	8,349,666	(3,340)	(19,204)	(25,049)
CW		00400V-AB-3	Academic Ln Fdg Tr 2012-1 Student Ln Asset Bkd No Cl A-2	1	8,020,501	(3,208)	(18,447)	(24,062)
CW		462592-AD-8	Iowa Student Ln Liquidity Corp Series 2005-1 Class B	1	945,874	(378)	(2,176)	(2,838)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	Basic Contribution	Reserve Objective	Maximum Reserve
CW		78442G-QA-7	SLM STUDENT LOAN TRUST Series 2005-6 Class B	1	976,537	(391)	(2,246)	(2,930)
CW		38021F-AB-7	Goal Capital Funding Trust Series 2015-1 Class B	1	1,607,998	(643)	(3,698)	(4,824)
CW		28138J-AB-0	EDUCATIONAL SERVICES OF AMERI Series 15-2 Class B	1	1,629,271	(652)	(3,747)	(4,888)
CW		78442G-GM-2	SLM STUDENT LOAN TRUST SLMA 2003-4 B	1	1,533,129	(613)	(3,526)	(4,599)
CW		28090A-AB-5	Educational Services of Americ 2014-4 Series B	1	1,321,794	(529)	(3,040)	(3,965)
CW		83401L-AA-2	Social Professional Loan Progr Series 2015-A Class A1	1	1,301,674	(521)	(2,994)	(3,905)
CW		00191D-AN-0	ARES XXV CLO Ltd Mezz Def Nt Cl C-R	1	1,815,000	(726)	(4,175)	(5,445)
CW		14310V-AE-7	Carlyle Global Mkt CLO 2014-2 Mezzanine Secd Deferrable Cl C	1	1,528,994	(612)	(3,517)	(4,587)
CW		39808F-AE-8	Greywolf CLO III Ltd Sr Secd Def Nt Cl B	1	1,129,569	(452)	(2,598)	(3,389)
CW		49638W-AE-6	Kingsland VI Ltd Secd Def Mezz Nt Cl C	1	1,034,339	(414)	(2,379)	(3,103)
CW		74981H-AE-0	Race Point IX CLO Ltd Sr Secd Def Nt Cl B	1	1,004,482	(402)	(2,310)	(3,013)
CW		281397-AP-4	Education Loan Asset-Backed TR Series 2003-2 Class 2A1	1	7,451,005	(2,980)	(17,137)	(22,353)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	9,926,505	(3,971)	(22,831)	(29,780)
CW		66705R-AA-7	NORTHSTAR STUDENT LN TR III Priv Ed Ln Sr Ser 2016-A	1	6,713,507	(2,685)	(15,441)	(20,141)
CW		281397-AB-5	Education Loan Asset-Backed TR Series 2003-1 Class A2	1	6,573,376	(2,629)	(15,119)	(19,720)
CW		64031Q-CK-5	NELNET STUDENT LOAN TRUST Series 2005-4 Class A4R1	1	4,997,178	(1,999)	(11,494)	(14,992)
CW		78443G-AG-0	S L M Student Loan Trust Series 2006-7 Class A6B	1	4,640,739	(1,856)	(10,674)	(13,922)
CW		106238-LJ-5	Brazos Tex Higher Ed Auth Inc Series 2005 Class B1	1	3,934,156	(1,574)	(9,049)	(11,802)
CW		28108Q-AB-0	Edlinc Student Loan Funding Tr Series 2012-1 Class B	1	5,287,953	(2,115)	(12,162)	(15,864)
CW		281397-AQ-2	Education Loan Asset-Backed TR Series 2003-2 Class 2A2	1	4,315,407	(1,726)	(9,925)	(12,946)
CW		38021E-AA-2	Goal Capital Funding Trust Series 2010-1 Class A	1	4,056,313	(1,623)	(9,330)	(12,169)
CW		64031Q-CM-1	NELNET STUDENT LOAN TRUST Series 2005-4 Class A4R2	1	3,563,348	(1,425)	(8,196)	(10,690)
CW		658262-GD-6	North Carolina St Ed Ass Auth Series 2011-2 Class A3	1	3,665,342	(1,466)	(8,430)	(10,996)
CW		78442G-KW-5	SLM STUDENT LOAN TRUST Series 2004-1 Class A6	1	1,855,467	(742)	(4,268)	(5,566)
CW		83149E-AG-2	SLM Student Ln Tr 2006-5 Note Class B	1	15,064,644	(6,026)	(34,649)	(45,194)
CW		784419-AG-8	S L C Student Loan Trust Series 2006-A Class C	1	9,518,561	(3,807)	(21,893)	(28,556)
CW		23341K-AA-3	DRB PRIME STUDENT LOAN TRUST Ser 2015-D A1	1	9,368,858	(3,748)	(21,548)	(28,107)
CW		64031C-AB-8	Nelnet Student Loan Trust Series 2012-2A Class B	1	8,543,348	(3,417)	(19,650)	(25,630)
CW		83149F-AD-6	SLM STUDENT LOAN TRUST Series 2006-6 Class B	1	6,996,596	(2,799)	(16,092)	(20,990)
CW		78442G-PS-9	SLM STUDENT LOAN TRUST Series 2005-5 Class B	1	6,702,624	(2,681)	(15,416)	(20,108)
CW		87244A-BC-3	WIND RIVER CLO LTD Sr Secd Nt Cl B-R	1	3,900,000	(1,560)	(8,970)	(11,700)
CW		28140V-AD-5	Education Funding Capital Tr Series 2004-1 Class A4	1	15,183,882	(6,074)	(34,923)	(45,552)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	10,919,156	(4,368)	(25,114)	(32,757)
CW		83715R-AG-7	South Carolina Student Loan Co Series 2014-1 Class B	1	9,172,194	(3,669)	(21,096)	(27,517)
CW		78442Q-AE-1	SLC STUDENT LOAN TRUST Series 2005-1 Class B	1	7,192,694	(2,877)	(16,543)	(21,578)
CW		78442G-QT-6	SLM STUDENT LOAN TRUST Series 2005-8 Class B	1	6,548,294	(2,619)	(15,061)	(19,645)
CW		78442G-PD-2	SLM STUDENT LOAN TRUST Series 2005-3 Class B	1	6,266,084	(2,506)	(14,412)	(18,798)
CW		493268-AU-0	Keycorp Student Loan Trust Series 1999-B Class CTFS	1	6,208,737	(2,483)	(14,280)	(18,626)
CW		78446C-AB-7	S L M Student Loan Trust Series 2013-2 Class B	1	6,489,983	(2,596)	(14,927)	(19,470)
CW		63938E-AE-4	Naviest Student Loan Trust Series 2014-1 Class B	1	5,817,870	(2,327)	(13,381)	(17,454)
CW		64031A-AJ-5	Nelnet Student Loan Trust Series 2006-3 Class B	1	6,192,712	(2,477)	(14,243)	(18,578)
CW		63939L-AC-1	NAVIENT STUDENT LOAN TRUST Series 2015-3 Class B	1	6,029,197	(2,412)	(13,867)	(18,088)
CW		78447M-AD-0	S L M Student Loan Trust Series 2013-1 Class B	1	6,013,389	(2,405)	(13,831)	(18,040)
CW		64033J-AB-1	Nelnet Student Loan Trust Series 2014-1A Class B	1	5,252,126	(2,101)	(12,080)	(15,756)
CW		194266-AE-2	College Loan Corporation Trust Series 2005-2 Class B	1	4,556,552	(1,823)	(10,480)	(13,670)
CW		64033N-AB-2	Nelnet Student Loan Trust Series 2014-5A Class B	1	4,406,876	(1,763)	(10,136)	(13,221)
CW		194262-CF-6	College Loan Corporation Trust Series 2004-1 Class B	1	3,526,752	(1,411)	(8,112)	(10,580)
CW		78442G-LJ-3	SLM STUDENT LOAN TRUST Series 2004 - 3 Class B	1	3,220,187	(1,288)	(7,406)	(9,661)
CW		64032A-AB-1	Nelnet Student Loan Trust Series 2012-1A Class B	1	3,363,466	(1,345)	(7,736)	(10,090)
CW		64032F-AH-7	Nelnet Student Loan Trust Series 2007-2A Class A4A2	1	2,925,332	(1,170)	(6,728)	(8,776)
CW		64033L-AD-2	Nelnet Student Loan Trust Series 2014-2A Class B	1	3,107,320	(1,243)	(7,147)	(9,322)
CW		64033K-AB-8	Nelnet Student Loan Trust Series 2014-3A Class B	1	3,011,602	(1,205)	(6,927)	(9,035)
CW		94949L-AE-0	Wellfleet CLO 2016-2 Ltd Mezz Secd Def Nt Cl B	1	2,500,000	(1,000)	(5,750)	(7,500)
CW		04964H-AN-8	Atrium VIII Series 8A Class BR	1	8,900,000	(3,560)	(20,470)	(26,700)
CW		MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	3,970,602	(1,588)	(9,132)	(11,912)
CW		87246M-AB-8	TICP CLO VI 2016-2 Ltd Sr Secd Nt Cl B	1	8,876,065	(3,550)	(20,415)	(26,628)
CW		04941T-AE-0	Atlas Sr Ln Fd VII Ltd Sr Secd Nt Cl B	1	8,850,000	(3,540)	(20,355)	(26,550)
CW		14309Y-AQ-7	Carlyle Global Mkt CLO 2012-4 Series 2012-4A Class BR	1	8,850,000	(3,540)	(20,355)	(26,550)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
CW		03764X-AJ-6	Apidos CLO XVII Sr Secd Nt Cl A-2R	1	8,850,000	(3,540)	(20,355)	(26,550)
CW		06759Y-AC-9	Barings CLO Ltd 2016-III Secd Def Mezz Nt Cl C	1	7,500,000	(3,000)	(17,250)	(22,500)
CW		81789G-AC-5	SEVEN STICKS CLO LTD Sr Secd Note Class A-2	1	7,370,000	(2,948)	(16,951)	(22,110)
CW		00191D-AM-2	ARES XXV CLO Ltd Sr Nt Class B-R	1	7,180,000	(2,872)	(16,514)	(21,540)
CW		04964W-AC-9	Atrium XI Sr Secd Note Class B	1	2,756,607	(1,103)	(6,340)	(8,270)
CW		36319G-AB-0	GALAXY XVIII CLO LTD Sr Nt Cl B	1	2,063,008	(825)	(4,745)	(6,189)
CW		00163E-AM-4	ALM VI Ltd Series 2012-6A Class A2R	1	1,999,808	(800)	(4,600)	(5,999)
CW		04015G-AC-3	Ares XXXIV CLO Ltd Sr Note Cl B	1	2,510,084	(1,004)	(5,773)	(7,530)
CW		78448A-AD-5	S L M Student Loan Trust Series 2013-4 Class B	1	3,049,395	(1,220)	(7,014)	(9,148)
CW		568416-BD-2	MARINE PARK CLO LTD Sr Secd Deferrable Nt Cl B-R	1	1,999,664	(800)	(4,599)	(5,999)
CW		38021B-AG-5	Goal Capital Funding Trust Series 2006-1 Class B	1	2,697,315	(1,079)	(6,204)	(8,092)
CW		00432C-DE-8	Access Group Inc. Series 2006-1 Class B	1	2,081,675	(833)	(4,788)	(6,245)
CW		78442G-KN-5	SLM STUDENT LOAN TRUST Series 2003-14 Class A6	1	2,429,851	(972)	(5,589)	(7,290)
CW		49326B-BW-5	Keycorp Student Loan Trust Series 2004-A Class 1B	1	2,105,629	(842)	(4,843)	(6,317)
CW		429827-AR-9	Higher Education Funding Series 2004-1 Class B1	1	1,977,948	(791)	(4,549)	(5,934)
CW		429827-AS-7	Higher Education Funding Series 2004-1 Class B2	1	1,989,981	(796)	(4,577)	(5,970)
CW		64033T-AB-9	NELNET STUDENT LOAN TRUST Series 2015-3A Class B	1	1,896,432	(759)	(4,362)	(5,689)
CW		19458L-BD-1	Collegiate Funding Services Ed Series 2005-A Class B	1	1,909,519	(764)	(4,392)	(5,729)
CW		00435T-AB-7	ACCESS GROUP INC Series 2015-1 Class B	1	1,836,876	(735)	(4,225)	(5,511)
CW		78442G-RY-4	SLM STUDENT LOAN TRUST Series 2006-2 Class B	1	3,244,796	(1,298)	(7,463)	(9,734)
CW		194267-AM-2	College Loan Corporation Trust Series 2007-1 Class B2	1	3,106,779	(1,243)	(7,146)	(9,320)
CW		92978J-AH-6	Wachovia Student Loan Trust Series 2006-1 Class B	1	2,604,923	(1,042)	(5,991)	(7,815)
CW		83715R-AH-5	South Carolina Student Loan Co Series 15-A Class A	1	2,641,029	(1,056)	(6,074)	(7,923)
CW		28137T-AB-9	Educational Services of Americ Series 2014-2 Class B	1	2,432,909	(973)	(5,596)	(7,299)
CW		78443B-AK-2	S L M Student Loan Trust Series 2006-10 Class B	1	2,266,154	(906)	(5,212)	(6,798)
CW		69340C-AB-2	Pennsylvania Higher Education Series 2015-1A Class B	1	2,254,545	(902)	(5,185)	(6,764)
CW		28137B-AB-5	Educational Services of Americ Series 2015-1 Class B	1	2,109,823	(844)	(4,853)	(6,329)
CW		00432C-AR-2	Access Group Inc. Series 2002-A Class A2	1	2,221,115	(888)	(5,109)	(6,663)
CW		63939D-AD-7	Navient Student Loan Trust Series 2014-8 Class B	1	2,196,793	(879)	(5,053)	(6,590)
CW		09627L-AJ-6	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class D	2	3,981,753	(1,593)	(9,158)	(11,945)
CW		09194B-AC-1	Transpower New Zealand Ltd Senior Note Series C	1	17,500,000	(7,000)	(40,250)	(52,500)
CW		87165V-AE-9	Symphony CLO XVI Ltd Def Mezz Nt Cl D	2	3,943,238	(1,577)	(9,069)	(11,830)
CW		55953M-AG-7	Magnetite XV Ltd Def Mezz Nt Cl D	2	2,746,839	(1,099)	(6,318)	(8,241)
CW		50188G-AN-3	LCM XVIII Ltd Partnership Series 18A Class D	3	2,713,900	(1,086)	(6,242)	(8,142)
CW		33882B-AE-9	Flatiron CLO 2007-1 Ltd. Def Mezz Term Nt Cl D	1	1,087,117	(435)	(2,500)	(3,261)
CW		55818Y-AJ-0	Madison Pk Fdg XVII Ltd Def Nt Cl D	1	1,945,969	(778)	(4,476)	(5,838)
CW		87230A-AD-8	TCI-FLATIRON CLO 2016-1 LTD Sr Secd Def Nt Cl D	3	2,009,174	(804)	(4,621)	(6,028)
CW		67706H-AJ-7	OHA Loan Funding 2013-1 Ltd Mezz Secd Def Nt Cl D	2	2,999,622	(1,200)	(6,899)	(8,999)
CW		04964H-AQ-1	Atrium VIII Def Nt Cl C-R	1	8,200,000	(3,280)	(18,860)	(24,600)
CW		06759Y-AE-5	Barings CLO Ltd 2016-III Sr Secd Def Nt Cl B	1	7,516,250	(3,007)	(17,287)	(22,549)
CW		26251B-AD-8	Dryden XXVIII Senior Loan Fund Series 13-28A Class A3L	1	6,989,725	(2,796)	(16,076)	(20,969)
CW		87244A-BE-9	WIND RIVER CLO LTD Secd Def Nt Cl C-R	1	6,739,841	(2,696)	(15,502)	(20,220)
CW		14309Y-AY-0	Carlyle Global Mkt CLO 2012-4 Sr Secd Nt Cl C-1-R	1	6,700,000	(2,680)	(15,410)	(20,100)
CW		88433A-AE-9	THL CR WIND RIV 2016-1 CLO LTD SR SECN NT CL C	1	6,585,000	(2,634)	(15,146)	(19,755)
CW		00164B-AU-1	ALM VII R 2 Ltd Series ALM 2013-7R2A Class BR	1	5,000,000	(2,000)	(11,500)	(15,000)
CW		03328W-AE-8	Anchorage Cap CLO 9 Ltd Mezz Secd Def Nt Cl C	1	5,000,000	(2,000)	(11,500)	(15,000)
CW		09627V-AW-5	Bluemountain CLO 2014-4 Ltd Sr Secd Nt Cl C-R	1	5,000,000	(2,000)	(11,500)	(15,000)
CW		55820N-AE-1	Madison Park Fdg XXIV Ltd Secd Def Nt Cl C	1	4,719,657	(1,888)	(10,855)	(14,159)
CW		88432C-AE-6	THL Cr Wind River 2014-1 CLO Secd Def Nt Cl C	1	4,565,496	(1,826)	(10,501)	(13,696)
CW		26244Y-AE-6	Dryden 42 Sr Ln Fd Sr Secd Def Nt Cl C	1	4,510,712	(1,804)	(10,375)	(13,532)
CW		67091H-AP-6	OHA Loan Fdg 2012-1 Ltd Mezz Secd Def Nt Cl C-R	1	4,500,000	(1,800)	(10,350)	(13,500)
CW		88432G-AE-7	THL Cr Wind River 2015-2 CLO Sr Secd Note Cl C	1	4,425,449	(1,770)	(10,179)	(13,276)
CW		48251B-AE-0	KKR CLO 16 Ltd Sr Secd Def Nt Cl B-1	1	4,375,000	(1,750)	(10,063)	(13,125)
CW		03763Y-AS-5	Apidos CLO XI Def Nt Cl C-R	1	4,200,000	(1,680)	(9,660)	(12,600)
CW		03765L-AL-6	Apidos CLO XX Mezz Def Nt Cl B-R	1	4,000,000	(1,600)	(9,200)	(12,000)
CW		09626R-AS-4	Bluemountain CLO 2012-2 Ltd Sr Secd Def Nt Cl C-R	1	4,000,000	(1,600)	(9,200)	(12,000)
CW		00900A-AC-2	Aimco CLO Ser 2014-A Sr Secd Note Class C-1	1	2,937,148	(1,175)	(6,755)	(8,811)
CW		04941G-AE-8	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C	1	2,786,168	(1,114)	(6,408)	(8,359)

**ASSET VALUATION RESERVE (Continued)**

**BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS REPLICATIONS (SYNTHETIC) ASSETS**

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
0199999. Subtotal Default Component - Other Than Mortgage					23,007,999,965	4,021,941	12,827,754	19,614,995
0599999 - Total					23,007,999,965	4,021,941	12,827,754	19,614,995

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**SCHEDULE F**

Showing all claims for death losses and all other contract claims resisted or compromised during the year, and all claims for death losses and all other contract claims resisted December 31 of current year

1 Contract Numbers	2 Claim Numbers	3 State of Residence of Claimant	4 Year of Claim for Death or Disability	5 Amount Claimed	6 Amount Paid During the Year	7 Amount Resisted Dec. 31 of Current Year	8 Why Compromised or Resisted
22204375	15-00285	SC	2015	1,000,000	700,000		Company claims material misrepresentation in application. Compromised to avoid legal expenses and uncertainty of litigation. Company claims material misrepresentation in application. Compromised to avoid legal expenses and uncertainty of litigation.
23806612	15-01880	TX	2015	1,000,000	500,000		
0199999. Death Claims - Ordinary				2,000,000	1,200,000		XXX
0599999. Death Claims - Disposed Of				2,000,000	1,200,000		XXX
1099999. Additional Accidental Death Benefits Claims - Disposed Of							XXX
1599999. Disability Benefits Claims - Disposed Of							XXX
2099999. Matured Endowments Claims - Disposed Of							XXX
2599999. Annuities with Life Contingency Claims - Disposed Of							XXX
2699999. Claims Disposed of During Current Year				2,000,000	1,200,000		XXX
15656250	0250583	NY	2015	300,000		300,000	Company claims material misrepresentation in application. Company claims no policy issued.
15676535	0000624	MA	2016	250,000		250,000	
2799999. Death Claims - Ordinary				550,000		550,000	XXX
3199999. Death Claims - Resisted				550,000		550,000	XXX
3699999. Additional Accidental Death Benefits Claims - Resisted							XXX
11564044	MMFG-03-80734-01-LW	CA	2007	796,840		796,840	Company claims no liability under the terms of the contract.
3799999. Disability Benefits Claims - Ordinary				796,840		796,840	XXX
4199999. Disability Benefits Claims - Resisted				796,840		796,840	XXX
4699999. Matured Endowments Claims - Resisted							XXX
5199999. Annuities with Life Contingencies Claims - Resisted							XXX
5299999. Claims Resisted During Current Year				1,346,840		1,346,840	XXX
5399999 - Totals				3,346,840	1,200,000	1,346,840	XXX

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE H - ACCIDENT AND HEALTH EXHIBIT**

	Total		Group Accident and Health		Credit Accident and Health (Group and Individual)		Collectively Renewable		Other Individual Contracts									
	1 Amount	2 %	3 Amount	4 %	5 Amount	6 %	7 Amount	8 %	Non-Cancelable		Guaranteed Renewable		Non-Renewable for Stated Reasons Only		Other Accident Only		All Other	
									9 Amount	10 %	11 Amount	12 %	13 Amount	14 %	15 Amount	16 %	17 Amount	18 %
<b>PART 1. - ANALYSIS OF UNDERWRITING OPERATIONS</b>																		
1. Premiums written	586,711,482	XXX		XXX		XXX		XXX	478,993,561	XXX	97,664,215	XXX	10,053,706	XXX		XXX		XXX
2. Premiums earned	583,791,601	XXX		XXX		XXX		XXX	478,618,793	XXX	95,206,164	XXX	9,966,644	XXX		XXX		XXX
3. Incurred claims	357,845,338	61.3							352,154,481	73.6	4,693,190	4.9	997,667	10.0				
4. Cost containment expenses	7,179,133	1.2							7,179,133	1.5								
5. Incurred claims and cost containment expenses (Lines 3 and 4)	365,024,471	62.5							359,333,614	75.1	4,693,190	4.9	997,667	10.0				
6. Increase in contract reserves	88,151,841	15.1							1,967,241	0.4	86,181,114	90.5	3,486	0.0				
7. Commissions (a)	56,247,467	9.6							63,893,102	13.3	(8,976,130)	(9.4)	1,330,495	13.3				
8. Other general insurance expenses	162,550,795	27.8	4,791						119,266,835	24.9	40,795,277	42.8	2,483,892	24.9				
9. Taxes, licenses and fees	20,528,312	3.5	4,421						15,469,018	3.2	4,732,658	5.0	322,215	3.2				
10. Total other expenses incurred	239,326,574	41.0	9,212						198,628,955	41.5	36,551,805	38.4	4,136,602	41.5				
11. Aggregate write-ins for deductions	4,698,345	0.8							2,972,758	0.6	1,725,587	1.8						
12. Gain from underwriting before dividends or refunds	(113,409,630)	(19.4)	(9,212)						(84,283,776)	(17.6)	(33,945,531)	(35.7)	4,828,889	48.5				
13. Dividends or refunds	24,575,916	4.2							24,066,262	5.0	4,972	0.0	504,682	5.1				
14. Gain from underwriting after dividends or refunds	(137,985,546)	(23.6)	(9,212)						(108,350,038)	(22.6)	(33,950,503)	(35.7)	4,324,207	43.4				
<b>DETAILS OF WRITE-INS</b>																		
1101. Miscellaneous charges	4,698,345	0.8							2,972,758	0.6	1,725,587	1.8						
1102.																		
1103.																		
1198. Summary of remaining write-ins for Line 11 from overflow page																		
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above)	4,698,345	0.8							2,972,758	0.6	1,725,587	1.8						

(a) Includes \$ ..... reported as "Contract, membership and other fees retained by agents."

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**SCHEDULE H - ACCIDENT AND HEALTH EXHIBIT (Continued)**

	1 Total	2 Group Accident and Health	3 Credit Accident and Health (Group and Individual)	4 Collectively Renewable	Other Individual Contracts				
					5 Non-Cancelable	6 Guaranteed Renewable	7 Non-Renewable for Stated Reasons Only	8 Other Accident Only	9 All Other
<b>PART 2. - RESERVES AND LIABILITIES</b>									
<b>A. Premium Reserves:</b>									
1. Unearned premiums .....	64,986,815				43,087,393	21,416,829	482,593		
2. Advance premiums .....	9,405,641				6,591,008	2,671,909	142,724		
3. Reserve for rate credits .....									
4. Total premium reserves, current year .....	74,392,456				49,678,401	24,088,738	625,317		
5. Total premium reserves, prior year .....	71,906,768				49,932,036	21,414,333	560,399		
6. Increase in total premium reserves .....	2,485,688				(253,635)	2,674,405	64,918		
<b>B. Contract Reserves:</b>									
1. Additional reserves (a) .....	833,955,462				526,195,806	307,733,477	26,179		
2. Reserve for future contingent benefits .....									
3. Total contract reserves, current year .....	833,955,462				526,195,806	307,733,477	26,179		
4. Total contract reserves, prior year .....	745,803,623				524,228,566	221,552,364	22,693		
5. Increase in contract reserves .....	88,151,839				1,967,240	86,181,113	3,486		
<b>C. Claim Reserves and Liabilities:</b>									
1. Total current year .....	1,918,454,996				1,903,232,989	12,917,443	2,304,564		
2. Total prior year .....	1,900,378,992				1,888,606,031	10,074,313	1,698,648		
3. Increase .....	18,076,004				14,626,958	2,843,130	605,917		

<b>PART 3. - TEST OF PRIOR YEAR'S CLAIM RESERVES AND LIABILITIES</b>									
<b>1. Claims paid during the year:</b>									
1.1 On claims incurred prior to current year .....	331,342,886				329,515,656	1,671,721	155,509		
1.2 On claims incurred during current year .....	8,426,446				8,011,867	178,338	236,241		
<b>2. Claim reserves and liabilities, December 31, current year:</b>									
2.1 On claims incurred prior to current year .....	1,691,789,780				1,683,353,580	7,251,103	1,185,097		
2.2 On claims incurred during current year .....	226,665,216				219,879,409	5,666,340	1,119,467		
<b>3. Test:</b>									
3.1 Lines 1.1 and 2.1 .....	2,023,132,666				2,012,869,236	8,922,825	1,340,606		
3.2 Claim reserves and liabilities, December 31, prior year .....	1,900,378,992				1,888,606,031	10,074,313	1,698,648		
3.3 Line 3.1 minus Line 3.2 .....	122,753,674				124,263,205	(1,151,488)	(358,042)		

<b>PART 4. - REINSURANCE</b>									
<b>A. Reinsurance Assumed:</b>									
1. Premiums written .....									
2. Premiums earned .....									
3. Incurred claims .....									
4. Commissions .....									
<b>B. Reinsurance Ceded:</b>									
1. Premiums written .....	122,943,528					122,943,528			
2. Premiums earned .....	123,946,650					123,946,650			
3. Incurred claims .....	49,923,053				3,968,305	45,954,748			
4. Commissions .....	23,980,341					23,980,341			

(a) Includes \$ ..... premium deficiency reserve.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE H - PART 5 - HEALTH CLAIMS**

	1 Medical	2 Dental	3 Other	4 Total
<b>A. Direct:</b>				
1. Incurred Claims .....			407,768,391	407,768,391
2. Beginning Claim Reserves and Liabilities .....			2,051,648,170	2,051,648,170
3. Ending Claim Reserves and Liabilities .....			2,084,127,161	2,084,127,161
4. Claims Paid			375,289,400	375,289,400
<b>B. Assumed Reinsurance:</b>				
5. Incurred Claims.....				
6. Beginning Claim Reserves and Liabilities .....				
7. Ending Claim Reserves and Liabilities .....				
8. Claims Paid				
<b>C. Ceded Reinsurance:</b>				
9. Incurred Claims.....			49,923,053	49,923,053
10. Beginning Claim Reserves and Liabilities .....			151,302,956	151,302,956
11. Ending Claim Reserves and Liabilities .....			165,717,649	165,717,649
12. Claims Paid			35,508,360	35,508,360
<b>D. Net:</b>				
13. Incurred Claims.....			357,845,338	357,845,338
14. Beginning Claim Reserves and Liabilities .....			1,900,345,214	1,900,345,214
15. Ending Claim Reserves and Liabilities .....			1,918,409,512	1,918,409,512
16. Claims Paid			339,781,040	339,781,040
<b>E. Net Incurred Claims and Cost Containment Expenses:</b>				
17. Incurred Claims and Cost Containment Expenses .....			365,024,471	365,024,471
18. Beginning Reserves and Liabilities .....			1,903,720,548	1,903,720,548
19. Ending Reserves and Liabilities .....			1,921,591,270	1,921,591,270
20. Paid Claims and Cost Containment Expenses			347,153,749	347,153,749

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 1 - SECTION 1**

Reinsurance Assumed Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsured Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Reinsured	5 Domiciliary Jurisdiction	6 Type of Reinsurance Assumed	7 Amount of In Force at End of Year	8 Reserve	9 Premiums	10 Reinsurance Payable on Paid and Unpaid Losses	11 Modified Coinsurance Reserve	12 Funds Withheld Under Coinsurance
93432	06-1041383	01/01/1985	C. M. Life Insurance Company	CT	OTH/I			497,369			
93432	06-1041383	01/01/2000	C. M. Life Insurance Company	CT	CO/I	2,901,538,321	405,105,814	13,937,593	30,289,770		
93432	06-1041383	01/01/2002	C. M. Life Insurance Company	CT	CO/I	2,860,179,981	369,876,934	31,106,812	8,875,520		
70416	43-0581430	09/07/1983	MML Bay State Life Insurance Company	CT	YRT/I	587,676,526	5,960,645	7,057,869	904,674		
70416	43-0581430	01/01/1997	MML Bay State Life Insurance Company	CT	OTH/I			230,897			
0299999. General Account - U.S. Affiliates - Other						6,349,394,828	780,943,393	52,830,540	40,069,964		
0399999. Total General Account - U.S. Affiliates						6,349,394,828	780,943,393	52,830,540	40,069,964		
00000	AA-1580031	03/31/2007	MassMutual Life Insurance Company	JPN	YRT/I	119,085	39	38,126			
0599999. General Account - Non-U.S. Affiliates - Other						119,085	39	38,126			
0699999. Total General Account - Non-U.S. Affiliates						119,085	39	38,126			
0799999. Total General Account - Affiliates						6,349,513,913	780,943,432	52,868,666	40,069,964		
80659	38-0397420	01/01/1986	The Canada Life Assurance Company	MI	YRT/I	768,118	22,614	23,346			
63665	43-0285930	10/01/1981	General American Life Insurance Co. (FAC)	MO	YRT/I	2,315,038	76,320	109,460			
63665	43-0285930	11/01/1985	General American Life Insurance Co. (JX25)	MO	YRT/I	6,143,177	121,100	131,022			
88072	06-0974148	01/01/2013	Hartford Life Insurance Company	CT	CO/G		5,473,891,837	458,664,661			
65676	35-0472300	06/28/2000	The Lincoln National Life Insurance Company	IN	YRT/I	3,331,146		981			
80314	52-0913817	12/31/1994	UniCARE Life and Health Insurance Company	IN	CO/G		920,293				
0899999. General Account - U.S. Non-Affiliates						12,557,479	5,475,033,145	458,928,988			
00000	AA-3190973	10/01/2000	Argus International Life Insurance Limited	BMU	YRT/I	1,183,704	5,617	5,359			
00000	AA-3190974	01/01/2002	Argus International Life Bermuda Limited	BMU	YRT/I	3,118,947	21,700	28,720			
0999999. General Account - Non-U.S. Non-Affiliates						4,302,651	27,317	34,079			
1099999. Total General Account - Non-Affiliates						16,860,130	5,475,060,462	458,963,067			
1199999. Total General Account						6,366,374,043	6,256,003,894	511,831,733	40,069,964		
70416	43-0581430	01/01/2000	MML Bay State Life Insurance Company	CT	MCO/G	2,262,078,867		1,135	5,391,079	1,076,615,887	
1399999. Separate Accounts - U.S. Affiliates - Other						2,262,078,867		1,135	5,391,079	1,076,615,887	
1499999. Total Separate Accounts - U.S. Affiliates						2,262,078,867		1,135	5,391,079	1,076,615,887	
1799999. Total Separate Accounts - Non-U.S. Affiliates											
1899999. Total Separate Accounts - Affiliates						2,262,078,867		1,135	5,391,079	1,076,615,887	
88072	06-0974148	01/01/2013	Hartford Life Insurance Company	CT	MCO/G			930,198,567		9,209,869,890	
1999999. Separate Accounts - U.S. Non-Affiliates								930,198,567		9,209,869,890	
2199999. Total Separate Accounts - Non-Affiliates								930,198,567		9,209,869,890	
2299999. Total Separate Accounts						2,262,078,867		930,199,702	5,391,079	10,286,485,777	
2399999. Total U.S. (Sum of 0399999, 0899999, 1499999 and 1999999)						8,624,031,174	6,255,976,538	1,441,959,229	45,461,043	10,286,485,777	
2499999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999 and 2099999)						4,421,736	27,356	72,205			
9999999 - Totals						8,628,452,909	6,256,003,894	1,442,031,435	45,461,043	10,286,485,777	

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**SCHEDULE S - PART 1 - SECTION 2**

Reinsurance Assumed Accident and Health Insurance Listed by Reinsured Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Reinsured	5 Jurisdiction	6 Type of Reinsurance Assumed	7 Premiums	8 Unearned Premiums	9 Reserve Liability Other Than for Unearned Premiums	10 Reinsurance Payable on Paid and Unpaid Losses	11 Modified Coinsurance Reserve	12 Funds Withheld Under Coinsurance
<b>NONE</b>											
9999999 - Totals											

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**SCHEDULE S - PART 2**

Reinsurance Recoverable on Paid and Unpaid Losses Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domiciliary Jurisdiction	6 Paid Losses	7 Unpaid Losses
0399999. Total Life and Annuity - U.S. Affiliates						
0699999. Total Life and Annuity - Non-U.S. Affiliates						
0799999. Total Life and Annuity - Affiliates						
80659	38-0397420	03/28/2000	Canada Life Assurance Co (CR85)	MI	14,062	
80659	38-0397420	09/24/1999	Canada Life Assurance Co (CRB1)	MI	1,507,116	2,138,868
80659	38-0397420	11/01/2005	Canada Life Assurance Co (CRB4)	MI	105,286	2,233,715
80659	38-0397420	11/23/2007	Canada Life Assurance Co (CRB5)	MI	35,425	500,888
67652	23-2044248	11/01/1999	First Penn-Pacific Life Ins. Co.	IN	11,472	
86258	13-2572994	03/01/1996	General Re Life Corp. (CL30)	CT		124,005
86258	13-2572994	03/01/1996	General Re Life Corp. (CL44)	CT	1,005,935	304,082
86258	13-2572994	09/01/1998	General Re Life Corp. (CL87)	CT		28,890
86258	13-2572994	09/01/1976	General Re Life Corp. (C001)	CT	596,369	399,652
86258	13-2572994	03/07/1994	General Re Life Corp. (C047)	CT	83,325	765,086
86258	13-2572994	03/01/1996	General Re Life Corp. (C061)	CT	315,190	905,875
86258	13-2572994	02/08/1999	General Re Life Corp. (C081)	CT	30,547	279,725
86258	13-2572994	01/01/2005	General Re Life Corp. (C084)	CT	8,971	731,820
86258	13-2572994	07/01/2007	General Re Life Corp. (GRN1)	CT	78,034	53,955
86258	13-2572994	07/15/2008	General Re Life Corp. (GRN3)	CT	13,968	137,843
86258	13-2572994	07/15/2008	General Re Life Corp. (GRN4)	CT	29,462	83,010
86258	13-2572994	11/01/2010	General Re Life Corp. (GRN5)	CT	108,919	52,825
88340	59-2859797	08/05/2011	Hannover Life Reassurance Co of America (HAB5)	FL		8,078
88340	59-2859797	01/01/2012	Hannover Life Reassurance Co of America (HAB7)	FL	13,195	99,946
88340	59-2859797	03/01/2008	Hannover Life Reassurance Co of America (HAE1)	FL	18,667	
88340	59-2859797	04/01/2005	Hannover Life Reassurance Co of America (HAM7)	FL		406,180
88340	59-2859797	11/01/2010	Hannover Life Reassurance Co of America (HAN5)	FL	290,369	105,648
88340	59-2859797	01/01/2011	Hannover Life Reassurance Co of America (HAN6)	FL	29,546	535,773
88340	59-2859797	12/01/2015	Hannover Life Reassurance Co of America (HAS2)	FL		500,000
88340	59-2859797	05/07/2012	Hannover Life Reassurance Co of America (SD96)	FL	898,552	3,390,928
88340	59-2859797	05/23/2005	Hannover Life Reassurance Co of America (STL1)	FL	25,509	
88340	59-2859797	05/23/2005	Hannover Life Reassurance Co of America (STL2)	FL	76,974	45,000
70815	06-0838648	04/01/2005	Hartford Life & Accident Insurance Co. (HTM7)	CT		44,889
65676	35-0472300	09/01/1998	Lincoln National Life Ins. Co. (LI87)	IN		19,283
65676	35-0472300	11/19/2001	Lincoln National Life Ins. Co. (LID1)	IN	86,644	1,544,242
65676	35-0472300	09/01/1982	Lincoln National Life Ins. Co. (LN12)	IN	256,112	87,885
65676	35-0472300	03/29/1993	Lincoln National Life Ins. Co. (LN36)	IN	333,071	380,485
65676	35-0472300	02/08/1999	Lincoln National Life Ins. Co. (LN81)	IN	46,376	279,725
66346	58-0828824	03/28/2000	Munich American Reassurance Co (CA84)	GA	13,457	928,368
66346	58-0828824	07/01/2007	Munich American Reassurance Co (CAN1)	GA		80,934
66346	58-0828824	09/08/1997	Munich American Reassurance Co (CN85)	GA		6,249
66346	58-0828824	09/01/1998	Munich American Reassurance Co (MA87)	GA		28,890
66346	58-0828824	05/01/2001	Munich American Reassurance Co (MA97)	GA		49,995
66346	58-0828824	09/16/1996	Munich American Reassurance Co (MAA1)	GA		54,995
66346	58-0828824	09/24/1999	Munich American Reassurance Co (MAB1)	GA	2,970,149	4,085,484
66346	58-0828824	03/31/2004	Munich American Reassurance Co (MAB2)	GA		13,220
66346	58-0828824	08/23/2004	Munich American Reassurance Co (MAB3)	GA	167,225	2,353,859
66346	58-0828824	11/01/2005	Munich American Reassurance Co (MAB4)	GA		3,909,001
66346	58-0828824	11/23/2007	Munich American Reassurance Co (MAB5)	GA	17,230	1,168,737
66346	58-0828824	05/28/2012	Munich American Reassurance Co (MAE1)	GA	195,838	361,874
66346	58-0828824	05/28/2012	Munich American Reassurance Co (MAE3)	GA		120,956
66346	58-0828824	04/01/2005	Munich American Reassurance Co (MAM7)	GA		391,218
66346	58-0828824	02/08/1999	Munich American Reassurance Co (MUB1)	GA	24,956	279,725
66346	58-0828824	01/01/1999	Munich American Reassurance Co (MUB2)	GA		43,076
66346	58-0828824	03/31/2004	Munich American Reassurance Co (MUB4)	GA	17,942	827,284
66346	58-0828824	05/01/2004	Munich American Reassurance Co (MUJ2)	GA		29,899
66346	58-0828824	05/01/2004	Munich American Reassurance Co (MUJ3)	GA		139,752
66346	58-0828824	05/23/2005	Munich American Reassurance Co (MUL1)	GA	36,000	
66346	58-0828824	05/23/2005	Munich American Reassurance Co (MUL2)	GA		67,500
66346	58-0828824	11/01/2008	Munich American Reassurance Co (MUL3)	GA		64,979
66346	58-0828824	08/30/2010	Munich American Reassurance Co (MUL7)	GA		427,501
66346	58-0828824	08/30/2010	Munich American Reassurance Co (MUL8)	GA	30,493	593,808
66346	58-0828824	07/01/2007	Munich American Reassurance Co (MUN1)	GA		107,910
66346	58-0828824	07/15/2008	Munich American Reassurance Co (MUN3)	GA	33,960	526,542
66346	58-0828824	07/15/2008	Munich American Reassurance Co (MUN4)	GA	44,193	124,514
66346	58-0828824	11/01/2010	Munich American Reassurance Co (MUN5)	GA	41,853	52,824
66346	58-0828824	01/01/2011	Munich American Reassurance Co (MUN6)	GA		722,300
88099	75-1608507	11/23/2007	Optimum Re Insurance Company (OPB5)	TX	24,627	175,040
88099	75-1608507	01/01/2012	Optimum Re Insurance Company (OPB7)	TX	14,086	99,946
93572	43-1235868	03/01/1996	RGA Reinsurance Co. (AL44)	MO	1,045,626	304,082
93572	43-1235868	05/01/2001	RGA Reinsurance Co. (AL97)	MO		50,018
93572	43-1235868	09/16/1996	RGA Reinsurance Co. (ALA1)	MO	32,588	73,304
93572	43-1235868	09/01/2001	RGA Reinsurance Co. (ALB2)	MO	31,845	77,501
93572	43-1235868	11/19/2001	RGA Reinsurance Co. (ALD1)	MO	108,325	1,930,649
93572	43-1235868	03/01/1996	RGA Reinsurance Co. (AZE2)	MO	578,957	905,875
93572	43-1235868	01/01/1999	RGA Reinsurance Co. (AZ82)	MO	3,998	51,753
93572	43-1235868	03/28/2000	RGA Reinsurance Co. (AZ84)	MO	1,206	834,718
93572	43-1235868	09/14/1981	RGA Reinsurance Co. (GA11)	MO	486,633	689,329
93572	43-1235868	01/01/1984	RGA Reinsurance Co. (GA18)	MO	560,467	1,154,552
93572	43-1235868	09/01/1986	RGA Reinsurance Co. (GA24)	MO	637,086	1,359,564
93572	43-1235868	03/29/1993	RGA Reinsurance Co. (GA39)	MO	430,042	304,331
93572	43-1235868	03/29/1993	RGA Reinsurance Co. (GA43)	MO	42,668	
93572	43-1235868	02/08/1999	RGA Reinsurance Co. (GAR1)	MO	14,992	279,725
93572	43-1235868	03/28/2000	RGA Reinsurance Co. (GAR4)	MO	46,027	1,027,931
93572	43-1235868	07/01/2002	RGA Reinsurance Co. (GAE5)	MO	78,693	322,767
93572	43-1235868	05/01/2004	RGA Reinsurance Co. (GAJ2)	MO		11,959
93572	43-1235868	05/01/2004	RGA Reinsurance Co. (GAJ3)	MO		55,900
93572	43-1235868	05/23/2005	RGA Reinsurance Co. (GAL2)	MO	115,462	67,500
93572	43-1235868	05/23/2005	RGA Reinsurance Co. (GAL3)	MO	1,242,788	1,898,690
93572	43-1235868	08/30/2010	RGA Reinsurance Co. (GAL7)	MO		1,140,000
93572	43-1235868	08/30/2010	RGA Reinsurance Co. (GAL8)	MO	2,254,204	3,172,849
93572	43-1235868	07/01/2007	RGA Reinsurance Co. (GAN1)	MO	368,376	161,867
93572	43-1235868	02/24/2014	RGA Reinsurance Co. (GAN3)	MO	17,488	237,442
93572	43-1235868	11/01/2010	RGA Reinsurance Co. (GAN5)	MO	123,231	52,824
93572	43-1235868	06/01/2012	RGA Reinsurance Co. (GAN6)	MO		2,216,546
93572	43-1235868	10/01/1976	RGA Reinsurance Co. (NCO2)	MO	949,412	85,258
93572	43-1235868	03/29/1993	RGA Reinsurance Co. (NC40)	MO	53,344	
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG02G)	MO	947,738	5,561,515
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG03G)	MO	189,482	20,125
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG04G)	MO	1,800,000	528,190
93572	43-1235868	01/01/1983	RGA Reinsurance Co. (RG12)	MO	200,450	173,200
93572	43-1235868	02/14/1983	RGA Reinsurance Co. (RG13)	MO		265,163
93572	43-1235868	09/14/1981	RGA Reinsurance Co. (RG22)	MO		100,000
93572	43-1235868	09/01/1998	RGA Reinsurance Co. (RG87)	MO		38,532
93572	43-1235868	05/01/2001	RGA Reinsurance Co. (RG97)	MO		24,996

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 2**

Reinsurance Recoverable on Paid and Unpaid Losses Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domiciliary Jurisdiction	6 Paid Losses	7 Unpaid Losses
93572	43-1235868	09/16/1996	RGA Reinsurance Co. (RGA1)	MO	24,448	54,995
93572	43-1235868	08/23/2004	RGA Reinsurance Co. (RGB3)	MO	2,634,963	1,961,550
93572	43-1235868	06/01/2008	RGA Reinsurance Co. (RGE5)	MO	55,834	684,004
93572	43-1235868	01/01/2012	RGA Reinsurance Co. (RGB7)	MO	26,391	199,891
93572	43-1235868	11/01/2005	RGA Reinsurance Co. (RGD5)	MO	455,154	
93572	43-1235868	04/01/2005	RGA Reinsurance Co. (RGM7)	MO	300,000	1,692,610
64688	75-6020048	09/01/2001	SCOR Global Life Americas Reins Co (SCB2)	DE	42,952	136,117
64688	75-6020048	08/23/2004	SCOR Global Life Americas Reins Co (SCB3)	DE	83,613	1,176,930
64688	75-6020048	08/05/2011	SCOR Global Life Americas Reins Co (SCB5)	DE		16,155
64688	75-6020048	01/01/2012	SCOR Global Life Americas Reins Co (SCB7)	DE	26,391	199,891
64688	75-6020048	11/01/2010	SCOR Global Life Americas Reins Co (SCN5)	DE	290,369	105,648
64688	75-6020048	01/01/2011	SCOR Global Life Americas Reins Co (SCN6)	DE	20,000	481,533
64688	75-6020048	09/01/1986	SCOR Global Life Americas Reins Co (TA23)	DE	322,686	679,783
64688	75-6020048	11/01/1986	SCOR Global Life Americas Reins Co (TA25)	DE	234,339	371,071
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL7)	DE		284,999
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL8)	DE	968,355	1,187,616
64688	75-6020048	07/15/2008	SCOR Global Life Americas Reins Co (TAN3)	DE	514,565	439,572
64688	75-6020048	07/15/2008	SCOR Global Life Americas Reins Co (TAN4)	DE	56,573	83,010
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR63)	DE		551,500
87017	62-1003368	09/16/1996	SCOR Global Life Reins Co of Delaware (GG70)	DE	24,998	
87017	62-1003368	09/24/1999	SCOR Global Life Reins Co of Delaware (GGB1)	DE	1,529,415	2,138,876
87017	62-1003368	09/01/2001	SCOR Global Life Reins Co of Delaware (GGB2)	DE	28,623	21,854
87017	62-1003368	11/19/2001	SCOR Global Life Reins Co of Delaware (GGD1)	DE	43,322	772,120
87017	62-1003368	10/01/2001	SCOR Global Life Reins Co of Delaware (GGE1)	DE		377,392
97071	13-3126819	05/01/2001	SCOR Global Life USA Reins Co (BA97)	DE		24,998
97071	13-3126819	03/28/2000	SCOR Global Life USA Reins Co (BM84)	DE	40,984	928,367
97071	13-3126819	11/01/2005	SCOR Global Life USA Reins Co (GIB4)	DE	41,838	1,675,286
97071	13-3126819	11/23/2007	SCOR Global Life USA Reins Co (GIB5)	DE	7,384	525,121
97071	13-3126819	01/01/2012	SCOR Global Life USA Reins Co (GIB7)	DE	39,587	299,837
97071	13-3126819	11/01/2005	SCOR Global Life USA Reins Co (GID5)	DE	341,366	
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL7)	DE	6,084	712,500
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL8)	DE	312,500	398,809
97071	13-3126819	07/01/2007	SCOR Global Life USA Reins Co (GIN1)	DE	232,080	80,934
97071	13-3126819	07/15/2008	SCOR Global Life USA Reins Co (GIN3)	DE	254,670	421,234
97071	13-3126819	07/15/2008	SCOR Global Life USA Reins Co (GIN4)	DE	295,360	83,010
97071	13-3126819	11/01/2010	SCOR Global Life USA Reins Co (GIN5)	DE	290,369	105,648
97071	13-3126819	01/01/2011	SCOR Global Life USA Reins Co (GIN6)	DE	25,000	601,917
87572	23-2038295	11/01/2005	Scottish Re (U.S.), Inc. (STB4)	DE		200,000
68713	84-0499703	11/01/1990	Security Life of Denver Ins. Co. (SD33)	CO	1,070,683	1,936,257
68713	84-0499703	07/01/1992	Security Life of Denver Ins. Co. (SD35)	CO		261,176
68713	84-0499703	03/29/1993	Security Life of Denver Ins. Co. (SD37)	CO	558,089	380,485
68713	84-0499703	03/29/1993	Security Life of Denver Ins. Co. (SD41)	CO	53,344	
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD63)	CO	474,202	905,874
68713	84-0499703	09/16/1996	Security Life of Denver Ins. Co. (SD73)	CO	37,506	
68713	84-0499703	06/15/1999	Security Life of Denver Ins. Co. (SD83)	CO	519,074	1,107,458
68713	84-0499703	10/01/2001	Security Life of Denver Ins. Co. (SDE1)	CO	182,538	1,568,359
68713	84-0499703	10/01/2001	Security Life of Denver Ins. Co. (SDE3)	CO		31,245
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ2)	CO		53,818
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ3)	CO		251,553
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SL44)	CO	1,011,869	304,082
68713	84-0499703	09/01/1998	Security Life of Denver Ins. Co. (SL87)	CO		19,283
68713	84-0499703	05/01/2001	Security Life of Denver Ins. Co. (SL97)	CO		24,998
68713	84-0499703	09/16/1996	Security Life of Denver Ins. Co. (SLA1)	CO	32,588	73,304
82627	06-0839705	09/08/1997	Swiss Re Life & Health America Inc. (LF85)	MO	8	8,329
82627	06-0839705	08/01/1984	Swiss Re Life & Health America Inc. (LF88)	MO	8,465	
82627	06-0839705	10/01/1981	Swiss Re Life & Health America Inc. (LR10)	MO		624,750
82627	06-0839705	01/01/1984	Swiss Re Life & Health America Inc. (LR17)	MO	4,554	
82627	06-0839705	03/29/1993	Swiss Re Life & Health America Inc. (LR38)	MO	266,409	304,331
82627	06-0839705	03/29/1993	Swiss Re Life & Health America Inc. (LR42)	MO	42,668	
82627	06-0839705	03/01/1996	Swiss Re Life & Health America Inc. (N044)	MO	1,002,968	304,082
82627	06-0839705	02/01/1994	Swiss Re Life & Health America Inc. (N045)	MO		60,206
82627	06-0839705	09/08/1997	Swiss Re Life & Health America Inc. (N085)	MO	6	6,249
82627	06-0839705	05/01/2001	Swiss Re Life & Health America Inc. (N097)	MO		49,995
82627	06-0839705	09/16/1996	Swiss Re Life & Health America Inc. (NOA1)	MO		73,304
82627	06-0839705	09/01/2001	Swiss Re Life & Health America Inc. (NOB2)	MO	108,587	408,281
82627	06-0839705	11/19/2001	Swiss Re Life & Health America Inc. (NOD1)	MO	43,322	772,120
82627	06-0839705	09/01/1982	Swiss Re Life & Health America Inc. (NR13)	MO		57,559
82627	06-0839705	03/01/1996	Swiss Re Life & Health America Inc. (SR60)	MO	193,378	905,875
82627	06-0839705	01/01/2000	Swiss Re Life & Health America Inc. (SR84)	MO	12,561	834,718
82627	06-0839705	06/12/2012	Swiss Re Life & Health America Inc. (SRB2)	MO	24,130	40,330
82627	06-0839705	08/05/2011	Swiss Re Life & Health America Inc. (SRB5)	MO		8,078
82627	06-0839705	01/01/2012	Swiss Re Life & Health America Inc. (SRB7)	MO	13,195	99,946
82627	06-0839705	06/12/2012	Swiss Re Life & Health America Inc. (SRD1)	MO	108,316	1,930,494
82627	06-0839705	10/01/2001	Swiss Re Life & Health America Inc. (SRE1)	MO		231,477
82627	06-0839705	05/28/2012	Swiss Re Life & Health America Inc. (SRE1)	MO		533,456
82627	06-0839705	05/28/2012	Swiss Re Life & Health America Inc. (SRE3)	MO		120,956
82627	06-0839705	05/23/2005	Swiss Re Life & Health America Inc. (SRL1)	MO	105,018	
82627	06-0839705	05/23/2005	Swiss Re Life & Health America Inc. (SRL2)	MO	38,487	22,500
82627	06-0839705	05/23/2005	Swiss Re Life & Health America Inc. (SRL3)	MO	1,233,006	1,609,793
82627	06-0839705	11/01/2006	Swiss Re Life & Health America Inc. (SRL5)	MO	555,307	1,999,370
82627	06-0839705	08/30/2010	Swiss Re Life & Health America Inc. (SRL6)	MO	2,526	
82627	06-0839705	08/30/2010	Swiss Re Life & Health America Inc. (SRL8)	MO	340,986	3,580,465
82627	06-0839705	04/01/2005	Swiss Re Life & Health America Inc. (SRM7)	MO		589,956
82627	06-0839705	12/01/2015	Swiss Re Life & Health America Inc. (SRS2)	MO		500,000
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ2)	NY		11,959
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ3)	NY		55,900
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL2)	NY	38,487	22,500
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL3)	NY	751,365	442,186
70688	36-6071399	07/15/2008	Transamerica Financial Life Ins. Co. (TAN3)	NY		132,916
0899999. Life and Annuity - U.S. Non-Affiliates					40,416,088	102,138,087
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (ST84)	CYM	26,400	93,176
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (STB1)	CYM	12,786	
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (STB2)	CYM		26,387
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (STB3)	CYM	1,114,022	1,379,584
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (STB4)	CYM	48,283	1,055,470
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co (Cayman) Ltd (STM2)	CYM	1,000	
0999999. Life and Annuity - Non-U.S. Non-Affiliates					1,202,491	2,554,617
1099999. Total Life and Annuity - Non-Affiliates					41,618,579	104,692,704
1199999. Total Life and Annuity					41,618,579	104,692,704
1499999. Total Accident and Health - U.S. Affiliates						
1799999. Total Accident and Health - Non-U.S. Affiliates						
1899999. Total Accident and Health - Affiliates						
68276	48-1024691	06/01/2000	Employers Reassurance Corp. (ER03)	KS		3,278,537

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 2**

Reinsurance Recoverable on Paid and Unpaid Losses Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domiciliary Jurisdiction	6 Paid Losses	7 Unpaid Losses
91898	86-0388413	01/01/2008	LifeCare Assurance Company	AZ	45,484	20,632
80314	52-0913817	12/31/1994	UniCAPRE Life & Health Insurance Co. (UN02)	IN		50,000
39845	48-0921045	01/01/1993	Westport Insurance Corporation (ER01)	MO		710,031
1999999. Accident and Health - U.S. Non-Affiliates					45,484	4,059,200
2199999. Total Accident and Health - Non-Affiliates					45,484	4,059,200
2299999. Total Accident and Health					45,484	4,059,200
2399999. Total U.S. (Sum of 0399999, 0899999, 1499999 and 1999999)					40,461,572	106,197,287
2499999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999 and 2099999)					1,202,491	2,554,617
9999999 Totals - Life, Annuity and Accident and Health					41,664,063	108,751,904

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
0399999. Total General Account - Authorized U.S. Affiliates														
0699999. Total General Account - Authorized Non-U.S. Affiliates														
0799999. Total General Account - Authorized Affiliates														
80659	38-0397420	08/01/1985	Canada Life Assurance Co. (CR22)	MI	YRT/I	QL	145,651	4,680	4,456	7,504				
80659	38-0397420	03/01/1996	Canada Life Assurance Co. (CR57)	MI	YRT/I	QL	55,387,509	118,675	116,160	96,136				
80659	38-0397420	09/01/1984	Canada Life Assurance Co. (CR82)	MI	YRT/G	QL	18,180,696	1,047,197	1,013,445	1,546,162				
80659	38-0397420	09/01/1984	Canada Life Assurance Co. (CR82)	MI	YRT/I	QL	175,322	4,786	4,684	7,554				
80659	38-0397420	03/01/1996	Canada Life Assurance Co. (CR83)	MI	YRT/I	QL	12,117,466	60,409	54,243	28,720				
80659	38-0397420	03/28/2000	Canada Life Assurance Co. (CR85)	MI	YRT/I	QL	120,433,591	933,942	919,912	496,176				
80659	38-0397420	09/24/1999	Canada Life Assurance Co. (CRB1)	MI	YRT/I	QL	455,269,754	7,824,776	8,146,021	4,011,045				
80659	38-0397420	11/01/2005	Canada Life Assurance Co. (CRB4)	MI	YRT/I	QL	437,513,764	11,655,112	10,793,028	10,784,646				
80659	38-0397420	11/23/2007	Canada Life Assurance Co. (CRB5)	MI	YRT/I	QL	387,563,055	3,108,394	2,889,293	2,250,402				
80659	38-0397420	08/01/2008	Canada Life Assurance Co. (CRB6)	MI	YRT/I	QL	31,400,907	130,939	119,540	74,031				
80659	38-0397420	09/01/1999	Canada Life Assurance Co. (CRC1)	MI	YRT/I	QL	450,113	3,862	3,562	1,770				
80659	38-0397420	05/01/2004	Canada Life Assurance Co. (CRP3)	MI	YRT/I	QL	48,551,205	419,736	359,025	136,710				
80659	38-0397420	11/01/2005	Canada Life Assurance Co. (CRD5)	MI	YRT/I	QL	592,747,148	2,628,006	2,203,685	1,283,058				
80659	38-0397420	01/01/2009	Canada Life Assurance Co. (CRE4)	MI	YRT/I	QL	406,726	1,977	1,774	857				
80659	38-0397420	08/01/2008	Canada Life Assurance Co. (CRH2)	MI	YRT/I	QL	95,825,195	112,605	87,502	49,978				
80659	38-0397420	09/01/2003	Canada Life Assurance Co. (CRI1)	MI	YRT/I	QL	5,381,787	212,038	193,020	111,941				
80659	38-0397420	07/15/2008	Canada Life Assurance Co. (CRN2)	MI	YRT/I	QL	563,146,961	1,255,074	941,814	593,805				
80659	38-0397420	07/01/2012	Canada Life Assurance Co. (CRPE)	MI	YRT/I	QL	257,497,504	428,536	158,661	150,574				
67652	23-2044248	11/01/1999	First Penn-Pacific Life Ins. Co. (FP86)	IN	MCO/I	QL	42,260,404						34,431,325	
86258	13-2572994	05/01/1994	General Re Life Corp. (CL29)	CT	YRT/I	QL	83,932,770	584,077	522,709	304,067				
86258	13-2572994	03/01/1996	General Re Life Corp. (CL30)	CT	YRT/I	QL	146,519,536	2,040,164	1,894,435	1,757,321				
86258	13-2572994	07/01/1972	General Re Life Corp. (CL31)	CT	YRT/G	QL	143,887	7,686	7,372	11,014				
86258	13-2572994	07/01/1972	General Re Life Corp. (CL31)	CT	YRT/I	QL	12,253,668	491,355	505,888	872,672				
86258	13-2572994	01/19/2005	General Re Life Corp. (CL43)	CT	YRT/I	QL	814,188	76	62	98				
86258	13-2572994	03/01/1996	General Re Life Corp. (CL44)	CT	YRT/I	QL	137,054,465	2,506,725	2,691,452	1,952,570				
86258	13-2572994	09/01/1998	General Re Life Corp. (CL87)	CT	YRT/I	QL	117,290,087	770,679	750,119	429,825				
86258	13-2572994	03/31/2004	General Re Life Corp. (CLD2)	CT	YRT/I	QL	3,203,023	8,299	6,886	1,135				
86258	13-2572994	05/01/2004	General Re Life Corp. (CLD3)	CT	YRT/I	QL	8,039,804	60,337	51,395	15,201				
86258	13-2572994	03/31/2003	General Re Life Corp. (CLH1)	CT	YRT/I	QL	79,709,746	1,806,585	1,688,481	781,760				
86258	13-2572994	09/01/1976	General Re Life Corp. (C001)	CT	YRT/G	QL	973,508	38,013	34,097	64,903				
86258	13-2572994	09/01/1976	General Re Life Corp. (C001)	CT	YRT/I	QL	427,155,230	6,881,650	7,293,972	9,093,495				
86258	13-2572994	03/07/1994	General Re Life Corp. (C047)	CT	YRT/I	QL	42,519,044	660,055	745,207	740,480				
86258	13-2572994	05/01/1994	General Re Life Corp. (C050)	CT	YRT/I	QL	180,885,279	1,561,807	1,537,607	1,039,759				
86258	13-2572994	03/01/1996	General Re Life Corp. (C061)	CT	YRT/G	QL	25,250,947	308,963	326,627	316,027				
86258	13-2572994	03/01/1996	General Re Life Corp. (C061)	CT	YRT/I	QL	475,599,985	3,852,038	3,774,661	4,051,268				
86258	13-2572994	01/19/2005	General Re Life Corp. (C066)	CT	YRT/I	QL	12,183,266	36,421	29,605	15,670				
86258	13-2572994	09/16/1996	General Re Life Corp. (C071)	CT	YRT/I	QL	265,366,596	1,398,091	1,409,461	875,449				
86258	13-2572994	02/08/1999	General Re Life Corp. (C081)	CT	YRT/I	QL	50,782,607	369,746	357,889	233,527				
86258	13-2572994	01/01/2005	General Re Life Corp. (C084)	CT	YRT/I	QL	789,249,531	2,546,519	2,491,691	1,449,911				
86258	13-2572994	09/01/1999	General Re Life Corp. (C0C1)	CT	YRT/I	QL	450,113	3,862	3,562	2,074				
86258	13-2572994	07/01/2007	General Re Life Corp. (GRN1)	CT	YRT/I	QL	993,724,324	2,051,381	2,019,854	1,553,333				
86258	13-2572994	07/15/2008	General Re Life Corp. (GRN2)	CT	YRT/I	QL	457,807,649	934,496	725,310	498,308				
86258	13-2572994	07/15/2008	General Re Life Corp. (GRN3)	CT	YRT/I	QL	1,474,820,758	1,257,308	1,252,533	945,705				
86258	13-2572994	07/15/2008	General Re Life Corp. (GRN4)	CT	YRT/I	QL	3,768,413,622	5,667,211	4,149,755	2,576,894				
86258	13-2572994	11/01/2010	General Re Life Corp. (GRN5)	CT	YRT/I	QL	1,391,524,744	1,238,130	932,859	516,378				
86258	13-2572994	05/14/2014	General Re Life Corp. (GRN6)	CT	YRT/I	QL	1,246,049	3,971	3,819	3,655				
86258	13-2572994	09/01/1976	General Re Life Corp. (GRPA)	CT	YRT/I	QL	42,620,010	61,398	42,259	25,710				
88340	59-2859797	03/01/1981	Hannover Life Reassurance (HA96)	FL	YRT/I	QL	289,151	9,719	9,327	13,154				
88340	59-2859797	08/05/2011	Hannover Life Reassurance (HAB5)	FL	YRT/I	QL	52,424,066	346,096	330,820	166,559				
88340	59-2859797	01/01/2012	Hannover Life Reassurance (HAB7)	FL	YRT/I	QL	116,774,866	893,175	825,366	324,447				
88340	59-2859797	08/05/2011	Hannover Life Reassurance (HAD5)	FL	YRT/I	QL	51,718,455	159,534	128,617	49,838				
88340	59-2859797	01/01/2012	Hannover Life Reassurance (HAD6)	FL	YRT/I	QL	143,222,202	149,566	131,136	48,222				
88340	59-2859797	03/01/2008	Hannover Life Reassurance (HAE1)	FL	YRT/G	QL	290,344,262	928,801	869,045	564,566				

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
88340	59-2859797	03/01/2008	Hannover Life Reassurance (HAE2)	FL	YRT/G	QL	343,429	2,681	2,545	1,750				
88340	59-2859797	03/01/2008	Hannover Life Reassurance (HAE3)	FL	YRT/G	QL	53,526,315	149,858	140,079	88,651				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM2)	FL	YRT/G	QL	2,269,320	710	754	6,484				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM3)	FL	YRT/G	QL	6,289,120	1,119	1,148	9,506				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM3)	FL	YRT/I	QL	717,245		576	503				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM4)	FL	YRT/G	QL	1,501,360	274	269	2,217				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM4)	FL	YRT/I	QL	22,522		32	31				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM5)	FL	YRT/G	QL	4,716,459	1,082	1,017	9,191				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM5)	FL	YRT/I	QL	810,436	2,097	1,925	2,038				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM6)	FL	YRT/G	QL	174,000	73	66	652				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM7)	FL	YRT/G	QL	205,217,018	54,407	54,249	480,254				
88340	59-2859797	04/01/2005	Hannover Life Reassurance (HAM8)	FL	YRT/G	QL	4,999,338	1,947	2,160	21,188				
88340	59-2859797	04/01/2010	Hannover Life Reassurance (HAM9)	FL	YRT/G	QL	21,944,976	2,711	2,804	26,413				
88340	59-2859797	11/01/2010	Hannover Life Reassurance (HAN5)	FL	YRT/I	QL	2,795,055,290	2,478,443	1,837,602	947,578				
88340	59-2859797	01/01/2011	Hannover Life Reassurance (HAN6)	FL	YRT/I	QL	3,949,645,839	6,723,008	5,280,533	2,610,564				
88340	59-2859797	01/01/2012	Hannover Life Reassurance (HAN7)	FL	YRT/I	QL	270,976,608	476,571	318,785	144,079				
88340	59-2859797	07/01/2012	Hannover Life Reassurance (HAPG)	FL	YRT/I	QL	186,008,964	319,999	238,553	155,912				
88340	59-2859797	08/08/2016	Hannover Life Reassurance (HAQ0)	FL	CO/I	XXXL	6,507,750	5,387		6,111				
88340	59-2859797	12/01/2015	Hannover Life Reassurance (HAS2)	FL	YRT/G	QL	89,384,237	20,326		83,770				
88340	59-2859797	05/07/2012	Hannover Life Reassurance (SD96)	FL	CO/I	XXXL	16,110,142,317	411,751,752	427,773,985	23,900,938				
88340	59-2859797	05/07/2012	Hannover Life Reassurance (SD96)	FL	YRT/I	QL	1,242,279,830	4,523,857	4,153,739	2,932,690				
88340	59-2859797	05/23/2005	Hannover Life Reassurance (STL1)	FL	CO/I	XXXL	32,220,958	133,554	197,789	270,717				
88340	59-2859797	05/23/2005	Hannover Life Reassurance (STL1)	FL	YRT/I	QL	49,790,059	524,661	475,840	317,205				
88340	59-2859797	05/23/2005	Hannover Life Reassurance (STL2)	FL	CO/I	XXXL	159,075,466	451,060	1,022,755	424,786				
88340	59-2859797	05/23/2005	Hannover Life Reassurance (STL2)	FL	YRT/I	QL	67,306,305	253,572	216,057	191,406				
93440	06-1041332	07/15/1994	HM Life Insurance Co. (GL49)	PA	YRT/I	QL	286,025	6,853	6,587	13,972				
93440	06-1041332	03/31/1997	HM Life Insurance Co. (TG67)	PA	YRT/I	QL	1,282,051	43,328	46,019	74,519				
65676	35-0472300	12/01/1964	Lincoln National Life Ins. Co. (LI51)	IN	YRT/I	QL	4,700,518	372,172	354,795	661,331				
65676	35-0472300	01/05/1983	Lincoln National Life Ins. Co. (LI54)	IN	YRT/I	QL	34,723,185	536,963	500,514	252,288				
65676	35-0472300	09/01/1998	Lincoln National Life Ins. Co. (LI87)	IN	YRT/I	QL	78,286,728	514,421	500,845	284,154				
65676	35-0472300	11/19/2001	Lincoln National Life Ins. Co. (LID1)	IN	YRT/I	QL	289,811,810	4,462,688	4,024,575	1,167,176				
65676	35-0472300	06/01/1937	Lincoln National Life Ins. Co. (LN03)	IN	MCO/I	QL	11,821,561			229,696			9,088,494	
65676	35-0472300	06/01/1937	Lincoln National Life Ins. Co. (LN04)	IN	MCO/I	QL	7,119,814			145,803			4,886,668	
65676	35-0472300	09/01/1982	Lincoln National Life Ins. Co. (LN12)	IN	YRT/I	QL	10,505,879	442,709	473,412	586,643				
65676	35-0472300	01/05/1983	Lincoln National Life Ins. Co. (LN16)	IN	YRT/G	QL	9,396,163	111,345	100,887	(7,267)				
65676	35-0472300	01/05/1983	Lincoln National Life Ins. Co. (LN16)	IN	YRT/I	QL	134,188,703	3,207,161	3,301,287	3,358,820				
65676	35-0472300	03/29/1993	Lincoln National Life Ins. Co. (LN36)	IN	YRT/I	QL	566,208,187	3,824,459	3,811,642	3,132,990				
65676	35-0472300	09/16/1996	Lincoln National Life Ins. Co. (LN72)	IN	YRT/I	QL	176,868,904	931,318	938,893	621,507				
65676	35-0472300	02/08/1999	Lincoln National Life Ins. Co. (LN81)	IN	YRT/I	QL	77,096,623	561,323	543,301	350,203				
65676	35-0472300	03/28/2000	Lincoln National Life Ins. Co. (LN85)	IN	YRT/I	QL	175,635,943	1,667,400	1,651,784	903,328				
65676	35-0472300	09/01/1999	Lincoln National Life Ins. Co. (LNC1)	IN	YRT/I	QL	450,113	3,862	3,562	1,715				
66346	58-0828824	01/01/1988	Munich American Reassurance (CA26)	GA	YRT/G	QL	777,288	18,326	17,097	19,326				
66346	58-0828824	01/01/1988	Munich American Reassurance (CA26)	GA	YRT/I	QL	230,872,915	1,962,390	1,954,795	2,369,802				
66346	58-0828824	05/01/1994	Munich American Reassurance (CA48)	GA	YRT/I	QL	260,006,424	1,298,404	1,309,910	741,004				
66346	58-0828824	03/01/1996	Munich American Reassurance (CA65)	GA	YRT/I	QL	67,961,350	460,449	418,313	306,217				
66346	58-0828824	09/16/1996	Munich American Reassurance (CA69)	GA	YRT/I	QL	353,697,486	1,863,247	1,878,489	1,158,127				
66346	58-0828824	09/08/1997	Munich American Reassurance (CA76)	GA	YRT/I	QL	106,676,218	750,206	741,713	442,159				
66346	58-0828824	03/28/2000	Munich American Reassurance (CA84)	GA	YRT/I	QL	1,856,464,990	6,678,289	6,509,243	3,531,086				
66346	58-0828824	03/28/2000	Munich American Reassurance (CA85)	GA	YRT/I	QL	180,667,516	1,401,073	1,380,043	746,085				
66346	58-0828824	07/01/2007	Munich American Reassurance (CAN1)	GA	YRT/I	QL	1,490,568,521	3,077,349	3,030,003	2,274,259				
66346	58-0828824	05/01/1994	Munich American Reassurance (CN40)	GA	YRT/I	QL	198,355,024	1,109,684	1,047,996	432,002				
66346	58-0828824	11/01/1980	Munich American Reassurance (CN41)	GA	YRT/G	QL	400,198	10,266	9,643	15,439				
66346	58-0828824	11/01/1980	Munich American Reassurance (CN41)	GA	YRT/I	QL	23,396,414	518,645	545,572	744,612				
66346	58-0828824	01/01/1988	Munich American Reassurance (CN42)	GA	YRT/I	QL	94,899,299	970,954	886,637	772,253				
66346	58-0828824	03/01/1996	Munich American Reassurance (CN43)	GA	YRT/I	QL	10,801,184	157,880	140,530	76,736				
66346	58-0828824	09/08/1997	Munich American Reassurance (CN85)	GA	YRT/I	QL	26,158,459	254,737	239,504	172,563				

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Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
66346	58-0828824	05/01/2001	Munich American Reassurance (CN97)	GA	YRT/I	QL	36,349,404	224,563	215,065		115,049			
66346	58-0828824	09/01/1998	Munich American Reassurance (MA87)	GA	YRT/I	QL	117,290,252	770,683	750,312		398,219			
66346	58-0828824	10/01/1994	Munich American Reassurance (MA91)	GA	YRT/I	QL	80,992,652	644,073	583,095		349,538			
66346	58-0828824	10/01/1981	Munich American Reassurance (MA92)	GA	YRT/I	QL	292,595	8,812	8,425		11,186			
66346	58-0828824	05/01/2001	Munich American Reassurance (MA97)	GA	YRT/I	QL	900,039,669	3,413,486	3,382,839		1,739,349			
66346	58-0828824	09/16/1996	Munich American Reassurance (MAA1)	GA	YRT/I	QL	74,647,125	533,805	525,387		233,925			
66346	58-0828824	04/01/1997	Munich American Reassurance (MAA7)	GA	YRT/I	QL	472,762	5,643	5,245		2,451			
66346	58-0828824	09/24/1999	Munich American Reassurance (MAB1)	GA	YRT/I	QL	910,548,221	15,643,160	16,292,473		7,743,271			
66346	58-0828824	03/31/2004	Munich American Reassurance (MAB2)	GA	YRT/I	QL	67,634,247	2,066,796	1,904,127		1,248,233			
66346	58-0828824	08/23/2004	Munich American Reassurance (MAB3)	GA	YRT/I	QL	345,097,051	13,097,723	12,666,351		6,855,124			
66346	58-0828824	11/01/2005	Munich American Reassurance (MAB4)	GA	YRT/I	QL	765,649,165	20,396,390	18,887,727		15,477,029			
66346	58-0828824	11/23/2007	Munich American Reassurance (MAB5)	GA	YRT/I	QL	904,312,781	7,252,706	6,741,592		4,227,455			
66346	58-0828824	08/01/2008	Munich American Reassurance (MAB6)	GA	YRT/I	QL	31,400,900	130,939	119,540		71,555			
66346	58-0828824	03/31/2004	Munich American Reassurance (MAD1)	GA	YRT/I	QL	339,909,450	3,780,259	3,494,562		780,739			
66346	58-0828824	09/01/2002	Munich American Reassurance (MAD2)	GA	YRT/I	QL	38,535,102	289,670	252,812		65,080			
66346	58-0828824	05/01/2004	Munich American Reassurance (MAD3)	GA	YRT/I	QL	97,102,407	839,466	718,062		169,232			
66346	58-0828824	08/23/2004	Munich American Reassurance (MAD4)	GA	YRT/I	QL	51,572,174	120,465	103,224		37,165			
66346	58-0828824	11/01/2005	Munich American Reassurance (MAD5)	GA	YRT/I	QL	1,037,307,522	4,599,010	3,856,455		1,575,827			
66346	58-0828824	03/01/2008	Munich American Reassurance (MAE1)	GA	YRT/G	QL	697,021,293	2,229,232	2,085,944		1,246,897			
66346	58-0828824	05/28/2012	Munich American Reassurance (MAE1B)	GA	YRT/G	QL	2,263,111,321	4,772,517	3,439,194		2,072,781			
66346	58-0828824	03/01/2008	Munich American Reassurance (MAE2)	GA	YRT/G	QL	824,231	6,434	6,109		3,720			
66346	58-0828824	05/28/2012	Munich American Reassurance (MAE2B)	GA	YRT/G	QL	5,404,521	18,183	16,958		8,325			
66346	58-0828824	03/01/2008	Munich American Reassurance (MAE3)	GA	YRT/G	QL	128,463,149	359,641	336,199		192,415			
66346	58-0828824	05/28/2012	Munich American Reassurance (MAE3B)	GA	YRT/G	QL	414,696,008	871,527	678,533		358,170			
66346	58-0828824	08/01/2008	Munich American Reassurance (MAH2)	GA	YRT/I	QL	73,868,939	88,378	69,200		38,393			
66346	58-0828824	09/01/2003	Munich American Reassurance (MA11)	GA	YRT/I	QL	6,727,797	265,059	241,286		129,526			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM2)	GA	YRT/G	QL	1,701,990	535	566		5,153			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM3)	GA	YRT/G	QL	4,726,840	848	867		7,612			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM3)	GA	YRT/I	QL	537,933	434	403		398			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM4)	GA	YRT/G	QL	1,126,020	203	202		1,762			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM4)	GA	YRT/I	QL	16,892	25	25		25			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM5)	GA	YRT/G	QL	3,537,345	807	761		7,319			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM5)	GA	YRT/I	QL	607,827	1,570	1,441		1,616			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM6)	GA	YRT/G	QL	130,500	55	51		518			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM7)	GA	YRT/G	QL	239,814,901	60,231	60,237		639,374			
66346	58-0828824	04/01/2005	Munich American Reassurance (MAM8)	GA	YRT/G	QL	4,999,342	1,947	2,160		23,442			
66346	58-0828824	04/01/2010	Munich American Reassurance (MAM9)	GA	YRT/G	QL	21,944,922	2,711	2,804		37,771			
66346	58-0828824	03/27/1979	Munich American Reassurance (MU09)	GA	YRT/I	QL	1,835,581	46,300	46,087		72,136			
66346	58-0828824	10/01/1994	Munich American Reassurance (MU53)	GA	YRT/G	QL	4,698,081	55,672	50,444		(3,645)			
66346	58-0828824	10/01/1994	Munich American Reassurance (MU53)	GA	YRT/I	QL	90,489,452	240,589	379,277		182,451			
66346	58-0828824	02/08/1999	Munich American Reassurance (MU81)	GA	YRT/I	QL	128,340,576	934,415	904,440		543,341			
66346	58-0828824	01/01/1999	Munich American Reassurance (MU82)	GA	YRT/I	QL	34,231,664	468,485	433,455		296,180			
66346	58-0828824	03/31/2004	Munich American Reassurance (MU84)	GA	YRT/I	QL	1,806,987,987	5,917,899	5,843,952		3,157,335			
66346	58-0828824	03/31/2004	Munich American Reassurance (MU85)	GA	YRT/I	QL	164,369,321	1,096,985	1,071,687		560,035			
66346	58-0828824	09/01/1999	Munich American Reassurance (MUC1)	GA	YRT/I	QL	450,113	3,862	3,562		2,157			
66346	58-0828824	07/01/2002	Munich American Reassurance (MUJ4)	GA	YRT/I	QL	96,045,586	717,865	824,608		320,595			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ1)	GA	CO/I	XXXL	21,256,022	92,028	121,862		100,524			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ1)	GA	YRT/I	QL	31,284,185	188,138	174,816		110,877			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ2)	GA	CO/I	XXXL	26,856,864	103,123	115,210		127,162			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ2)	GA	YRT/I	QL	35,944,346	135,706	130,930		99,862			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ3)	GA	CO/I	XXXL	293,313,817	6,663,138	6,635,327		569,284			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ3)	GA	YRT/I	QL	31,141,588	74,870	70,945		53,269			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ4)	GA	CO/I	XXXL	73,370,819	4,881,423	4,572,691		148,914			
66346	58-0828824	05/01/2004	Munich American Reassurance (MUJ4)	GA	YRT/I	QL	13,644,204	17,457	16,499		11,049			
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ5)	GA	CO/I	XXXL	8,731,711	13,650	15,641		42,272			
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ5)	GA	YRT/I	QL	8,453,689	27,845	28,679		17,541			

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1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ6)	GA	CO/I	XXXL	10,401,614	15,883	27,656	40,034				
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ6)	GA	YRT/I	QL	15,281,789	53,970	54,176	39,968				
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ7)	GA	CO/I	XXXL	119,958,505	2,546,771	2,537,710	232,375				
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ7)	GA	YRT/I	QL	15,323,784	33,522	30,711	22,531				
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ8)	GA	CO/I	XXXL	32,546,073	1,636,688	1,511,363	64,585				
66346	58-0828824	01/01/2005	Munich American Reassurance (MUJ8)	GA	YRT/I	QL	4,786,512	5,188	5,010	3,378				
66346	58-0828824	05/23/2005	Munich American Reassurance (MUL1)	GA	CO/I	XXXL	173,128,106	568,535	767,063	982,823				
66346	58-0828824	05/23/2005	Munich American Reassurance (MUL1)	GA	YRT/I	QL	167,000,504	1,600,235	1,466,867	871,510				
66346	58-0828824	05/23/2005	Munich American Reassurance (MUL2)	GA	CO/I	XXXL	869,521,241	4,163,895	5,775,858	2,033,481				
66346	58-0828824	05/23/2005	Munich American Reassurance (MUL2)	GA	YRT/I	QL	165,025,910	585,632	471,279	368,786				
66346	58-0828824	11/01/2008	Munich American Reassurance (MUL3)	GA	CO/I	XXXL	865,330,560	13,116,114	12,023,407	1,351,149				
66346	58-0828824	11/01/2008	Munich American Reassurance (MUL3)	GA	YRT/I	QL	46,277,663	70,395	61,301	44,621				
66346	58-0828824	04/28/2011	Munich American Reassurance (MUL6)	GA	CO/I	XXXL	4,319,409,548	5,525,996	4,976,139	4,705,060				
66346	58-0828824	04/28/2011	Munich American Reassurance (MUL6)	GA	YRT/I	QL	382,379,786	642,389	516,898	316,020				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUL7)	GA	CO/I	XXXL	2,373,475,507	12,952,992	11,754,903	4,366,541				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUL7)	GA	YRT/I	QL	152,416,933	305,094	258,563	170,732				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUL8)	GA	CO/I	XXXL	6,055,334,398	25,008,258	17,096,099	7,864,099				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUL8)	GA	YRT/I	QL	159,294,770	176,574	115,586	98,090				
66346	58-0828824	07/01/2007	Munich American Reassurance (MUN1)	GA	YRT/I	QL	1,987,415,368	4,103,338	4,040,292	2,688,216				
66346	58-0828824	07/15/2008	Munich American Reassurance (MUN2)	GA	YRT/I	QL	1,074,577,883	2,277,724	1,775,331	1,134,177				
66346	58-0828824	07/15/2008	Munich American Reassurance (MUN3)	GA	YRT/I	QL	5,109,231,369	3,815,817	3,187,690	2,178,264				
66346	58-0828824	07/15/2008	Munich American Reassurance (MUN4)	GA	YRT/I	QL	5,963,684,844	9,081,577	6,692,470	3,890,083				
66346	58-0828824	11/01/2010	Munich American Reassurance (MUN5)	GA	YRT/I	QL	1,442,417,307	1,306,397	906,123	404,028				
66346	58-0828824	01/01/2011	Munich American Reassurance (MUN6)	GA	YRT/I	QL	7,939,975,685	13,284,881	10,254,980	5,297,386				
66346	58-0828824	01/01/2012	Munich American Reassurance (MUN7)	GA	YRT/I	QL	544,157,592	963,792	635,728	303,058				
66346	58-0828824	07/01/2012	Munich American Reassurance (MUPC)	GA	YRT/I	QL	244,847,567	500,006	340,614	160,133				
66346	58-0828824	08/08/2016	Munich American Reassurance (MUQ0)	GA	CO/I	XXXL	13,015,500	10,775		12,221				
66346	58-0828824	08/08/2016	Munich American Reassurance (MUQ7)	GA	CO/I	XXXL	6,169,050	7,714		4,260				
66346	58-0828824	08/08/2016	Munich American Reassurance (MUQ8)	GA	CO/I	XXXL	3,690,000	4,726		2,868				
66346	58-0828824	08/08/2016	Munich American Reassurance (MUQ9)	GA	CO/I	XXXL	22,276,698	19,317		16,327				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUT1)	GA	CO/I	XXXL	423,249,078	871,701		613,642				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUT1)	GA	YRT/I	QL	1,879,452			968				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUT2)	GA	CO/I	XXXL	887,743,276	960,389		1,083,962				
66346	58-0828824	08/30/2010	Munich American Reassurance (MUT2)	GA	YRT/I	QL	847,700			277				
88099	75-1608507	11/23/2007	Optimum Re Insurance Company (OPB5)	TX	YRT/I	QL	181,864,827	1,382,749	1,294,354	889,718				
88099	75-1608507	01/01/2012	Optimum Re Insurance Company (OPB7)	TX	YRT/I	QL	112,627,128	850,154	769,719	344,511				
88099	75-1608507	08/05/2011	Optimum Re Insurance Company (OPD5)	TX	YRT/I	QL	51,718,455	159,534	128,617	50,739				
88099	75-1608507	01/01/2012	Optimum Re Insurance Company (OPD6)	TX	YRT/I	QL	137,241,012	134,728	117,848	41,710				
88099	75-1608507	05/01/2013	Optimum Re Insurance Company (OPN6)	TX	YRT/I	QL	22,500		100	(32)				
88099	75-1608507	07/01/2012	Optimum Re Insurance Company (OPP1)	TX	YRT/I	QL	334,188,771	568,649	310,254	200,294				
93572	43-1235868	03/01/1996	RGA Reinsurance Co. (AL44)	MO	YRT/I	QL	159,863,327	3,042,533	3,212,063	2,412,354				
93572	43-1235868	05/01/1994	RGA Reinsurance Co. (AL93)	MO	YRT/I	QL	12,373,779	439,371	398,701	202,195				
93572	43-1235868	01/01/1974	RGA Reinsurance Co. (AL94)	MO	YRT/I	QL	1,441,081	50,736	48,677	83,673				
93572	43-1235868	10/01/1976	RGA Reinsurance Co. (AL95)	MO	YRT/I	QL	42,528,244	532,442	483,196	369,306				
93572	43-1235868	05/01/2001	RGA Reinsurance Co. (AL97)	MO	YRT/I	QL	688,597,019	2,860,476	2,821,640	1,437,320				
93572	43-1235868	09/16/1996	RGA Reinsurance Co. (ALA1)	MO	YRT/I	QL	99,500,580	711,718	700,611	315,184				
93572	43-1235868	04/01/1997	RGA Reinsurance Co. (ALA7)	MO	YRT/I	QL	236,381	2,821	2,622	1,382				
93572	43-1235868	09/01/2001	RGA Reinsurance Co. (ALB2)	MO	YRT/I	QL	161,343,639	3,047,292	2,970,560	1,335,884				
93572	43-1235868	11/19/2001	RGA Reinsurance Co. (ALD1)	MO	YRT/I	QL	273,731,046	3,770,100	3,418,495	1,098,782				
93572	43-1235868	09/01/2002	RGA Reinsurance Co. (ALD2)	MO	YRT/I	QL	31,340,698	268,595	235,405	61,867				
93572	43-1235868	05/01/1994	RGA Reinsurance Co. (AZ51)	MO	YRT/G	QL	218,555	5,073	4,636	3,487				
93572	43-1235868	05/01/1994	RGA Reinsurance Co. (AZ51)	MO	YRT/I	QL	16,627,410	89,198	83,544	56,649				
93572	43-1235868	03/01/1996	RGA Reinsurance Co. (AZ62)	MO	YRT/G	QL	25,250,947	308,963	326,627	314,223				
93572	43-1235868	03/01/1996	RGA Reinsurance Co. (AZ62)	MO	YRT/I	QL	476,700,007	3,857,472	3,779,679	4,381,440				
93572	43-1235868	01/01/1999	RGA Reinsurance Co. (AZ82)	MO	YRT/I	QL	41,126,842	562,812	520,759	456,597				
93572	43-1235868	03/28/2000	RGA Reinsurance Co. (AZ84)	MO	YRT/I	QL	668,378,518	2,985,813	2,900,039	1,516,205				

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
93572	43-1235868	03/28/2000	RG Reinsurance Co. (AZ85)	MO	YRT/I	QL	76,497,593	770,855	768,167	447,976				
93572	43-1235868	06/01/2002	RG Reinsurance Co. (AZE4)	MO	YRT/I	QL	23,668,908	293,468	274,103	125,265				
93572	43-1235868	09/14/1981	RG Reinsurance Co. (GA11)	MO	YRT/G	QL	5,880,434	65,516	122,267	92,157				
93572	43-1235868	09/14/1981	RG Reinsurance Co. (GA11)	MO	YRT/I	QL	1,002,085,878	11,032,831	11,307,843	13,427,216				
93572	43-1235868	01/01/1984	RG Reinsurance Co. (GA18)	MO	YRT/G	QL	1,877,915	53,663	49,877	61,586				
93572	43-1235868	01/01/1984	RG Reinsurance Co. (GA18)	MO	YRT/I	QL	142,777,133	2,653,851	2,813,109	3,275,107				
93572	43-1235868	03/01/1985	RG Reinsurance Co. (GA19)	MO	YRT/I	QL	6,694,222	91,362	87,310	127,421				
93572	43-1235868	09/01/1986	RG Reinsurance Co. (GA24)	MO	YRT/I	QL	847,782,861	1,764,680	1,723,259	8,657,713				
93572	43-1235868	03/29/1993	RG Reinsurance Co. (GA39)	MO	YRT/I	QL	452,675,023	3,052,584	3,042,760	2,455,968				
93572	43-1235868	03/29/1993	RG Reinsurance Co. (GA43)	MO	YRT/I	QL	11,562,474	109,736	108,935	90,631				
93572	43-1235868	05/01/1994	RG Reinsurance Co. (GA49)	MO	YRT/I	QL	304,522,815	1,606,763	1,621,633	1,024,425				
93572	43-1235868	04/15/2004	RG Reinsurance Co. (GA66)	MO	YRT/I	QL	47,596,981	276,301	242,878	232,790				
93572	43-1235868	02/08/1999	RG Reinsurance Co. (GA81)	MO	YRT/I	QL	77,096,623	561,323	543,301	344,936				
93572	43-1235868	03/28/2000	RG Reinsurance Co. (GA84)	MO	YRT/I	QL	2,548,948,038	9,141,326	8,902,809	4,829,955				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GA85)	MO	YRT/I	QL	105,070,508	670,184	656,800	368,383				
93572	43-1235868	07/01/2002	RG Reinsurance Co. (GAE4)	MO	YRT/I	QL	42,420,283	597,559	609,984	320,635				
93572	43-1235868	07/01/2002	RG Reinsurance Co. (GAE5)	MO	YRT/G	QL	93,026,401	707,783	683,635	543,927				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ2)	MO	CO/I	XXXL	10,742,745	41,249	46,084	50,865				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ2)	MO	YRT/I	QL	14,377,772	54,279	52,363	44,262				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ3)	MO	CO/I	XXXL	117,325,524	2,665,238	2,654,115	227,713				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ3)	MO	YRT/I	QL	12,456,648	29,941	28,380	23,503				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ4)	MO	CO/I	XXXL	29,348,328	1,952,565	1,829,073	59,565				
93572	43-1235868	05/01/2004	RG Reinsurance Co. (GAJ4)	MO	YRT/I	QL	5,457,684	6,984	6,597	4,952				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ6)	MO	CO/I	XXXL	4,160,646	6,353	11,062	16,013				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ6)	MO	YRT/I	QL	6,112,721	21,591	21,679	17,405				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ7)	MO	CO/I	XXXL	47,983,400	1,018,700	1,015,076	92,950				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ7)	MO	YRT/I	QL	6,129,518	13,410	12,277	10,001				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ8)	MO	CO/I	XXXL	13,018,429	654,673	604,543	25,834				
93572	43-1235868	01/01/2005	RG Reinsurance Co. (GAJ8)	MO	YRT/I	QL	1,906,605	2,073	2,006	1,434				
93572	43-1235868	05/23/2005	RG Reinsurance Co. (GAL2)	MO	CO/I	XXXL	617,158,011	2,768,965	4,079,155	1,474,961				
93572	43-1235868	05/23/2005	RG Reinsurance Co. (GAL2)	MO	YRT/I	QL	139,397,544	503,504	412,360	361,960				
93572	43-1235868	05/23/2005	RG Reinsurance Co. (GAL3)	MO	CO/I	XXXL	13,517,721,235	232,201,751	223,146,662	21,092,687				
93572	43-1235868	05/23/2005	RG Reinsurance Co. (GAL3)	MO	YRT/I	QL	984,901,277	1,957,295	1,666,753	1,421,246				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAL7)	MO	CO/I	XXXL	9,033,036,483	38,111,306	32,258,843	14,663,368				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAL7)	MO	YRT/I	QL	372,475,614	797,305	666,156	470,825				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAL8)	MO	CO/I	XXXL	30,213,043,062	139,851,277	100,033,133	39,543,607				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAL8)	MO	YRT/I	QL	722,039,558	859,374	655,550	528,693				
93572	43-1235868	07/01/2007	RG Reinsurance Co. (GAN1)	MO	YRT/I	QL	2,857,057,004	5,908,785	5,808,708	4,019,906				
93572	43-1235868	06/01/2012	RG Reinsurance Co. (GAN2)	MO	YRT/I	QL	5,217,237	15,073	6,068	3,933				
93572	43-1235868	06/01/2012	RG Reinsurance Co. (GAN3)	MO	YRT/I	QL	74,354,306	65,147	51,640	34,644				
93572	43-1235868	02/24/2014	RG Reinsurance Co. (GAN3B)	MO	YRT/I	QL	2,104,600,457	1,355,457	874,848	476,948				
93572	43-1235868	06/01/2012	RG Reinsurance Co. (GAN4)	MO	YRT/I	QL	100,248,594	131,714	62,667	39,340				
93572	43-1235868	11/01/2010	RG Reinsurance Co. (GAN5)	MO	YRT/I	QL	1,547,137,425	1,463,294	1,059,721	578,484				
93572	43-1235868	06/01/2012	RG Reinsurance Co. (GAN6)	MO	YRT/I	QL	86,943,406	140,094	115,803	58,936				
93572	43-1235868	06/01/2012	RG Reinsurance Co. (GAN7)	MO	YRT/I	QL	6,507,603	14,779	9,678	5,178				
93572	43-1235868	03/15/2015	RG Reinsurance Co. (GAQ1)	MO	CO/I	XXXL	3,285,000	1,756	1,561	2,397				
93572	43-1235868	03/15/2015	RG Reinsurance Co. (GAQ2)	MO	CO/I	XXXL	2,565,000	2,586	3,670	1,686				
93572	43-1235868	03/15/2015	RG Reinsurance Co. (GAQ3)	MO	CO/I	XXXL	15,736,500	12,125	9,861	13,997				
93572	43-1235868	08/08/2016	RG Reinsurance Co. (GAQ9)	MO	CO/I	XXXL	17,821,452	15,457		13,061				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAT1)	MO	CO/I	XXXL	1,157,083,994	2,405,074		1,647,111				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAT1)	MO	YRT/I	QL	5,011,877	2,591		1,693				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAT2)	MO	CO/I	XXXL	3,166,303,006	3,457,916		3,904,460				
93572	43-1235868	08/30/2010	RG Reinsurance Co. (GAT2)	MO	YRT/I	QL	2,966,954	3,036		1,063				
93572	43-1235868	10/01/1976	RG Reinsurance Co. (NC02)	MO	YRT/G	QL	62,353	2,579	2,454	3,127				
93572	43-1235868	10/01/1976	RG Reinsurance Co. (NC02)	MO	YRT/I	QL	159,494,675	2,272,454	2,672,610	2,976,524				
93572	43-1235868	03/29/1993	RG Reinsurance Co. (NC40)	MO	YRT/I	QL	14,455,755	137,211	136,211	114,616				

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**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG01)	MO	YRT/G	QL	152,587,249	74,611	74,197	592,855				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG02)	MO	YRT/G	QL	3,017,528,047	1,866,608	1,914,009	15,066,136				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG03)	MO	YRT/G	QL	262,479,503	215,462	221,969	2,348,214				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG04)	MO	YRT/G	QL	642,496,922	706,455	721,891	8,062,961				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG05)	MO	YRT/G	QL	383,604,853	141,483	143,245	1,030,638				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG05)	MO	YRT/I	QL	10,732,302	33,282	30,330	24,972				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG06G)	MO	YRT/G	QL	11,705,985	5,673	5,370	44,088				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG06)	MO	YRT/I	QL	34,397	29	27	29				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG09G)	MO	YRT/G	QL	925,400	340	405	3,419				
93572	43-1235868	11/01/1986	RGA Reinsurance Co. (RG10)	MO	CO/I	QL	8,934,400	6,491,329	5,944,543	45,582				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG10G)	MO	YRT/G	QL	1,687,100	874	764	7,348				
93572	43-1235868	01/01/1979	RGA Reinsurance Co. (RG11)	MO	YRT/I	QL	495,192	3,442	3,190	6,444				
93572	43-1235868	01/01/1983	RGA Reinsurance Co. (RG12)	MO	YRT/G	QL	22,998,465	1,475,505	1,491,972	2,273,728				
93572	43-1235868	01/01/1983	RGA Reinsurance Co. (RG12)	MO	YRT/I	QL	56,608,021	2,117,131	2,630,221	3,883,099				
93572	43-1235868	02/14/1983	RGA Reinsurance Co. (RG13)	MO	YRT/G	QL	940,064			52,281				
93572	43-1235868	02/14/1983	RGA Reinsurance Co. (RG13)	MO	YRT/I	QL	10,293,881			580,786				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG13G)	MO	YRT/G	QL	650,000	462	424	5,266				
93572	43-1235868	01/01/1988	RGA Reinsurance Co. (RG14)	MO	YRT/I	QL	22,620,092	568,114	537,388	716,288				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG14G)	MO	YRT/G	QL	27,300,000	20,471	19,452	153,614				
93572	43-1235868	01/01/1988	RGA Reinsurance Co. (RG15)	MO	YRT/I	QL	12,571,329	649,453	604,088	983,827				
93572	43-1235868	04/15/1991	RGA Reinsurance Co. (RG16)	MO	YRT/I	QL	4,130,543	95,816	88,686	130,803				
93572	43-1235868	04/15/1991	RGA Reinsurance Co. (RG19)	MO	YRT/I	QL	23,922,260	722,094	748,154	1,221,602				
93572	43-1235868	02/01/1994	RGA Reinsurance Co. (RG20)	MO	YRT/I	QL	3,014,722	21,453	19,750	38,661				
93572	43-1235868	09/14/1981	RGA Reinsurance Co. (RG22)	MO	YRT/I	QL	373,825,057	6,781,345	6,562,616	4,497,252				
93572	43-1235868	05/01/1994	RGA Reinsurance Co. (RG26)	MO	YRT/I	QL	192,557,021	3,757,910	3,357,641	1,519,926				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG26G)	MO	YRT/G	QL	33,003,750	17,611	16,365	135,723				
93572	43-1235868	02/01/1994	RGA Reinsurance Co. (RG27)	MO	YRT/I	QL	170,154	1,848	1,746	3,729				
93572	43-1235868	01/01/1997	RGA Reinsurance Co. (RG30)	MO	YRT/G	QL	41,523,298	12,202	11,449	81,637				
93572	43-1235868	04/15/1991	RGA Reinsurance Co. (RG37)	MO	YRT/I	QL	4,899,468	47,937	37,864	69,137				
93572	43-1235868	02/01/1994	RGA Reinsurance Co. (RG38)	MO	YRT/I	QL	3,935,578	12,204	12,955	15,668				
93572	43-1235868	02/01/1994	RGA Reinsurance Co. (RG39)	MO	YRT/I	QL	350,228	6,636	6,248	9,865				
93572	43-1235868	04/15/2004	RGA Reinsurance Co. (RG43)	MO	YRT/I	QL	1,580,482	148	120	190				
93572	43-1235868	04/01/1994	RGA Reinsurance Co. (RG55)	MO	YRT/I	QL	3,848,298	80,621	75,379	78,337				
93572	43-1235868	02/01/1994	RGA Reinsurance Co. (RG59)	MO	YRT/I	QL	187,544	3,177	3,001	4,871				
93572	43-1235868	09/01/1998	RGA Reinsurance Co. (RG87)	MO	YRT/I	QL	156,433,651	1,027,844	1,000,745	519,158				
93572	43-1235868	05/01/2001	RGA Reinsurance Co. (RG97)	MO	YRT/I	QL	736,231,175	2,597,754	2,576,289	1,323,459				
93572	43-1235868	09/16/1996	RGA Reinsurance Co. (RGA1)	MO	YRT/I	QL	74,648,167	533,979	525,629	234,641				
93572	43-1235868	02/29/2004	RGA Reinsurance Co. (RGA1)	MO	YRT/I	QL	104,207,782	1,186,679	1,096,163	625,972				
93572	43-1235868	11/01/2004	RGA Reinsurance Co. (RGA2)	MO	YRT/I	QL	26,564,635	933,521	848,976	642,826				
93572	43-1235868	08/23/2004	RGA Reinsurance Co. (RGA3)	MO	YRT/I	QL	287,580,860	10,914,796	10,555,306	5,889,426				
93572	43-1235868	06/01/2008	RGA Reinsurance Co. (RGA5)	MO	YRT/I	QL	590,422,080	4,571,408	4,271,725	2,760,831				
93572	43-1235868	08/01/2008	RGA Reinsurance Co. (RGA6)	MO	YRT/I	QL	46,060,163	176,074	154,275	94,231				
93572	43-1235868	01/01/2012	RGA Reinsurance Co. (RGA7)	MO	YRT/I	QL	254,788,295	1,896,867	1,706,591	743,646				
93572	43-1235868	03/31/2004	RGA Reinsurance Co. (RGA1)	MO	YRT/I	QL	340,983,880	3,850,495	3,557,876	1,047,520				
93572	43-1235868	03/31/2004	RGA Reinsurance Co. (RGA2)	MO	YRT/I	QL	8,663,055	26,927	22,340	4,609				
93572	43-1235868	05/01/2004	RGA Reinsurance Co. (RGA3)	MO	YRT/I	QL	97,102,416	839,466	718,062	224,665				
93572	43-1235868	08/23/2004	RGA Reinsurance Co. (RGA4)	MO	YRT/I	QL	51,572,174	120,465	103,224	41,487				
93572	43-1235868	11/01/2005	RGA Reinsurance Co. (RGA5)	MO	YRT/I	QL	720,006,173	2,914,340	2,437,875	1,354,826				
93572	43-1235868	01/01/2012	RGA Reinsurance Co. (RGA6)	MO	YRT/I	QL	340,745,718	381,401	333,410	125,517				
93572	43-1235868	02/29/2004	RGA Reinsurance Co. (RGA1)	MO	YRT/I	QL	133,071,073	2,599,240	2,445,214	1,212,656				
93572	43-1235868	06/01/2008	RGA Reinsurance Co. (RGA2)	MO	YRT/I	QL	145,330,689	170,620	133,133	70,251				
93572	43-1235868	04/01/2005	RGA Reinsurance Co. (RGA7)	MO	YRT/G	QL	1,634,942,983	435,089	433,703	3,986,787				
93572	43-1235868	04/01/2005	RGA Reinsurance Co. (RGA8)	MO	YRT/G	QL	39,994,733	15,608	17,280	162,067				
93572	43-1235868	07/01/2012	RGA Reinsurance Co. (RGA1)	MO	YRT/I	QL	645,710,948	2,023,698	1,419,156	1,058,390				
64688	75-6020048	09/01/2001	SCOR Global Life Americas Reins Co (SCB2)	DE	YRT/I	QL	311,658,882	6,552,237	6,294,594	2,821,608				
64688	75-6020048	08/23/2004	SCOR Global Life Americas Reins Co (SCB3)	DE	YRT/I	QL	172,548,599	6,548,885	6,333,183	2,905,637				

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
64688	75-6020048	08/05/2011	SCOR Global Life Americas Reins Co (SCB5)	DE	YRT/I	QL	104,859,342	692,931	662,288	330,915				
64688	75-6020048	01/01/2012	SCOR Global Life Americas Reins Co (SCB7)	DE	YRT/I	QL	226,002,325	1,709,521	1,553,139	601,742				
64688	75-6020048	08/05/2011	SCOR Global Life Americas Reins Co (SCD5)	DE	YRT/I	QL	103,436,926	319,081	257,231	82,346				
64688	75-6020048	01/01/2012	SCOR Global Life Americas Reins Co (SCD6)	DE	YRT/I	QL	258,054,908	268,611	235,314	81,224				
64688	75-6020048	01/01/2001	SCOR Global Life Americas Reins Co (SCG1)	DE	YRT/I	QL	86,675,104	320,296	356,884	204,011				
64688	75-6020048	11/01/2010	SCOR Global Life Americas Reins Co (SCN5)	DE	YRT/I	QL	2,775,096,721	2,380,785	1,776,250	838,551				
64688	75-6020048	01/01/2011	SCOR Global Life Americas Reins Co (SCN6)	DE	YRT/I	QL	5,162,000,287	8,492,403	6,696,581	3,069,854				
64688	75-6020048	01/01/2012	SCOR Global Life Americas Reins Co (SCN7)	DE	YRT/I	QL	360,989,976	634,178	431,096	173,915				
64688	75-6020048	01/01/2002	SCOR Global Life Americas Reins Co (SCPH)	DE	YRT/I	QL	39,397,819	29,295	12,905	32,500				
64688	75-6020048	09/01/1986	SCOR Global Life Americas Reins Co (TA23)	DE	YRT/I	QL	424,344,113	901,125	879,591	4,364,885				
64688	75-6020048	11/01/1986	SCOR Global Life Americas Reins Co (TA25)	DE	YRT/I	QL	80,353,761	1,529,120	1,588,332	1,985,606				
64688	75-6020048	11/01/1989	SCOR Global Life Americas Reins Co (TA27)	DE	YRT/I	QL	3,822,669	200,923	197,025	309,311				
64688	75-6020048	01/01/2002	SCOR Global Life Americas Reins Co (TAF2)	DE	YRT/I	QL	99,874,370	281,092	312,448	168,268				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL7)	DE	CO/I	XXXL	5,128,368,691	14,887,373	10,088,474	8,120,283				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL7)	DE	YRT/I	QL	157,433,337	274,384	183,343	134,321				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL8)	DE	CO/I	XXXL	12,019,400,943	49,678,962	34,013,761	15,637,820				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAL8)	DE	YRT/I	QL	314,015,468	350,672	228,646	172,075				
64688	75-6020048	07/15/2008	SCOR Global Life Americas Reins Co (TAN3)	DE	YRT/I	QL	5,579,189,695	4,202,730	3,591,419	2,430,824				
64688	75-6020048	07/15/2008	SCOR Global Life Americas Reins Co (TAN4)	DE	YRT/I	QL	3,766,984,037	5,652,400	4,166,578	2,566,083				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAT1)	DE	YRT/I	QL	1,252,964	649		241				
64688	75-6020048	08/30/2010	SCOR Global Life Americas Reins Co (TAT2)	DE	YRT/I	QL	2,119,255	2,168		795				
64688	75-6020048	04/15/1991	SCOR Global Life Americas Reins Co (TR37)	DE	YRT/I	QL	4,899,468	47,937	37,864	65,698				
64688	75-6020048	04/15/1991	SCOR Global Life Americas Reins Co (TR61)	DE	YRT/I	QL	3,828,480	69,186	62,265	87,448				
64688	75-6020048	04/15/1991	SCOR Global Life Americas Reins Co (TR62)	DE	YRT/I	QL	8,536,868	179,841	209,272	417,000				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR63)	DE	CO/I	QL	38,347,088	514,296	493,982	556,347				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR64)	DE	CO/I	QL	125,000	79		1,994				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR65)	DE	YRT/I	QL	1,657,681	13,509	12,324	27,146				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR66)	DE	YRT/I	QL	22,217,313	268,344	245,598	412,711				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR67)	DE	CO/I	QL	12,756,000	56,381	76,678	126,871				
64688	75-6020048	09/01/1991	SCOR Global Life Americas Reins Co (TR68)	DE	CO/I	QL	124,116	17,759	18,172	1,844				
64688	75-6020048	09/01/2002	SCOR Global Life Americas Reins Co (TRD2)	DE	YRT/I	QL	30,823,577	231,697	202,215	48,369				
64688	75-6020048	01/01/2002	SCOR Global Life Americas Reins Co (TRF2)	DE	YRT/I	QL	40,006,572	753,568	668,343	353,086				
64688	75-6020048	03/31/2003	SCOR Global Life Americas Reins Co (TRH1)	DE	YRT/I	QL	181,552,221	3,693,290	3,429,718	1,566,935				
64688	75-6020048	09/01/2003	SCOR Global Life Americas Reins Co (TRI1)	DE	YRT/I	QL	6,727,797	265,059	241,286	126,916				
64688	75-6020048	08/01/2008	SCOR Global Life Americas Reins Co (XLB6)	DE	YRT/I	QL	15,700,473	65,472	59,785	37,804				
64688	75-6020048	08/01/2008	SCOR Global Life Americas Reins Co (XLH2)	DE	YRT/I	QL	47,912,643	56,351	43,810	25,124				
87017	62-1003368	09/16/1996	SCOR Global Life Re Ins Co of DE (GG70)	DE	YRT/I	QL	176,876,469	931,343	938,921	578,394				
87017	62-1003368	03/01/1996	SCOR Global Life Re Ins Co of DE (GG80)	DE	YRT/I	QL	22,684,325	114,800	105,548	72,659				
87017	62-1003368	03/01/1996	SCOR Global Life Re Ins Co of DE (GG99)	DE	YRT/I	QL	6,196,116	399,175	378,381	351,463				
87017	62-1003368	09/24/1999	SCOR Global Life Re Ins Co of DE (GGB1)	DE	YRT/I	QL	454,139,147	7,818,720	8,143,725	3,951,739				
87017	62-1003368	09/01/2001	SCOR Global Life Re Ins Co of DE (GGB2)	DE	YRT/I	QL	111,993,058	1,909,507	1,920,812	868,106				
87017	62-1003368	11/19/2001	SCOR Global Life Re Ins Co of DE (GGD1)	DE	YRT/I	QL	71,492,082	1,111,048	1,022,468	364,119				
87017	62-1003368	10/01/2001	SCOR Global Life Re Ins Co of DE (GGE1)	DE	YRT/G	QL	81,094,630	468,860	1,398,707	301,554				
87017	62-1003368	10/01/2001	SCOR Global Life Re Ins Co of DE (GGE3)	DE	YRT/G	QL	50,344,638	251,241	337,903	119,602				
97071	13-3126819	02/01/1992	SCOR Global Life USA Reins Co (BA75)	DE	YRT/I	QL	6,883,357	268,907	259,743	448,905				
97071	13-3126819	05/01/2001	SCOR Global Life USA Reins Co (BA97)	DE	YRT/I	QL	468,195,835	1,819,195	1,799,188	900,377				
97071	13-3126819	08/01/1990	SCOR Global Life USA Reins Co (BM31)	DE	YRT/I	QL	799,555	4,731	4,722	7,425				
97071	13-3126819	03/28/2000	SCOR Global Life USA Reins Co (BM84)	DE	YRT/I	QL	1,861,916,860	6,700,420	6,529,719	3,204,993				
97071	13-3126819	03/28/2000	SCOR Global Life USA Reins Co (BM85)	DE	YRT/I	QL	120,433,511	933,943	919,912	481,904				
97071	13-3126819	07/01/2002	SCOR Global Life USA Reins Co (BME4)	DE	YRT/I	QL	20,974,260	270,988	263,335	127,194				
97071	13-3126819	01/01/2001	SCOR Global Life USA Reins Co (BMF1)	DE	YRT/I	QL	143,622,282	494,925	493,479	301,946				
97071	13-3126819	11/01/2005	SCOR Global Life USA Reins Co (GIB4)	DE	YRT/I	QL	328,135,460	8,741,355	8,094,821	7,707,195				
97071	13-3126819	11/23/2007	SCOR Global Life USA Reins Co (GIB5)	DE	YRT/I	QL	544,852,195	4,147,759	3,882,731	2,560,891				
97071	13-3126819	01/01/2012	SCOR Global Life USA Reins Co (GIB7)	DE	YRT/I	QL	342,343,532	2,631,349	2,369,062	846,846				
97071	13-3126819	11/01/2005	SCOR Global Life USA Reins Co (GID5)	DE	YRT/I	QL	573,773,834	2,366,623	1,971,503	1,034,241				
97071	13-3126819	01/01/2012	SCOR Global Life USA Reins Co (GID6)	DE	YRT/I	QL	319,430,283	335,542	294,135	110,716				

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL7)	DE	CO/I	XXXL	3,892,996,472	20,364,587	18,692,522	6,179,941				
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL7)	DE	YRT/I	QL	231,773,378	497,097	415,670	260,433				
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL8)	DE	CO/I	XXXL	2,925,007,411	19,494,539	15,625,564	3,747,780				
97071	13-3126819	08/30/2010	SCOR Global Life USA Reins Co (GIL8)	DE	YRT/I	QL	118,097,795	142,063	108,900	77,552				
97071	13-3126819	07/01/2007	SCOR Global Life USA Reins Co (GIN1)	DE	YRT/I	QL	1,490,567,860	3,077,322	3,029,981	1,848,955				
97071	13-3126819	07/15/2008	SCOR Global Life USA Reins Co (GIN2)	DE	YRT/I	QL	565,897,973	1,240,393	947,130	539,313				
97071	13-3126819	07/15/2008	SCOR Global Life USA Reins Co (GIN3)	DE	YRT/I	QL	4,117,223,522	3,084,486	2,590,154	1,547,610				
97071	13-3126819	07/15/2008	SCOR Global Life USA Reins Co (GIN4)	DE	YRT/I	QL	3,920,995,252	5,996,380	4,375,837	2,216,817				
97071	13-3126819	11/01/2010	SCOR Global Life USA Reins Co (GIN5)	DE	YRT/I	QL	2,818,641,822	2,441,427	1,794,045	862,690				
97071	13-3126819	01/01/2011	SCOR Global Life USA Reins Co (GIN6)	DE	YRT/I	QL	6,537,466,694	10,969,864	8,569,330	3,747,390				
97071	13-3126819	01/01/2012	SCOR Global Life USA Reins Co (GIN7)	DE	YRT/I	QL	453,123,004	801,125	530,721	219,975				
97071	13-3126819	07/01/2012	SCOR Global Life USA Reins Co (GIPF)	DE	YRT/I	QL	51,311,811	46,296	23,578	17,764				
97071	13-3126819	03/15/2015	SCOR Global Life USA Reins Co (SUQ1)	DE	CO/I	XXXL	3,285,000	1,756	1,561	2,397				
97071	13-3126819	03/15/2015	SCOR Global Life USA Reins Co (SUQ2)	DE	CO/I	XXXL	2,565,000	2,586	3,670	1,716				
97071	13-3126819	03/15/2015	SCOR Global Life USA Reins Co (SUQ3)	DE	CO/I	XXXL	15,736,500	12,125	9,861	14,057				
97071	13-3126819	08/08/2016	SCOR Global Life USA Reins Co (SUQ7)	DE	CO/I	XXXL	6,169,050	7,714		4,260				
97071	13-3126819	08/08/2016	SCOR Global Life USA Reins Co (SUQ8)	DE	CO/I	XXXL	3,690,000	4,726		2,868				
97071	13-3126819	08/08/2016	SCOR Global Life USA Reins Co (SUQ9)	DE	CO/I	XXXL	40,098,150	34,778		29,388				
87572	23-2038295	05/01/1994	Scottish Re (U.S.), Inc. (FR56)	DE	YRT/I	QL			3,753	(4,463)				
87572	23-2038295	04/01/1994	Scottish Re (U.S.), Inc. (PH55)	DE	YRT/I	QL			37,688	(3,831)				
87572	23-2038295	01/01/1995	Scottish Re (U.S.), Inc. (PH56)	DE	YRT/I	QL			1,585	362				
87572	23-2038295	09/24/1999	Scottish Re (U.S.), Inc. (PHB1)	DE	YRT/I	QL			159,494	(38,534)				
87572	23-2038295	03/01/1996	Scottish Re (U.S.), Inc. (PX58)	DE	YRT/I	QL			5,523	(258)				
87572	23-2038295	01/01/2005	Scottish Re (U.S.), Inc. (ST84)	DE	YRT/I	QL			2,294,086	(129,309)				
87572	23-2038295	01/01/2005	Scottish Re (U.S.), Inc. (ST85)	DE	YRT/I	QL			794,018	(43,477)				
87572	23-2038295	01/19/2005	Scottish Re (U.S.), Inc. (ST97)	DE	YRT/I	QL			557,523	(22,232)				
87572	23-2038295	02/29/2004	Scottish Re (U.S.), Inc. (STB1)	DE	YRT/I	QL			729,475	(26,708)				
87572	23-2038295	02/29/2004	Scottish Re (U.S.), Inc. (STB2)	DE	YRT/I	QL			2,622,574	(187,193)				
87572	23-2038295	08/23/2004	Scottish Re (U.S.), Inc. (STB3)	DE	YRT/I	QL			7,806,789	(516,522)				
87572	23-2038295	11/01/2005	Scottish Re (U.S.), Inc. (STB4)	DE	YRT/I	QL			10,771,678	(1,148,828)				
87572	23-2038295	11/23/2007	Scottish Re (U.S.), Inc. (STB5)	DE	YRT/I	QL			242,345	32,857				
87572	23-2038295	10/01/2004	Scottish Re (U.S.), Inc. (STD1)	DE	YRT/I	QL			1,081,648	(49,111)				
87572	23-2038295	08/23/2004	Scottish Re (U.S.), Inc. (STD4)	DE	YRT/I	QL			82,578	(3,505)				
87572	23-2038295	01/19/2005	Scottish Re (U.S.), Inc. (STE4)	DE	YRT/I	QL			119,359	(5,765)				
87572	23-2038295	01/01/2005	Scottish Re (U.S.), Inc. (STH1)	DE	YRT/I	QL			1,017,084	(8,056)				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM2)	DE	YRT/G	QL			379	1,462				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM3)	DE	YRT/G	QL			574	2,089				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM3)	DE	YRT/I	QL			269	65				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM5)	DE	YRT/G	QL			494	1,886				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM5)	DE	YRT/I	QL			962	(174)				
87572	23-2038295	04/01/2005	Scottish Re (U.S.), Inc. (STM6)	DE	YRT/G	QL			34	135				
87572	23-2038295	07/01/2007	Scottish Re (U.S.), Inc. (STN1)	DE	YRT/I	QL			251,374	(14,199)				
68713	84-0499703	11/01/1990	Security Life of Denver Ins. Co. (SD33)	CO	YRT/G	QL	369,034	6,262	6,252	8,667				
68713	84-0499703	11/01/1990	Security Life of Denver Ins. Co. (SD33)	CO	YRT/I	QL	198,273,577	3,252,269	3,320,096	3,847,892				
68713	84-0499703	07/01/1992	Security Life of Denver Ins. Co. (SD35)	CO	YRT/I	QL	465,717,836	3,617,649	3,620,032	2,651,504				
68713	84-0499703	03/29/1993	Security Life of Denver Ins. Co. (SD37)	CO	YRT/I	QL	565,795,592	3,818,250	3,805,993	2,701,639				
68713	84-0499703	03/29/1993	Security Life of Denver Ins. Co. (SD41)	CO	YRT/I	QL	14,455,755	137,393	136,377	113,064				
68713	84-0499703	07/01/1993	Security Life of Denver Ins. Co. (SD44)	CO	YRT/I	QL	8,581,395	148,365	140,641	117,532				
68713	84-0499703	07/01/1993	Security Life of Denver Ins. Co. (SD45)	CO	YRT/I	QL	24,944,211	516,707	532,397	717,047				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD46)	CO	YRT/G	QL	189,401	1,742	1,615	1,565				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD46)	CO	YRT/I	QL	110,216,063	1,553,457	1,411,962	716,391				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD63)	CO	YRT/G	QL	25,250,913	308,963	326,626	314,112				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD63)	CO	YRT/I	QL	476,699,734	3,857,461	3,779,676	4,009,876				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SD66)	CO	YRT/I	QL	21,646,794	195,828	186,723	118,653				
68713	84-0499703	09/16/1996	Security Life of Denver Ins. Co. (SD73)	CO	YRT/I	QL	265,305,246	1,397,518	1,408,935	838,120				
68713	84-0499703	06/15/1999	Security Life of Denver Ins. Co. (SD83)	CO	CO/I	QL	743,737,497	4,837,429	4,757,608	1,894,447				

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
68713	84-0499703	06/15/1999	Security Life of Denver Ins. Co. (SD83)	CO	CO/I	XXXL	5,156,947,757	20,146,939	21,395,205	13,935,021				
68713	84-0499703	06/15/1999	Security Life of Denver Ins. Co. (SD83)	CO	YRT/I	OL	2,151,792,053	13,403,933	12,488,502	8,299,886				
68713	84-0499703	10/01/2001	Security Life of Denver Ins. Co. (SDE1)	CO	YRT/G	OL	1,043,174,535	7,877,351	7,467,824	3,652,579				
68713	84-0499703	10/01/2001	Security Life of Denver Ins. Co. (SDE3)	CO	YRT/G	OL	337,461,409	2,978,252	2,834,470	1,310,329				
68713	84-0499703	07/01/2002	Security Life of Denver Ins. Co. (SDE4)	CO	YRT/I	OL	7,325,410	94,407	90,698	44,730				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ1)	CO	CO/I	XXXL	21,256,022	92,028	121,862	100,524				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ1)	CO	YRT/I	OL	31,307,785	188,151	174,829	119,641				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ2)	CO	CO/I	XXXL	48,342,356	185,621	207,378	228,892				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ2)	CO	YRT/I	OL	64,699,902	244,255	235,654	186,520				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ3)	CO	CO/I	XXXL	527,964,884	11,993,661	11,943,596	1,024,709				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ3)	CO	YRT/I	OL	56,054,930	134,744	127,706	101,504				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ4)	CO	CO/I	XXXL	132,067,476	8,786,575	8,230,857	268,045				
68713	84-0499703	05/01/2004	Security Life of Denver Ins. Co. (SDJ4)	CO	YRT/I	OL	24,559,572	31,420	29,696	21,491				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ5)	CO	CO/I	XXXL	8,731,711	13,650	15,641	42,272				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ5)	CO	YRT/I	OL	8,453,693	27,845	28,679	19,735				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ6)	CO	CO/I	XXXL	18,722,906	28,589	49,781	72,060				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ6)	CO	YRT/I	OL	27,507,252	97,147	97,498	72,865				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ7)	CO	CO/I	XXXL	215,925,316	4,584,198	4,567,887	418,274				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ7)	CO	YRT/I	OL	27,582,855	60,333	55,263	42,156				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ8)	CO	CO/I	XXXL	58,582,931	2,946,044	2,720,459	116,253				
68713	84-0499703	01/01/2005	Security Life of Denver Ins. Co. (SDJ8)	CO	YRT/I	OL	8,579,728	9,336	9,025	6,540				
68713	84-0499703	11/01/1990	Security Life of Denver Ins. Co. (SL08)	CO	YRT/I	OL	70,054,015	2,097,346	1,841,918	1,106,753				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SL33)	CO	YRT/I	OL	106,788,971	1,752,900	1,536,285	490,004				
68713	84-0499703	02/01/1994	Security Life of Denver Ins. Co. (SL34)	CO	YRT/I	OL	987,942	5,939	5,555	11,577				
68713	84-0499703	01/01/1992	Security Life of Denver Ins. Co. (SL35)	CO	YRT/G	OL	303,495	10,434	9,084	57,575				
68713	84-0499703	01/01/1992	Security Life of Denver Ins. Co. (SL35)	CO	YRT/I	OL	4,432,120	88,202	82,674	170,096				
68713	84-0499703	09/01/1992	Security Life of Denver Ins. Co. (SL36)	CO	YRT/I	OL	8,337,878	296,962	733,163	526,994				
68713	84-0499703	09/01/1992	Security Life of Denver Ins. Co. (SL37)	CO	YRT/I	OL	8,248,695	54,146	43,330	69,460				
68713	84-0499703	02/01/1994	Security Life of Denver Ins. Co. (SL38)	CO	YRT/I	OL	3,933,887	12,224	12,981	15,779				
68713	84-0499703	02/01/1994	Security Life of Denver Ins. Co. (SL39)	CO	YRT/I	OL	339,928	6,441	6,065	13,266				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SL43)	CO	YRT/I	OL	9,220,702	157,732	140,410	70,703				
68713	84-0499703	03/01/1996	Security Life of Denver Ins. Co. (SL44)	CO	YRT/I	OL	159,863,304	3,042,529	3,212,060	2,102,504				
68713	84-0499703	02/01/1994	Security Life of Denver Ins. Co. (SL59)	CO	YRT/I	OL	182,028	3,084	2,913	7,281				
68713	84-0499703	02/01/1994	Security Life of Denver Ins. Co. (SL69)	CO	YRT/I	OL	696,099	14,681	14,029	38,773				
68713	84-0499703	09/01/1998	Security Life of Denver Ins. Co. (SL87)	CO	YRT/I	OL	78,286,433	514,419	500,844	284,699				
68713	84-0499703	05/01/2001	Security Life of Denver Ins. Co. (SL97)	CO	YRT/I	OL	277,808,303	1,240,608	1,224,340	608,281				
68713	84-0499703	09/16/1996	Security Life of Denver Ins. Co. (SLA1)	CO	YRT/I	OL	99,500,578	711,510	700,308	318,388				
68713	84-0499703	03/31/2003	Security Life of Denver Ins. Co. (SLH1)	CO	YRT/I	OL	68,588,420	1,487,790	1,360,961	636,375				
82627	06-0839705	11/01/1970	Swiss Re Life & Health America (CG07)	MO	YRT/I	OL	215,900	10,814	21,801	19,750				
82627	06-0839705	11/01/1985	Swiss Re Life & Health America (CG21)	MO	YRT/I	OL	1,316,430	63,492	61,658	64,084				
82627	06-0839705	01/01/1971	Swiss Re Life & Health America (CI21)	MO	YRT/G	OL	35,830,008	2,184,726	2,152,970	2,497,343				
82627	06-0839705	01/01/1971	Swiss Re Life & Health America (CI21)	MO	YRT/I	OL	9,948,811	755,851	762,192	1,043,400				
82627	06-0839705	01/01/1991	Swiss Re Life & Health America (CI24)	MO	YRT/I	OL	4,170,679	76,542	76,045	85,207				
82627	06-0839705	01/01/1991	Swiss Re Life & Health America (CI25)	MO	YRT/I	OL	5,215,871	8,322	7,474	9,963				
82627	06-0839705	09/08/1997	Swiss Re Life & Health America (LF85)	MO	YRT/I	OL	34,867,361	339,538	319,252	235,769				
82627	06-0839705	08/01/1984	Swiss Re Life & Health America (LF88)	MO	YRT/G	OL	127,116	7,333	7,098	10,132				
82627	06-0839705	08/01/1984	Swiss Re Life & Health America (LF88)	MO	YRT/I	OL	3,265,109	170,276	225,638	260,982				
82627	06-0839705	10/01/1981	Swiss Re Life & Health America (LR10)	MO	YRT/G	OL	57,229	3,062	3,003	4,212				
82627	06-0839705	10/01/1981	Swiss Re Life & Health America (LR10)	MO	YRT/I	OL	8,021,666	300,470	377,975	417,691				
82627	06-0839705	01/01/1984	Swiss Re Life & Health America (LR17)	MO	YRT/G	OL	1,877,907	53,663	49,877	61,882				
82627	06-0839705	01/01/1984	Swiss Re Life & Health America (LR17)	MO	YRT/I	OL	11,086,581	299,938	304,557	352,686				
82627	06-0839705	03/29/1993	Swiss Re Life & Health America (LR38)	MO	YRT/I	OL	452,553,351	3,053,317	3,043,515	2,329,023				
82627	06-0839705	03/29/1993	Swiss Re Life & Health America (LR42)	MO	YRT/I	OL	11,562,495	109,885	109,071	84,328				
82627	06-0839705	12/01/1993	Swiss Re Life & Health America (LR52)	MO	YRT/I	OL	3,561,010	106,947	103,836	115,735				
82627	06-0839705	09/08/1997	Swiss Re Life & Health America (LR78)	MO	YRT/I	OL	138,888,792	977,297	965,129	587,410				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (ME38)	MO	YRT/I	OL	3,933,887	12,224	12,982	15,782				

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Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
82627	06-0839705	01/01/1992	Swiss Re Life & Health America (ME72)	MO	YRT/I	QL	1,374,038	45,807	43,247	79,936				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (ME73)	MO	YRT/I	QL	2,354,716	84,131	78,562	110,732				
82627	06-0839705	01/01/1990	Swiss Re Life & Health America (MG29)	MO	YRT/I	QL	1,252,778	48,927	49,551	66,581				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (NO38)	MO	YRT/I	QL	3,936,707	12,240	12,993	15,802				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (NO39)	MO	YRT/I	QL	339,928	6,441	6,065	14,072				
82627	06-0839705	01/19/2005	Swiss Re Life & Health America (NO43)	MO	YRT/I	QL	814,188	76	62	98				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (NO44)	MO	YRT/I	QL	159,863,327	3,042,531	3,212,061	2,256,394				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (NO45)	MO	YRT/I	QL	8,934,315	184,440	172,883	374,384				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (NO46)	MO	YRT/I	QL	443,677	2,186	5,669	4,975				
82627	06-0839705	09/01/1994	Swiss Re Life & Health America (NO47)	MO	YRT/I	QL	359,380	2,950	4,086	3,002				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (NO48)	MO	YRT/I	QL	207,077,307	2,309,889	2,521,217	1,894,373				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (NO50)	MO	YRT/I	QL	471,108,411	5,315,328	4,750,109	2,235,978				
82627	06-0839705	02/01/1994	Swiss Re Life & Health America (NO59)	MO	YRT/I	QL	182,028	3,084	2,913	8,038				
82627	06-0839705	09/08/1997	Swiss Re Life & Health America (NO85)	MO	YRT/I	QL	26,158,460	254,737	239,504	173,940				
82627	06-0839705	05/01/2001	Swiss Re Life & Health America (NO97)	MO	YRT/I	QL	936,389,073	3,638,049	3,597,904	1,777,932				
82627	06-0839705	09/16/1996	Swiss Re Life & Health America (NOA1)	MO	YRT/I	QL	100,501,365	714,463	703,052	302,084				
82627	06-0839705	04/01/1997	Swiss Re Life & Health America (NOA7)	MO	YRT/I	QL	236,381	2,821	2,622	1,342				
82627	06-0839705	09/01/2001	Swiss Re Life & Health America (NOB2)	MO	YRT/I	QL	887,019,112	17,973,548	17,352,863	7,940,778				
82627	06-0839705	11/19/2001	Swiss Re Life & Health America (NOD1)	MO	YRT/I	QL	144,905,907	2,231,334	2,012,302	619,802				
82627	06-0839705	03/31/2003	Swiss Re Life & Health America (NOH1)	MO	YRT/I	QL	49,236,122	1,090,560	997,863	469,041				
82627	06-0839705	09/01/2001	Swiss Re Life & Health America (NOIXB)	MO	CO/L	AXXX		36,537,462	35,459,289	480,919				
82627	06-0839705	11/19/2001	Swiss Re Life & Health America (NOIXD)	MO	CO/L	AXXX		149,642,017	142,745,275	1,737,401				
82627	06-0839705	06/01/1974	Swiss Re Life & Health America (NRO5)	MO	YRT/I	QL	589,547	33,898	33,052	65,341				
82627	06-0839705	09/01/1982	Swiss Re Life & Health America (NR13)	MO	YRT/I	QL	81,709,516	185,882	209,158	111,368				
82627	06-0839705	01/01/1990	Swiss Re Life & Health America (NR30)	MO	YRT/I	QL	1,138,090	51,212	49,424	66,269				
82627	06-0839705	03/01/1970	Swiss Re Life & Health America (RN08)	MO	YRT/I	QL	1,475	39	38	74				
82627	06-0839705	12/31/2016	Swiss Re Life & Health America (SR16T)	MO	CO/L	AXXX	8,137,703,582	109,728,443		70,759,696				
82627	06-0839705	12/31/2016	Swiss Re Life & Health America (SR16U)	MO	CO/L	AXXX	408,884,831	300,879,597		333,285,024				
82627	06-0839705	12/31/2016	Swiss Re Life & Health America (SR16V)	MO	MCO/L	QL	1,395,122,384			69,396,592			69,396,592	
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR59)	MO	YRT/G	QL	10,841,726	128,474	116,408	(9,467)				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR59)	MO	YRT/I	QL	621,714,534	1,883,327	2,110,791	1,170,213				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR60)	MO	YRT/G	QL	25,250,947	308,963	326,627	331,352				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR60)	MO	YRT/I	QL	476,797,870	3,857,728	3,779,916	4,241,745				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR64)	MO	YRT/G	QL	346,775	37,521	33,751	32,235				
82627	06-0839705	03/01/1996	Swiss Re Life & Health America (SR64)	MO	YRT/I	QL	424,814,883	2,934,998	2,815,876	2,965,204				
82627	06-0839705	01/19/2005	Swiss Re Life & Health America (SR66)	MO	YRT/I	QL	36,556,462	240,116	213,153	169,805				
82627	06-0839705	09/08/1997	Swiss Re Life & Health America (SR77)	MO	YRT/I	QL	105,566,641	739,289	729,669	437,365				
82627	06-0839705	10/18/2003	Swiss Re Life & Health America (SR83)	MO	CO/L	XXXL	372,242,132	1,026,949	1,036,230	893,742				
82627	06-0839705	10/18/2003	Swiss Re Life & Health America (SR83)	MO	YRT/I	QL	156,449,717	883,590	827,970	536,809				
82627	06-0839705	01/01/2000	Swiss Re Life & Health America (SR84)	MO	YRT/I	QL	903,868,316	3,840,192	3,722,281	1,953,053				
82627	06-0839705	06/12/2012	Swiss Re Life & Health America (SRB2)	MO	YRT/I	QL	179,538,121	3,528,440	3,411,753	2,416,747				
82627	06-0839705	08/05/2011	Swiss Re Life & Health America (SRB5)	MO	YRT/I	QL	52,429,691	346,475	331,149	144,848				
82627	06-0839705	08/01/2008	Swiss Re Life & Health America (SRB6)	MO	YRT/I	QL	23,550,706	98,199	89,666	53,666				
82627	06-0839705	01/01/2012	Swiss Re Life & Health America (SRB7)	MO	YRT/I	QL	156,083,015	1,112,692	1,010,403	359,655				
82627	06-0839705	09/01/1999	Swiss Re Life & Health America (SRC1)	MO	YRT/I	QL	450,113	3,862	3,562	1,494				
82627	06-0839705	06/12/2012	Swiss Re Life & Health America (SRD1)	MO	YRT/I	QL	301,809,301	4,143,048	3,743,589	1,248,262				
82627	06-0839705	10/01/2001	Swiss Re Life & Health America (SRE1)	MO	YRT/G	QL	142,082,769	823,307	2,020,174	539,382				
82627	06-0839705	05/28/2012	Swiss Re Life & Health America (SRE1B)	MO	YRT/G	QL	2,263,015,592	4,774,381	3,440,954	2,081,022				
82627	06-0839705	05/28/2012	Swiss Re Life & Health America (SRE2B)	MO	YRT/G	QL	5,404,518	18,183	16,958	8,596				
82627	06-0839705	05/28/2012	Swiss Re Life & Health America (SRE3)	MO	YRT/G	QL	414,855,852	878,799	685,438	383,221				
82627	06-0839705	07/01/2002	Swiss Re Life & Health America (SRE4)	MO	YRT/I	QL	44,927,859	713,897	690,942	361,202				
82627	06-0839705	08/01/2008	Swiss Re Life & Health America (SRH2)	MO	YRT/I	QL	72,150,539	84,814	65,989	36,993				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL1)	MO	CO/L	XXXL	227,471,202	719,246	952,802	1,203,517				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL1)	MO	YRT/I	QL	200,838,516	1,875,756	1,724,517	1,028,584				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL2)	MO	CO/L	XXXL	205,719,344	922,982	1,359,707	491,655				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL2)	MO	YRT/I	QL	46,466,557	167,844	137,432	107,663				

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL3)	MO	CO/I	XXXL	10,873,477,486	194,373,166	188,643,862	17,028,088				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL3)	MO	YRT/I	QL	836,317,682	1,750,522	1,472,889	1,128,393				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL4)	MO	CO/I	XXXL	1,750,238,655	48,159,790	43,999,784	2,866,704				
82627	06-0839705	05/23/2005	Swiss Re Life & Health America (SRL4)	MO	YRT/I	QL	81,603,817	90,707	79,315	57,533				
82627	06-0839705	11/01/2006	Swiss Re Life & Health America (SRL5)	MO	CO/I	XXXL	10,289,916,631	18,152,163	19,125,894	11,627,476				
82627	06-0839705	11/01/2006	Swiss Re Life & Health America (SRL5)	MO	YRT/I	QL	1,592,243,578	2,577,826	2,282,882	1,911,994				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL6)	MO	CO/I	XXXL	4,932,819,135	6,417,599	5,895,354	5,536,799				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL6)	MO	YRT/I	QL	523,350,304	944,119	787,266	536,814				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL7)	MO	CO/I	XXXL	1,869,151,787	3,428,913	1,296,775	3,095,129				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL7)	MO	YRT/I	QL	32,325,517	37,675	8,537	10,465				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL8)	MO	CO/I	XXXL	29,577,309,896	166,717,866	127,793,341	38,147,211				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRL8)	MO	YRT/I	QL	1,036,110,380	1,209,047	888,370	643,218				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM2)	MO	YRT/G	QL	5,673,300	1,788	1,910	12,739				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM3)	MO	YRT/G	QL	15,622,800	2,827	2,897	18,361				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM3)	MO	YRT/I	QL	1,793,113	1,443	1,341	1,005				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM4)	MO	YRT/G	QL	3,753,400	693	691	4,326				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM4)	MO	YRT/I	QL	56,306	81	81	62				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM5)	MO	YRT/G	QL	11,791,147	2,737	2,579	17,951				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM5)	MO	YRT/I	QL	2,026,088	5,238	4,810	4,076				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM6)	MO	YRT/G	QL	435,000	186	169	1,272				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM7)	MO	YRT/G	QL	970,266,846	191,633	169,979	1,679,732				
82627	06-0839705	04/01/2005	Swiss Re Life & Health America (SRM8)	MO	YRT/G	QL	14,631,374	7,770	6,714	76,920				
82627	06-0839705	04/01/2010	Swiss Re Life & Health America (SRM9)	MO	YRT/G	QL	220,520,577	25,255	20,842	244,003				
82627	06-0839705	05/01/2013	Swiss Re Life & Health America (SRM6)	MO	YRT/I	QL	33,750	18	150	(43)				
82627	06-0839705	07/01/2012	Swiss Re Life & Health America (SRP6)	MO	YRT/I	QL	1,280,015,485	3,250,791	2,212,065	1,186,106				
82627	06-0839705	08/08/2016	Swiss Re Life & Health America (SRQ0)	MO	CO/I	XXXL	19,523,250	16,162	16,162	18,332				
82627	06-0839705	03/15/2015	Swiss Re Life & Health America (SRQ4)	MO	CO/I	XXXL	20,415,600	24,911	8,149	21,402				
82627	06-0839705	04/01/2016	Swiss Re Life & Health America (SRQ5)	MO	CO/I	XXXL	1,112,400	838		1,828				
82627	06-0839705	06/29/2015	Swiss Re Life & Health America (SRR1)	MO	YRT/I	QL	6,941,142	3,366		10,113				
82627	06-0839705	12/01/2015	Swiss Re Life & Health America (SRS2)	MO	YRT/G	QL	89,384,237	20,326		90,065				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRT1)	MO	CO/I	XXXL	703,765,127	1,449,867		993,280				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRT1)	MO	YRT/I	QL	3,132,429	1,616		644				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRT2)	MO	CO/I	XXXL	1,775,486,616	1,920,800		2,167,890				
82627	06-0839705	08/30/2010	Swiss Re Life & Health America (SRT2)	MO	YRT/I	QL	1,695,404	1,735		511				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ2)	NY	CO/I	XXXL	10,742,743	41,248	46,083	50,865				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ2)	NY	YRT/I	QL	14,377,762	54,279	52,363	38,451				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ3)	NY	CO/I	XXXL	117,325,514	2,665,213	2,654,092	227,713				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ3)	NY	YRT/I	QL	12,456,640	29,941	28,380	20,547				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ4)	NY	CO/I	XXXL	29,348,326	1,952,558	1,829,066	59,565				
70688	36-6071399	05/01/2004	Transamerica Financial Life Ins. Co. (TAJ4)	NY	YRT/I	QL	5,457,683	6,984	6,597	4,273				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ6)	NY	CO/I	XXXL	4,160,646	6,353	11,062	16,013				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ6)	NY	YRT/I	QL	6,112,718	21,591	21,679	15,381				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ7)	NY	CO/I	XXXL	47,983,397	1,018,697	1,015,070	92,950				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ7)	NY	YRT/I	QL	6,129,516	13,410	12,278	8,683				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ8)	NY	CO/I	XXXL	13,018,428	654,671	604,541	25,834				
70688	36-6071399	01/01/2005	Transamerica Financial Life Ins. Co. (TAJ8)	NY	YRT/I	QL	1,906,604	2,073	2,006	1,300				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL2)	NY	CO/I	XXXL	205,719,305	922,967	1,359,689	491,655				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL2)	NY	YRT/I	QL	46,466,504	167,844	137,432	107,663				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL3)	NY	CO/I	XXXL	6,307,342,931	109,792,872	105,846,834	9,846,644				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL3)	NY	YRT/I	QL	466,953,532	943,352	801,029	605,552				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL4)	NY	CO/I	XXXL	585,005,889	16,115,644	14,716,850	958,626				
70688	36-6071399	05/23/2005	Transamerica Financial Life Ins. Co. (TAL4)	NY	YRT/I	QL	27,201,281	30,240	26,435	18,589				
70688	36-6071399	08/30/2010	Transamerica Financial Life Ins. Co. (TAT1)	NY	CO/I	XXXL	281,506,052	579,954		397,313				
70688	36-6071399	08/30/2010	Transamerica Financial Life Ins. Co. (TAT2)	NY	CO/I	XXXL	2,220,123,269	2,401,509		2,710,839				
80314	52-0913817	12/31/1994	UniCARE Life & Health Insurance Co. (LUN02)	IN	CO/G	QL		10,785,323	12,489,902					
66133	41-1760577	01/01/2014	Wilton Reassurance Co. (WR14)	MN	YRT/I	QL	452,552	1,227	1,109	2,390				

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Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
66133	41-1760577	05/23/2005	Wilton Reassurance Co. (WRL4)	MN	CO/I	XXXL	552,790,627	15,414,533	14,098,526	906,000				
66133	41-1760577	05/23/2005	Wilton Reassurance Co. (WRL4)	MN	YRT/I	QL	26,779,715	29,710	25,886	18,299				
0899999. General Account - Authorized U.S. Non-Affiliates							373,941,020,171	2,932,475,409	2,356,165,847	1,197,082,415			117,803,079	
1099999. Total General Account - Authorized Non-Affiliates							373,941,020,171	2,932,475,409	2,356,165,847	1,197,082,415			117,803,079	
1199999. Total General Account Authorized							373,941,020,171	2,932,475,409	2,356,165,847	1,197,082,415			117,803,079	
1499999. Total General Account - Unauthorized U.S. Affiliates														
1799999. Total General Account - Unauthorized Non-U.S. Affiliates														
1899999. Total General Account - Unauthorized Affiliates														
85090	22-3026145	07/15/1994	Dearborn National Life Insurance Co of New York (FDNY)	NY	CO/G	QL		226,999	228,524					
1999999. General Account - Unauthorized U.S. Non-Affiliates								226,999	228,524					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (FR56)	CYM	CO/I	QL	222,812	328	5,183					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PH55)	CYM	CO/I	QL	1,924,112	3,358	20,844					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PH56)	CYM	CO/I	QL	734,539	1,327	1,814					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PHB1)	CYM	CO/I	QL	12,156,901	14,445	61,984					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PX58)	CYM	CO/I	QL	592,740	500	3,189					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST84)	CYM	CO/I	QL	705,202,318	188,411	746,214					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST85)	CYM	CO/I	QL	117,198,574	60,595	223,505					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST97)	CYM	CO/I	QL	179,648,376	45,626	185,540					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB1)	CYM	CO/I	QL	67,813,775	62,958	224,625					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB2)	CYM	CO/I	QL	96,400,604	189,449	681,696					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB3)	CYM	CO/I	QL	178,095,084	456,484	1,646,006					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB4)	CYM	CO/I	QL	363,498,674	748,305	5,147,289					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB5)	CYM	CO/I	QL	28,006,901	21,154	119,183					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STD1)	CYM	CO/I	QL	114,433,958	86,048	190,526					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STD4)	CYM	CO/I	QL	32,484,767	7,440	20,293					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STE4)	CYM	CO/I	QL	8,432,690	6,214	20,653					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STH1)	CYM	CO/I	QL	54,900,935	84,049	282,026					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM2)	CYM	CO/G	QL	1,134,660	352	1,875					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM3)	CYM	CO/G	QL	3,154,560	560	2,832					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM3)	CYM	CO/I	QL	358,625	23	156					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM5)	CYM	CO/G	QL	2,340,230	532	2,756					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM5)	CYM	CO/I	QL	405,218	87	613					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM6)	CYM	CO/G	QL	87,000	37	200					
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STN1)	CYM	CO/I	QL	123,643,885	20,186	106,256					
2099999. General Account - Unauthorized Non-U.S. Non-Affiliates							2,092,871,938	1,998,468	9,695,257					
2199999. Total General Account - Unauthorized Non-Affiliates							2,092,871,938	2,225,467	228,524	9,695,257				
2299999. Total General Account Unauthorized							2,092,871,938	2,225,467	228,524	9,695,257				
2599999. Total General Account - Certified U.S. Affiliates														
2899999. Total General Account - Certified Non-U.S. Affiliates														
2999999. Total General Account - Certified Affiliates														
3299999. Total General Account - Certified Non-Affiliates														
3399999. Total General Account Certified														
3499999. Total General Account Authorized, Unauthorized and Certified							376,033,892,109	2,934,700,876	2,356,394,371	1,206,777,672			117,803,079	
3799999. Total Separate Accounts - Authorized U.S. Affiliates														
4099999. Total Separate Accounts - Authorized Non-U.S. Affiliates														
4199999. Total Separate Accounts - Authorized Affiliates														
82627	06-0839705	12/31/2016	Swiss Re Life & Health America (SR16V)	MO	MCO/I	QL						471,550,971		
4299999. Separate Accounts - Authorized U.S. Non-Affiliates													471,550,971	
4499999. Total Separate Accounts - Authorized Non-Affiliates													471,550,971	
4599999. Total Separate Accounts Authorized													471,550,971	
4899999. Total Separate Accounts - Unauthorized U.S. Affiliates														
5199999. Total Separate Accounts - Unauthorized Non-U.S. Affiliates														
5299999. Total Separate Accounts - Unauthorized Affiliates														
5599999. Total Separate Accounts - Unauthorized Non-Affiliates														

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**SCHEDULE S - PART 3 - SECTION 1**

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

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								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
5699999. Total Separate Accounts Unauthorized														
5999999. Total Separate Accounts - Certified U.S. Affiliates														
6299999. Total Separate Accounts - Certified Non-U.S. Affiliates														
6399999. Total Separate Accounts - Certified Affiliates														
6699999. Total Separate Accounts - Certified Non-Affiliates														
6799999. Total Separate Accounts Certified														
6899999. Total Separate Accounts Authorized, Unauthorized and Certified														
6999999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2599999, 3099999, 3799999, 4299999, 4899999, 5399999, 5999999 and 6499999)														
7099999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2899999, 3199999, 4099999, 4399999, 5199999, 5499999, 6299999 and 6599999)														
9999999 - Totals														

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 3 - SECTION 2**

Reinsurance Ceded Accident and Health Insurance Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Premiums	9 Unearned Premiums (Estimated)	10 Reserve Credit Taken Other than for Unearned Premiums	Outstanding Surplus Relief		13 Modified Coinsurance Reserve	14 Funds Withheld Under Coinsurance
										11 Current Year	12 Prior Year		
0399999. Total General Account - Authorized U.S. Affiliates													
0699999. Total General Account - Authorized Non-U.S. Affiliates													
0799999. Total General Account - Authorized Affiliates													
68276	48-1024691	06/01/2000	Employers Reassurance Corporation	KS.	CO/I	LONG-TERM CARE	94,759,985	14,872,203	1,502,445,816				
60213	25-1800302	07/15/1994	HM Life Insurance Company of New York	NY	CO/G	OH			819,400				
80314	52-0913817	12/31/1994	UniCARE Life & Health Insurance Company	IN	CO/G	OH	160,081		453,405				
39845	48-0921045	01/01/1993	Westport Insurance Corporation	MO	OTH/I	DISABILITY INCOME - LONG-TERM			34,264,966				
0899999. General Account - Authorized U.S. Non-Affiliates													
1099999. Total General Account - Authorized Non-Affiliates													
1199999. Total General Account Authorized													
1499999. Total General Account - Unauthorized U.S. Affiliates													
1799999. Total General Account - Unauthorized Non-U.S. Affiliates													
1899999. Total General Account - Unauthorized Affiliates													
91898	86-0388413	01/01/2008	LifeCare Assurance Company	AZ	MCO/I	LONG-TERM CARE	27,787,927					79,851,954	
1999999. General Account - Unauthorized U.S. Non-Affiliates													
2199999. Total General Account - Unauthorized Non-Affiliates													
2299999. Total General Account Unauthorized													
2599999. Total General Account - Certified U.S. Affiliates													
2899999. Total General Account - Certified Non-U.S. Affiliates													
2999999. Total General Account - Certified Affiliates													
3299999. Total General Account - Certified Non-Affiliates													
3399999. Total General Account Certified													
3499999. Total General Account Authorized, Unauthorized and Certified													
3799999. Total Separate Accounts - Authorized U.S. Affiliates													
4099999. Total Separate Accounts - Authorized Non-U.S. Affiliates													
4199999. Total Separate Accounts - Authorized Affiliates													
4499999. Total Separate Accounts - Authorized Non-Affiliates													
4599999. Total Separate Accounts Authorized													
4899999. Total Separate Accounts - Unauthorized U.S. Affiliates													
5199999. Total Separate Accounts - Unauthorized Non-U.S. Affiliates													
5299999. Total Separate Accounts - Unauthorized Affiliates													
5599999. Total Separate Accounts - Unauthorized Non-Affiliates													
5699999. Total Separate Accounts Unauthorized													
5999999. Total Separate Accounts - Certified U.S. Affiliates													
6299999. Total Separate Accounts - Certified Non-U.S. Affiliates													
6399999. Total Separate Accounts - Certified Affiliates													
6699999. Total Separate Accounts - Certified Non-Affiliates													
6799999. Total Separate Accounts Certified													
6899999. Total Separate Accounts Authorized, Unauthorized and Certified													
6999999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2599999, 3099999, 3799999, 4299999, 4899999, 5399999, 5999999 and 6499999)													
7099999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2899999, 3199999, 4099999, 4399999, 5199999, 5499999, 6299999 and 6599999)													
9999999 - Totals													

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 4**

Reinsurance Ceded to Unauthorized Companies

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Reserve Credit Taken	Paid and Unpaid Losses Recoverable (Debit)	Other Debits	Total (Cols.5+6+7)	Letters of Credit	Issuing or Confirming Bank Reference Number (a)	Trust Agreements	Funds Deposited by and Withheld from Reinsurers	Other	Miscellaneous Balances (Credit)	Sum of Cols. 9+11+12+13 +14 but not in Excess of Col. 8
0399999. Total General Account - Life and Annuity U.S. Affiliates										XXX				
0699999. Total General Account - Life and Annuity Non-U.S. Affiliates										XXX				
0799999. Total General Account - Life and Annuity Affiliates										XXX				
85090	22-3026145	07/15/1994	Dearborn National Life Ins Co of NY	226,999			226,999					226,999		226,999
0899999. General Account - Life and Annuity U.S. Non-Affiliates										XXX			226,999	226,999
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (FR56)	328			328			328				328
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PH55)	3,358			3,358			3,358				3,358
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PH56)	1,327			1,327			1,327				1,327
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PHB1)	14,445			14,445			14,445				14,445
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (PX58)	500			500			500				500
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST84)	188,411	119,576		307,987			307,987				307,987
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST85)	60,595			60,595			60,595				60,595
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (ST97)	45,626			45,626			45,626				45,626
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB1)	62,958	12,786		75,744			75,744				75,744
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB2)	189,449	26,387		215,836			215,836				215,836
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB3)	456,484	2,493,606		2,950,090			2,950,090				2,950,090
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB4)	748,305	1,103,753	516,012	2,368,070			2,368,070				2,368,070
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STB5)	21,154			21,154			21,154				21,154
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STD1)	86,048			86,048			86,048				86,048
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STD4)	7,440			7,440			7,440				7,440
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STE4)	6,214			6,214			6,214				6,214
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STH1)	84,049			84,049			84,049				84,049
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM2)	352	1,000		1,352			1,352				1,352
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM3)	583			583			583				583
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM5)	619			619			619				619
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STM6)	37			37			37				37
00000	AA-3770192	06/01/2016	Scottish Annuity & Life Ins Co. (Cayman) LTD (STN1)	20,186			20,186			20,186				20,186
0999999. General Account - Life and Annuity Non-U.S. Non-Affiliates										XXX	6,271,588			6,271,588
1099999. Total General Account - Life and Annuity Non-Affiliates										XXX	6,271,588	226,999		6,498,587
1199999. Total General Account Life and Annuity										XXX	6,271,588			6,498,587
1499999. Total General Account - Accident and Health U.S. Affiliates										XXX				
1799999. Total General Account - Accident and Health Non-U.S. Affiliates										XXX				
1899999. Total General Account - Accident and Health Affiliates										XXX				
91898	86-0388413	01/01/2008	LifeCare Assurance Company		66,117	2,415,094	2,481,211						2,873,781	2,481,211
1999999. General Account - Accident and Health U.S. Non-Affiliates										XXX			2,873,781	2,481,211
2199999. Total General Account - Accident and Health Non-Affiliates										XXX			2,873,781	2,481,211
2299999. Total General Account Accident and Health										XXX			2,873,781	2,481,211
2399999. Total General Account										XXX	6,271,588	226,999	2,873,781	8,979,798
2699999. Total Separate Accounts - U.S. Affiliates										XXX				
2999999. Total Separate Accounts - Non-U.S. Affiliates										XXX				
3099999. Total Separate Accounts - Affiliates										XXX				
3399999. Total Separate Accounts - Non-Affiliates										XXX				
3499999. Total Separate Accounts										XXX				
3599999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2699999 and 3199999)										XXX		226,999	2,873,781	2,708,210
3699999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2999999 and 3299999)										XXX	6,271,588			6,271,588
9999999 - Totals										XXX	6,271,588	226,999	2,873,781	8,979,798

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

Issuing or Confirming Bank Reference Number	Letters of Credit Code	American Bankers Association (ABA) Routing Number	Issuing or Confirming Bank Name	Letters of Credit Amount
<b>NONE</b>				

Schedule S - Part 5

**NONE**

Schedule S - Part 5 - Bank Footnote

**NONE**

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE S - PART 6**

Five Year Exhibit of Reinsurance Ceded Business  
(000 OMITTED)

	1 2016	2 2015	3 2014	4 2013	5 2012
<b>A. OPERATIONS ITEMS</b>					
1. Premiums and annuity considerations for life and accident and health contracts .....	1,329,486	819,218	771,523	749,663	711,180
2. Commissions and reinsurance expense allowances .....	398,451	110,106	108,676	107,438	111,552
3. Contract claims .....	565,785	594,097	472,230	380,960	426,104
4. Surrender benefits and withdrawals for life contracts .....	121	317	527	48	118
5. Dividends to policyholders .....	518	688	724	745	723
6. Reserve adjustments on reinsurance ceded .....	82,715	16,029	21,072	49,807	56,733
7. Increase in aggregate reserve for life and accident and health contracts .....	684,665	482,566	297,242	302,802	245,426
<b>B. BALANCE SHEET ITEMS</b>					
8. Premiums and annuity considerations for life and accident and health contracts deferred and uncollected .....	161,386	94,993	87,581	90,747	78,884
9. Aggregate reserves for life and accident and health contracts .....	4,487,557	3,802,892	3,320,326	3,023,084	2,721,949
10. Liability for deposit-type contracts .....					
11. Contract claims unpaid .....	108,752	149,963	93,184	80,021	94,792
12. Amounts recoverable on reinsurance .....	41,664	45,319	35,049	12,212	18,896
13. Experience rating refunds due or unpaid .....	108	113	114	107	141
14. Policyholders' dividends (not included in Line 10) .....	592	668	733	831	858
15. Commissions and reinsurance expense allowances due .....	(9,911)	23,408	21,562	19,901	18,804
16. Unauthorized reinsurance offset .....					
17. Offset for reinsurance with Certified Reinsurers .....					
<b>C. UNAUTHORIZED REINSURANCE (DEPOSITS BY AND FUNDS WITHHELD FROM)</b>					
18. Funds deposited by and withheld from (F) .....					
19. Letters of credit (L) .....					
20. Trust agreements (T) .....	6,272				
21. Other (O) .....	227	229	235	271	2,528
<b>D. REINSURANCE WITH CERTIFIED REINSURERS (DEPOSITS BY AND FUNDS WITHHELD FROM)</b>					
22. Multiple Beneficiary Trust .....					
23. Funds deposited by and withheld from (F) .....					
24. Letters of credit (L) .....					
25. Trust agreements (T) .....					
26. Other (O) .....					

**SCHEDULE S - PART 7**

Restatement of Balance Sheet to Identify Net Credit for Ceded Reinsurance

	1 As Reported (net of ceded)	2 Restatement Adjustments	3 Restated (gross of ceded)
<b>ASSETS (Page 2, Col. 3)</b>			
1. Cash and invested assets (Line 12) .....	154,886,061,845		154,886,061,845
2. Reinsurance (Line 16) .....	33,347,760	(33,347,760)	
3. Premiums and considerations (Line 15) .....	783,657,406	121,418,101	905,075,507
4. Net credit for ceded reinsurance .....	XXX	4,502,889,032	4,502,889,032
5. All other admitted assets (balance) .....	5,763,402,732		5,763,402,732
6. Total assets excluding Separate Accounts (Line 26) .....	161,466,469,743	4,590,959,373	166,057,429,116
7. Separate Account assets (Line 27) .....	62,203,995,882		62,203,995,882
8. Total assets (Line 28) .....	223,670,465,625	4,590,959,373	228,261,424,998
<b>LIABILITIES, CAPITAL AND SURPLUS (Page 3)</b>			
9. Contract reserves (Lines 1 and 2) .....	112,185,947,641	4,487,556,664	116,673,504,305
10. Liability for deposit-type contracts (Line 3) .....	11,574,147,866		11,574,147,866
11. Claim reserves (Line 4) .....	363,003,505	108,751,905	471,755,410
12. Policyholder dividends/reserves (Lines 5 through 7) .....	1,609,194,344	592,464	1,609,786,808
13. Premium & annuity considerations received in advance (Line 8) .....	29,443,441	1,047,433	30,490,874
14. Other contract liabilities (Line 9) .....	48,893,465	(8,134,055)	40,759,410
15. Reinsurance in unauthorized companies (Line 24.02 minus inset amount) .....			
16. Funds held under reinsurance treaties with unauthorized reinsurers (Line 24.03 minus inset amount) .....			
17. Reinsurance with Certified Reinsurers (Line 24.02 inset amount) .....			
18. Funds held under reinsurance treaties with Certified Reinsurers (Line 24.03 inset amount) .....			
19. All other liabilities (balance) .....	20,241,488,902	1,144,962	20,242,633,864
20. Total liabilities excluding Separate Accounts (Line 26) .....	146,052,119,164	4,590,959,373	150,643,078,537
21. Separate Account liabilities (Line 27) .....	62,194,856,505		62,194,856,505
22. Total liabilities (Line 28) .....	208,246,975,669	4,590,959,373	212,837,935,042
23. Capital & surplus (Line 38) .....	15,423,489,956	XXX	15,423,489,956
24. Total liabilities, capital & surplus (Line 39) .....	223,670,465,625	4,590,959,373	228,261,424,998
<b>NET CREDIT FOR CEDED REINSURANCE</b>			
25. Contract reserves .....	4,487,556,664		
26. Claim reserves .....	108,751,905		
27. Policyholder dividends/reserves .....	592,464		
28. Premium & annuity considerations received in advance .....	1,047,433		
29. Liability for deposit-type contracts .....			
30. Other contract liabilities .....	(8,134,055)		
31. Reinsurance ceded assets .....	33,347,760		
32. Other ceded reinsurance recoverables .....			
33. Total ceded reinsurance recoverables .....	4,623,162,171		
34. Premiums and considerations .....	121,418,101		
35. Reinsurance in unauthorized companies .....			
36. Funds held under reinsurance treaties with unauthorized reinsurers .....			
37. Reinsurance with Certified Reinsurers .....			
38. Funds held under reinsurance treaties with Certified Reinsurers .....			
39. Other ceded reinsurance payables/offsets .....	(1,144,962)		
40. Total ceded reinsurance payable/offsets .....	120,273,139		
41. Total net credit for ceded reinsurance .....	4,502,889,032		

**ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company**  
**SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS**

Allocated by States and Territories

States, Etc.	1	Life Contracts		Direct Business Only			7	
		2	3	4	5	6		
	Active Status	Life Insurance Premiums	Annuity Considerations	Accident and Health Insurance Premiums, Including Policy, Membership and Other Fees	Other Considerations	Total Columns 2 through 5	Deposit-Type Contracts	
1. Alabama	AL	L	102,658,238	50,550,671	6,125,601	7,740,008	167,074,518	47,686,229
2. Alaska	AK	L	3,115,943	2,749,875	355,962	5,124,732	11,346,512	934,367
3. Arizona	AZ	L	63,862,053	70,517,184	8,900,002	106,337,694	249,616,933	11,531,954
4. Arkansas	AR	L	71,710,455	21,767,295	1,927,362	3,601,253	99,006,365	13,943,938
5. California	CA	L	579,323,816	363,586,675	58,740,322	785,749,411	1,787,400,224	385,105,884
6. Colorado	CO	L	95,277,270	31,506,354	10,413,525	60,555,485	197,752,634	29,147,213
7. Connecticut	CT	L	154,545,993	79,131,065	19,949,381	81,234,784	334,861,223	35,508,283
8. Delaware	DE	L	25,123,512	17,483,022	1,616,802	4,097,843	48,321,179	1,616,135,794
9. District of Columbia	DC	L	24,131,249	8,772,945	3,921,027	32,824,943	69,650,164	3,330,660
10. Florida	FL	L	498,691,080	230,797,694	29,185,959	274,721,790	1,033,396,523	254,570,070
11. Georgia	GA	L	165,157,569	287,509,098	21,799,781	261,260,256	735,726,704	53,233,777
12. Hawaii	HI	L	18,057,338	15,923,916	2,947,724	17,429,350	54,358,328	10,914,845
13. Idaho	ID	L	21,425,653	12,274,105	1,265,274	4,056,008	39,021,040	9,249,336
14. Illinois	IL	L	215,901,575	170,177,558	24,611,832	625,947,973	1,036,638,938	79,591,562
15. Indiana	IN	L	96,057,403	60,465,815	8,960,313	93,360,527	258,844,058	20,339,350
16. Iowa	IA	L	63,007,362	55,994,422	3,827,563	152,272,043	275,101,390	9,977,377
17. Kansas	KS	L	97,719,839	28,230,205	5,682,210	29,545,611	161,177,865	15,962,294
18. Kentucky	KY	L	29,453,260	50,784,085	4,914,679	141,001,215	226,153,239	54,919,847
19. Louisiana	LA	L	61,805,649	22,399,064	5,535,568	19,970,978	109,711,259	26,735,502
20. Maine	ME	L	44,921,870	11,237,004	2,263,702	34,355,701	92,778,277	2,483,897
21. Maryland	MD	L	116,040,463	66,228,011	28,046,844	141,443,407	351,758,725	48,929,335
22. Massachusetts	MA	L	173,907,317	297,991,416	30,446,022	666,136,230	1,168,480,985	44,814,896
23. Michigan	MI	L	145,082,999	120,186,755	13,883,049	364,843,781	643,996,584	38,461,766
24. Minnesota	MN	L	64,143,610	53,130,673	8,333,177	285,125,274	410,732,734	114,375,232
25. Mississippi	MS	L	38,686,190	25,831,047	10,049,586	8,257,639	82,824,462	27,414,343
26. Missouri	MO	L	95,708,850	50,634,355	10,348,968	127,188,964	283,881,137	34,966,044
27. Montana	MT	L	17,031,736	8,273,216	1,109,863	1,027,127	27,441,942	8,434,668
28. Nebraska	NE	L	55,500,712	90,080,360	5,853,190	137,281,009	288,715,271	9,046,527
29. Nevada	NV	L	29,134,589	18,247,835	3,308,091	58,446,296	109,136,811	14,133,069
30. New Hampshire	NH	L	27,573,325	26,110,622	4,213,913	18,194,176	76,092,036	15,775,742
31. New Jersey	NJ	L	354,738,851	147,341,414	37,059,567	386,287,334	925,427,166	89,271,377
32. New Mexico	NM	L	39,800,884	10,388,495	2,064,739	845,407	53,099,525	8,050,067
33. New York	NY	L	960,654,470	434,766,231	80,010,106	755,784,585	2,231,215,392	90,470,445
34. North Carolina	NC	L	163,431,092	179,482,191	27,471,217	183,892,920	554,277,420	100,313,092
35. North Dakota	ND	L	10,314,990	8,837,416	568,418	39,121,360	58,842,184	15,299,045
36. Ohio	OH	L	145,175,436	253,202,759	15,804,163	271,298,108	685,480,466	43,689,539
37. Oklahoma	OK	L	78,528,537	42,994,159	7,652,149	55,823,488	184,998,333	21,461,616
38. Oregon	OR	L	24,340,362	26,130,168	4,566,691	17,803,753	72,840,974	15,435,861
39. Pennsylvania	PA	L	258,398,148	472,344,174	39,213,151	407,078,603	1,177,034,076	18,726,708
40. Rhode Island	RI	L	22,240,028	13,897,061	2,975,684	55,765,459	94,878,232	3,181,417
41. South Carolina	SC	L	63,959,204	63,014,667	14,197,064	63,184,078	204,355,013	21,923,995
42. South Dakota	SD	L	11,168,066	12,715,484	650,208	1,502,185	26,035,943	3,025,198
43. Tennessee	TN	L	96,711,195	78,072,454	16,601,460	285,444,306	476,829,415	42,069,884
44. Texas	TX	L	391,781,948	254,570,140	46,249,489	202,941,802	895,543,379	222,255,601
45. Utah	UT	L	45,666,481	32,089,417	4,067,408	10,844,668	92,667,974	33,186,451
46. Vermont	VT	L	18,751,867	6,339,466	1,254,471	8,091,579	34,437,383	2,909,680
47. Virginia	VA	L	198,897,064	332,084,970	30,250,014	189,717,718	750,949,766	75,117,689
48. Washington	WA	L	123,348,890	47,443,059	9,968,612	51,323,434	232,083,995	9,077,426
49. West Virginia	WV	L	12,050,715	16,231,594	1,579,882	25,134,081	54,996,272	27,865,562
50. Wisconsin	WI	L	94,907,643	137,163,928	5,952,044	46,151,643	284,175,258	7,587,914
51. Wyoming	WY	L	8,011,969	1,982,682	629,065	4,893,676	15,517,392	534,523
52. American Samoa	AS	N						
53. Guam	GU	N	125		7,079		7,204	
54. Puerto Rico	PR	L	62,304,860	12,598,292	8,498,929	10,426,526	93,828,607	1,311,935
55. U.S. Virgin Islands	VI	N	16,399		23,991		40,390	2,360
56. Northern Mariana Islands	MP	N						
57. Canada	CAN	N	1,969,841	55,905	105,475	15,332	2,146,553	74,304
58. Aggregate Other Alien	OT	XXX	17,412,180	2,355,631	525,273	134,332,110	154,625,194	
59. Subtotal	(a)	52	6,399,338,163	4,934,674,099	696,483,641	7,756,835,663	19,787,331,566	3,890,495,490
90. Reporting entity contributions for employee benefits plans		XXX						
91. Dividends or refunds applied to purchase paid-up additions and annuities		XXX	1,368,686,025	3,172,845			1,371,858,870	
92. Dividends or refunds applied to shorten endowment or premium paying period		XXX						
93. Premium or annuity considerations waived under disability or other contract provisions		XXX	26,071,583		12,444,298		38,515,881	
94. Aggregate or other amounts not allocable by State		XXX						
95. Totals (Direct Business)		XXX	7,794,095,771	4,937,846,944	708,927,939	7,756,835,663	21,197,706,317	3,890,495,490
96. Plus reinsurance assumed		XXX	54,089,663	412,170		1,388,489,543	1,442,991,376	1,947,395,000
97. Totals (All Business)		XXX	7,848,185,434	4,938,259,114	708,927,939	9,145,325,206	22,640,697,693	5,837,890,490
98. Less reinsurance ceded		XXX	1,178,889,198		123,174,350		1,302,063,548	
99. Totals (All Business) less Reinsurance Ceded		XXX	6,669,296,236	4,938,259,114	(b) 585,753,589	9,145,325,206	21,338,634,145	5,837,890,490
<b>DETAILS OF WRITE-INS</b>								
58001. ZZZ Other Alien		XXX	17,412,180	2,355,631	525,273	134,332,110	154,625,194	
58002.		XXX						
58003.		XXX						
58998. Summary of remaining write-ins for Line 58 from overflow page		XXX						
58999. Totals (Lines 58001 through 58003 plus 58998)(Line 58 above)		XXX	17,412,180	2,355,631	525,273	134,332,110	154,625,194	
9401.		XXX						
9402.		XXX						
9403.		XXX						
9498. Summary of remaining write-ins for Line 94 from overflow page		XXX						
9499. Totals (Lines 9401 through 9403 plus 9498)(Line 94 above)		XXX						

(L) Licensed or Chartered - Licensed Insurance Carrier or Domiciled RRG; (R) Registered - Non-domiciled RRGs; (Q) Qualified - Qualified or Accredited Reinsurer; (E) Eligible - Reporting Entities eligible or approved to write Surplus Lines in the state; (N) None of the above - Not allowed to write business in the state.

Explanation of basis of allocation by states, etc., of premiums and annuity considerations

Individual insurance premiums and annuity considerations - allocated to the states in which the policyholder resides (based on Company records when the premium is received). Group premiums - allocated consistent with the 500 lives rule.

(a) Insert the number of L responses except for Canada and Other Alien.

(b) Column 4 should balance with Exhibit 1, Lines 6.4, 10.4, and 16.4, Cols. 8, 9, 10, or with Schedule H, Part 1, Line 1, indicate which: Exhibit 1, Lines 6.4, 10.4, and 16.4, Cols. 8, 9, 10.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE T - PART 2  
INTERSTATE COMPACT - EXHIBIT OF PREMIUMS WRITTEN**

Allocated by States and Territories

			Direct Business Only					
			1	2	3	4	5	6
States, Etc.			Life (Group and Individual)	Annuities (Group and Individual)	Disability Income (Group and Individual)	Long-Term Care (Group and Individual)	Deposit-Type Contracts	Totals
1. Alabama	AL	102,658,238	50,550,671	4,536,094	1,589,507	47,686,229	207,020,739	
2. Alaska	AK	3,115,943	2,749,875	316,060	39,902	934,367	7,156,147	
3. Arizona	AZ	63,862,053	70,517,184	6,064,904	2,835,098	11,531,954	154,811,193	
4. Arkansas	AR	71,710,455	21,767,295	1,580,774	346,588	13,943,938	109,349,050	
5. California	CA	579,323,816	363,586,675	37,192,231	21,548,091	385,105,884	1,386,756,697	
6. Colorado	CO	95,277,270	31,506,354	6,427,958	3,985,567	29,147,213	166,344,362	
7. Connecticut	CT	154,545,993	79,131,065	15,460,744	4,488,637	35,508,283	289,134,722	
8. Delaware	DE	25,123,512	17,483,022	1,072,524	544,278	1,616,135,794	1,660,359,130	
9. District of Columbia	DC	24,131,249	8,772,945	2,754,334	1,166,693	3,330,660	40,155,881	
10. Florida	FL	498,691,080	230,797,694	17,009,440	12,148,432	254,570,070	1,013,216,716	
11. Georgia	GA	165,157,569	287,509,098	14,906,638	6,880,671	53,233,777	527,687,753	
12. Hawaii	HI	18,057,338	15,923,916	1,622,910	1,324,814	10,914,845	47,843,823	
13. Idaho	ID	21,425,653	12,274,105	778,310	486,964	9,249,336	44,214,368	
14. Illinois	IL	215,901,575	170,177,558	18,853,714	5,758,118	79,591,562	490,282,527	
15. Indiana	IN	96,057,403	60,465,815	7,321,649	1,638,664	20,339,350	185,822,881	
16. Iowa	IA	63,007,362	55,994,422	2,125,564	1,701,999	9,977,377	132,806,724	
17. Kansas	KS	97,719,839	28,230,205	3,918,043	1,758,274	15,962,294	147,588,655	
18. Kentucky	KY	29,453,260	50,784,085	3,503,005	1,407,021	54,919,847	140,067,218	
19. Louisiana	LA	61,805,649	22,399,064	4,171,558	1,364,010	26,735,502	116,475,783	
20. Maine	ME	44,921,870	11,237,004	1,410,197	843,271	2,483,897	60,896,239	
21. Maryland	MD	116,040,463	66,228,011	17,351,112	10,695,732	48,929,335	259,244,653	
22. Massachusetts	MA	173,907,317	297,991,416	20,753,897	9,692,125	44,814,896	547,159,651	
23. Michigan	MI	145,082,999	120,186,755	8,436,701	5,446,348	38,461,766	317,614,569	
24. Minnesota	MN	64,143,610	53,130,673	5,795,581	2,534,500	114,375,232	239,979,596	
25. Mississippi	MS	38,686,190	25,831,047	7,960,344	2,089,242	27,414,343	101,981,166	
26. Missouri	MO	95,708,850	50,634,355	7,688,413	2,660,555	34,966,044	191,658,217	
27. Montana	MT	17,031,736	8,273,216	752,040	357,823	8,434,668	34,849,483	
28. Nebraska	NE	55,500,712	90,080,360	2,931,373	2,921,817	9,046,527	160,480,789	
29. Nevada	NV	29,134,589	18,247,835	2,474,039	834,052	14,133,069	64,823,584	
30. New Hampshire	NH	27,573,325	26,110,622	2,649,971	1,563,942	15,775,742	73,673,602	
31. New Jersey	NJ	354,738,851	147,341,414	27,528,169	9,531,814	89,271,377	628,411,625	
32. New Mexico	NM	39,800,884	10,388,495	1,112,921	951,818	8,050,067	60,304,185	
33. New York	NY	960,654,470	434,766,231	59,418,110	20,521,321	90,470,445	1,565,830,577	
34. North Carolina	NC	163,431,092	179,482,191	19,294,664	8,170,784	100,313,092	470,691,823	
35. North Dakota	ND	10,314,990	8,837,416	415,985	152,433	15,299,045	35,019,869	
36. Ohio	OH	145,175,436	253,202,759	11,008,238	4,794,749	43,689,539	457,870,721	
37. Oklahoma	OK	78,528,537	42,994,159	4,992,339	2,659,810	21,461,616	150,636,461	
38. Oregon	OR	24,340,362	26,130,168	3,110,376	1,456,315	15,435,861	70,473,082	
39. Pennsylvania	PA	258,398,148	472,344,174	26,364,816	12,834,657	18,726,708	788,668,503	
40. Rhode Island	RI	22,240,028	13,897,061	2,142,343	833,341	3,181,417	42,294,190	
41. South Carolina	SC	63,959,204	63,014,667	9,263,688	4,931,512	21,923,995	163,093,066	
42. South Dakota	SD	11,168,066	12,715,484	399,274	250,313	3,025,198	27,558,335	
43. Tennessee	TN	96,711,195	78,072,454	11,472,413	5,129,047	42,069,884	233,454,993	
44. Texas	TX	391,781,948	254,570,140	30,329,422	15,920,067	222,255,601	914,857,178	
45. Utah	UT	45,666,481	32,089,417	2,992,568	1,074,840	33,186,451	115,009,757	
46. Vermont	VT	18,751,867	6,339,466	843,428	411,043	2,909,680	29,255,484	
47. Virginia	VA	198,897,064	332,084,970	18,025,682	12,222,053	75,117,689	636,347,458	
48. Washington	WA	123,348,890	47,443,059	6,378,200	3,590,412	9,077,426	189,837,987	
49. West Virginia	WV	12,050,715	16,231,594	1,038,464	541,418	27,865,562	57,727,753	
50. Wisconsin	WI	94,907,643	137,163,928	3,810,293	2,141,751	7,587,914	245,611,529	
51. Wyoming	WY	8,011,969	1,982,682	377,402	251,663	534,523	11,158,239	
52. American Samoa	AS							
53. Guam	GU	125		7,079			7,204	
54. Puerto Rico	PR	62,304,860	12,598,292	6,871,694	1,627,235	1,311,935	84,714,016	
55. U.S. Virgin Islands	VI	16,399		23,991		2,360	42,750	
56. Northern Mariana Islands	MP							
57. Canada	CAN	1,969,841	55,905	105,475		74,304	2,205,525	
58. Aggregate Other Alien	OT	17,412,180	2,355,631	514,120	11,153		20,293,084	
59. Total		6,399,338,163	4,934,674,099	475,661,276	220,662,284	3,890,495,490	15,920,831,312	

## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

The following entities are general partner level or above of **Massachusetts Mutual Life Insurance Company** (Parent)

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
<b>MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY</b>	04-1590850	65935	Massachusetts
<b>Direct &amp; Indirect Owned Subsidiaries:</b>			
C.M. Life Insurance Company	06-1041383	93432	Connecticut
MML Bay State Life Insurance Company	43-0581430	70416	Connecticut
CML Mezzanine Investor, LLC	06-1041383		Delaware
CML Mezzanine Investor L, LLC	06-1041383		Delaware
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		Delaware
MML Mezzanine Investor L, LLC	04-1590850		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
Timberland Forest Holding LLC	47-5322979		Delaware
Lyme Adirondack Forest Company, LLC	None		Delaware
Lyme Adirondack Timber Sales, Inc.	20-5305426		New York
Lyme Adirondack Timberlands I, LLC	None		Delaware
Lyme Adirondack Timberlands II, LLC	None		Delaware
WP-SC, LLC*	26-4441097		Delaware
MSP-SC, LLC	04-1590850		Delaware
MSI Financial Services, Inc.	13-3175978		Delaware
Country Club Office Plaza LLC*	27-1435692		Delaware
Invicta Advisors LLC	56-2574604		Delaware
Jefferies Finance LLC*	27-0105644		Delaware
Apex Credit Partners LLC	None		Delaware
JFIN Fund III LLC	None		Delaware
JFIN Asset Management LLC	None		Delaware
JFIN Co-Issuer Corporation	None		Delaware
JFIN Europe GP, S.a.r.l.	None		Luxembourg
Jefferies Finance Europe, SCSp	None		Luxembourg
Jefferies Finance Business Credit LLC	None		Delaware
JFIN Business Credit Fund I LLC	None		Delaware
JFIN High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO Holdings LLC	None		Delaware
JFIN CLO 2007 Ltd.	None		Cayman Islands
JFIN CLO 2012 Ltd.	None		Cayman Islands
JFIN CLO 2013 Ltd.	None		Cayman Islands
JFIN CLO 2014 Ltd.	None		Cayman Islands
JFIN CLO 2014-II Ltd.	None		Cayman Islands
JFIN MM CLO 2014 Ltd.*	None		Cayman Islands

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
JFIN CLO 2015 Ltd.*	None		Cayman Islands
JFIN CLO 2015-II Ltd.*	None		Cayman Islands
JFIN Revolver CLO Ltd.	None		Cayman Islands
JFIN Revolver CLO 2014 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2015 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2015-II Ltd.	None		Cayman Islands
JFIN CLO 2016 Ltd.*	None		Cayman Islands
MassMutual Retirement Services, LLC	04-1590850		Delaware
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Mezzanine Investor, LLC	04-1590850		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
MMC Equipment Finance LLC	04-1590850		Delaware
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2009-A	27-1379258		Delaware
MMAF Equipment Finance LLC 2011-A	45-2589019		Delaware
MML Private Placement Investment Company I, LLC	04-1590850		Delaware
MML Private Equity Fund Investor LLC	04-1590850		Delaware
MM Private Equity Intercontinental LLC	04-1590850		Delaware
Pioneers Gate LLC	45-2738137		Delaware
MSC Holding Company, LLC	45-4376777		Delaware
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MassMutual Holding LLC	04-2854319		Delaware
Fern Street LLC	37-1732913		Delaware
First Mercantile Trust Company	62-0951563		Tennessee
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
MassMutual Capital Partners LLC	04-1590850		Delaware
MassMutual Ventures LLC	47-1296410		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
MML Investors Services, LLC	04-1590850		Massachusetts
MML Insurance Agency, LLC	04-1590850		Massachusetts
MMLISI Financial Alliances, LLC	41-2011634		Delaware
Society of Grownups, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
Barings Finance LLC	80-0875475		Delaware
BCF Europe Funding Limited	None		Ireland
BCF Senior Funding I LLC	None		Delaware
BCF Senior Funding I Designated Activity Company	None		Ireland

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## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings (UK) Limited	98-0432153		United Kingdom
Barings GPC GP S.à.r.l.	None		Luxembourg
Almack Mezzanine GP III Limited	None		United Kingdom
Almack Holding Partnership GP Limited	None		United Kingdom
Almack Mezzanine Fund Limited	None		United Kingdom
Almack Mezzanine Fund II Limited	None		United Kingdom
Barings Global Advisors Limited	98-1012393		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Babson European Direct Lending 1 GP LLP	None		United Kingdom
Barings Advisers (Japan) KK	None		Japan
Barings Multifamily Capital Holdings LLC	None		Delaware
Barings Multifamily Capital LLC	None		Michigan
Barings Multifamily Capital Corporation	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		California
Barings Real Estate Advisers Japan KK	None		Japan
Barings Real Estate UK Holdings Limited	None		Delaware
BREAE AIFM LLP	None		United Kingdom
Barings Real Estate Advisers (Continental Europe) Limited	98-0654401		United Kingdom
Barings Real Estate Advisers Europe LLP	98-0654388		United Kingdom
Barings Real Estate Advisers Europe Finance LLP	98-0654412		United Kingdom
Barings Real Estate Advisers GmbH	98-1194368		Germany
MassMutual Baring Holding LLC	04-1590850		Delaware
Baring North America LLC	98-0241935		Massachusetts
MassMutual Holdings (Bermuda) Limited	None		Bermuda
Baring Asset Management Limited	98-0241935		United Kingdom
Baring International Investment Limited	98-0457328		United Kingdom
Baring International Investment Management Holdings Limited	98-0457587		United Kingdom
Baring Asset Management UK Holdings Limited	98-0457576		United Kingdom
Baring Asset Management GmbH	98-0465031		Germany
Baring Asset Management (Asia) Holdings Limited	98-0524271		Hong Kong, Special Administrative Region of China
Baring International Fund Managers (Bermuda) Limited	98-0457465		Bermuda
Baring Asset Management (Asia) Limited	98-0457463		Hong Kong, Special Administrative Region of China
Baring Asset Management Korea Limited	None		Korea
Baring Asset Management (Japan) Limited	98-0236449		Japan
Baring Asset Management (Australia) Pty Limited	98-0457456		Australia
Baring International Fund Managers (Ireland) Limited	98-0524272		Ireland
Baring Asset Management Switzerland Sàrl	None		Switzerland
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC

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## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Baring France SAS	98-0497550		France
Baring Fund Managers Limited	98-0457586		United Kingdom
Baring Pension Trustees Limited	98-0457574		United Kingdom
Baring Investment Services Limited	98-0457578		United Kingdom
Barings Australia Holding Company Pty Ltd	None		Australia
Barings Australia Pty Ltd	98-0457456		Australia
Barings Investment Advisers (Hong Kong) Limited	None		Hong Kong, Special Administrative Region of China
Alchemy Copyrights, LLC.*	47-2642354		Delaware
Chassis Acquisition Holding LLC	81-2244465		Delaware
CRA Aircraft Holding LLC*	81-4258759		Delaware
Milestone Acquisition Holding, LLC.	47-3055009		Delaware
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
Solar Acquisition Holding, LLC	None		Delaware
Sweet Tree Holdings 1, LLC	46-3123110		Delaware
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
U.S. Buyer Broadcasting, LLC	47-1855920		Delaware
U.S. WIG Holdings, LP	46-1500495		Delaware
U.S. Pharmaceuticals Holdings II, LLC	47-5436800		Delaware
VGS Acquisition Holding, LLC	None		Delaware
WC Aircraft Holdings US II, LLC	46-3378584		Delaware
Wood Creek Aircraft Holding I, LP	None		Cayman Islands
Babson Capital Floating Rate Income Fund Management, LLC	04-1590850		Delaware
Babson Global Loan Feeder Management, LLC	None		Delaware
Barings CLO Investment Partners GP, LLC	None		Delaware
Barings Global Energy Infrastructure Advisors, LLC	None		Delaware
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings TERO Management LLC	None		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands
Great Lakes III GP, LLC	04-1590850		Delaware
Loan Strategies Management LLC	04-1590850		Delaware
Mezzco LLC	04-1590850		Delaware
Mezzco II LLC	02-0767001		Delaware
Mezzco III LLC	41-2280126		Delaware
Mezzco IV LLC	80-0920285		Delaware
Mezzco Australia LLC	90-0666326		Delaware
Mezzco Australia II LLC	None		Delaware
SDCOS Management LLC	04-1590850		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
 PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Oppenheimer Acquisition Corp.	84-1149206		Delaware
OppenheimerFunds, Inc.	13-2527171		Colorado
OppenheimerFunds Distributor, Inc.	13-2953455		New York
Oppenheimer Real Asset Management, Inc.	84-1106295		Delaware
OFI Global Institutional, Inc.	13-4160541		New York
OFI Global Trust Company	13-3459790		New York
OFI International, Ltd.	None		United Kingdom
HarbourView Asset Management Corporation	22-2697140		New York
Trinity Investment Management Corporation	25-1951632		Pennsylvania
OFI SteelPath, Inc.	84-1128397		Delaware
Shareholder Services, Inc.	84-1066811		Colorado
VTL Associates, LLC	None		Pennsylvania
Index Management Solutions, LLC	None		Pennsylvania
OFI Global Asset Management, Inc.	84-0765063		Delaware
OFI Private Investments Inc.	91-2036414		New York
Tremont Group Holdings, LLC	62-1210532		New York
Tremont Partners, LLC	06-1121864		Connecticut
Tremont GP, LLC	20-8215352		Delaware
Settlement Agent LLC	90-0874510		Delaware
Tremont (Bermuda) Limited	None		Bermuda
MassMutual International LLC	04-3313782		Delaware
MassMutual Asia Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Asia Investors Ltd.	None		Hong Kong, Special Administrative Region of China
MassMutual Guardian Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Insurance Consultants Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Services Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Trustees Limited	None		Hong Kong, Special Administrative Region of China
Protective Capital (International) Limited	98-0610331		Hong Kong, Special Administrative Region of China
MassMutual Life Insurance Company	None		Japan
MassMutual Internacional (Chile) SpA	98-1033127		Chile
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
Cornerstone Global REIT Corporation	20-8730751		Delaware
<b>Other Affiliates &amp; Funds:</b>			
100 w. 3 <sup>rd</sup> Street LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	04-1590850		Delaware

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
**PART 1 – ORGANIZATIONAL CHART**

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
300 South Tryon LLC	04-1590850		Delaware
54 West Capital LLC	20-3887968		Delaware
Alexandria Towers Investors LLC	16-1720387		Delaware
Almack Mezzanine Fund I LP*	None		United Kingdom
Almack Mezzanine Fund II Unleveraged LP	None		United Kingdom
Almack Mezzanine Fund III LP*	None		United Kingdom
Barings Emerging Markets Corporate Bond Fund	None		Ireland
Barings Emerging Markets Local Debt Fund	None		Ireland
Barings Global Special Situations Credit Fund 1	None		Ireland
Babson Capital Global Special Situation Credit Fund 2*	98-1206017		Delaware
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2007-I	None		Cayman Islands
Babson CLO Ltd. 2012-I	None		Cayman Islands
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2013-II	98-1128827		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2014-II	None		Cayman Islands
Babson CLO Ltd. 2014-III	None		Cayman Islands
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
Babson Euro CLO 2016-I BV	None		Netherlands
Babson Capital Global Credit Fund (Lux) SCSp, SIACV-SIF	None		Luxembourg
Baring Emerging Market Corp Debt Fund	None		Ireland
Baring Focused EAFE Equity Fund	11-3789446		Delaware
Baring Global Dynamic Asset Allocation Fund	30-0607379		Delaware
Baring International Small Cap Equity Fund	26-4142796		Delaware
Barings CLO Investment Partners LP*	81-0841854		Delaware
Barings Real Estate European Value Add I SCSp*	None		United Kingdom
Benton Street Partners I, L.P.*	98-0536233		Cayman Islands
Benton Street Partners II, L.P.*	98-0536199		Cayman Islands
Braemar Energy Ventures I, L.P. *	None		Delaware
Cambridge Hotel, LLC	06-1614196		Delaware
Cheyenne Mountain Resort LLC	04-1590850		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**  
 PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Cornerstone Core Mortgage Venture I LP	27-1701622		Delaware
Cornerstone Enhanced Mortgage Fund I LP	45-3751572		Delaware
Cornerstone Global Real Estate LP*	20-8730751		Delaware
Cornerstone High Yield Venture LP	36-4770946		Delaware
Cornerstone Hotel Income and Equity Fund II LP	26-1828760		Delaware
Barings/LAZ Parking Fund LP	46-5437441		Delaware
Barings Core Property Fund LP	20-5578089		Delaware
Cornerstone Real Estate Fund VIII LP	27-0547156		Delaware
Cornerstone Real Estate Fund X LP	46-5432619		Delaware
Duchess VI CLO B.V.	None		United Kingdom
Duchess VII CLO B.V.	None		United Kingdom
E-Wise Land Venture LLC	20-3887968		Delaware
Gateway Mezzanine Partners I, L.P.*	80-0691253		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
Kazwell Realty Partners LLC	20-3887968		Delaware
King Alexander LLC	45-3754085		Delaware
Marco Hotel LLC	46-4255307		Delaware
MM Debt Participations LLC*	81-3000420		Delaware
MML O'Hare Hotel LLC	26-3799762		Delaware
Oakley Grove Development LLC	20-3887968		Delaware
Old Pasco Properties LLC	20-3887968		Delaware
Reston Arboretum LLC	75-2901061		Delaware
Riva Portland LLC	30-0713071		Delaware
Rockall CLO B.V.	None		United Kingdom
Rockville Town Center LLC	54-2055778		Virginia
SDCOS L.P.	74-3182902		Delaware
Seattle 1415 Hotel Owner LLC	46-5491311		Delaware
Sedona TFMP Land LLC	04-1590850		Delaware
Somerset Special Opportunities Fund L.P.*	20-8856877		Delaware
South Myrtle Monrovia MM LLC	04-1590850		Delaware
South Pasco Properties LLC	20-3887968		Delaware
Tower Square Capital Partners, L.P.*	04-3722906		Delaware
Tower Square Capital Partners II, L.P.*	30-0336246		Delaware
Tower Square Capital Partners II-A, L.P.*	32-0160190		Delaware
Tower Square Capital Partners III, L.P.*	41-2280127		Delaware
Tower Square Capital Partners IIIA, L.P.	41-2280129		Delaware
Tower Square Capital Partners IV-A, L.P.	80-0920367		Delaware
West 46 <sup>th</sup> Street Hotel LLC	05-1590850		Delaware
<b>Baring Affiliates &amp; Funds:</b>			
Barings Emerging Markets Debt Blended Total Return Fund	None		Ireland

\*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Emerging Markets Debt Short Duration Fund	None		Ireland
Barings Emerging Markets Sovereign Debt Fund	None		Ireland
Babson Capital Floating Rate Income Fund, L.P.	27-3330830		Delaware
Barings Global Investment Grade Corporate Plus Fund	None		Ireland
Babson Capital Loan Strategies Master Fund LP	None		Cayman Islands
Barings Emerging Markets Debt Blended Total Return Fund	47-3758432		Massachusetts
Barings Emerging Markets Local Currency Debt Fund	47-3774453		Massachusetts
Barings Global High Yield Fund	47-3790192		Massachusetts
Baring Greater China Equity Fund	None		Hong Kong
Barings Total Return Bond Fund	47-3734770		Massachusetts
Barings U.S. High Yield Fund	47-3801860		Massachusetts
Gateway Mezzanine Partners I Trust	None		Australia
Great Lakes II LLC*	71-1018134		Delaware
Great Lakes LLC*	56-2505390		Delaware
Intermodal Holding II LLC	46-2344300		Delaware
Somerset Special Opportunities Master Fund LP	None		Cayman Islands
Wood Creek Venture Fund LLC	04-1590850		Delaware
<b>Barings Real Estate Affiliates &amp; Funds:</b>			
12-18 West 55th Street Predevelopment, LLC*	20-2548283		Delaware
50 Liberty LLC*	36-4823011		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
2 Harbor Shore Member LLC*	46-4803557		Delaware
AT Mid-Atlantic Office Portfolio LLC*	45-2779931		Delaware
Barings Global Energy Infrastructure Fund I LP	04-1590850		Kentucky
Budapester Strasse LLC	81-4382111		Delaware
CHC/RFP VI Core LLC	04-1590850		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone Fort Pierce Development LLC*	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Cornerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
CREA 330 Third LLC*	46-5001122		Delaware
CREA FMF Nashville LLC	46-4367364		Delaware
CREA/LYON West Gateway, LLC*	26-2399532		Delaware
CREA Madison Member LLC	81-0890084		Delaware
CREA/PPC Venture LLC*	20-0348173		Delaware
Fallon Cornerstone One MPD LLC*	26-1611591		Delaware
Fan Pier Development LLC*	20-3347091		Delaware

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## SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

### PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Farrington London Holdings LLC*	46-3880526		Delaware
Infinity SCD Ltd.	None		United Kingdom
Johnston Groves LLC	20-4819358		Delaware
MM Chatham Office LLC*	81-2871333		Delaware
MMI/Hines Harrison LLC*	46-5347643		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
Sawgrass Village Shopping Center LLC*	27-2977720		Delaware
Ten Fan Pier Boulevard LLC*	None		Delaware
Twenty Two Liberty LLC*	35-2484550		Massachusetts
UK LIW Manager LLC	45-4606547		Delaware
UK LIW Member LLC	45-4606547		Delaware
Washington Gateway Apartments Venture LLC*	45-5401109		Delaware
Waterford Development Associates	20-2970495		Delaware
Waterloo London Holdings LLC	47-1993493		Delaware
WeHo Domain LLC*	46-3122029		Delaware
Willowood Lakeside Master LLC	81-1552222		Delaware
Ygnatio Valley Funding	20-5481477		Delaware
<b>MassMutual Premier Funds:</b>			
MassMutual Barings Dynamic Allocation Fund	45-3168892		Massachusetts
MassMutual Premier Focused International Fund	02-0754273		Massachusetts
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
MassMutual Premier Value Fund	04-3277550		Massachusetts
<b>MassMutual Select Funds:</b>			
MassMutual Select Diversified International Fund	14-1980900		Massachusetts
MassMutual Select Diversified Value Fund	01-0821120		Massachusetts
MassMutual Select Fundamental Growth Fund	04-3512593		Massachusetts
MassMutual Select Large Cap Value Fund	04-3513019		Massachusetts
MassMutual Select Mid-Cap Value Fund	42-1710935		Massachusetts
MassMutual Select Small Capital Value Equity Fund	02-0769954		Massachusetts
MassMutual Select Small Company Value Fund	04-3584140		Massachusetts
<b>MML Series Investment Funds:</b>			
MML Series International Equity Fund	46-4257056		Massachusetts
<b>MML Series Investment Funds II:</b>			
MML Series II Asset Momentum Fund	47-3517233		Massachusetts
MML Series II Dynamic Bond Fund	47-3529636		Massachusetts
MML Series II Equity Rotation Fund	47-3544629		Massachusetts
MML Series II Special Situations Fund	47-3559064		Massachusetts
<b>MassMutual RetireSMART Funds:</b>			
MassMutual RetireSMART 2055 Fund	46-3289207		Massachusetts
MassMutual RetireSMART 2060 Fund	47-5326235		Massachusetts

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**SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP**

PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual RetireSMART Conservative Fund	45-1618155		Massachusetts
MassMutual RetireSMART Growth Fund	45-1618222		Massachusetts
MassMutual RetireSMART Moderate Fund	45-1618262		Massachusetts
MassMutual RetireSMART Moderate Growth Fund	45-1618046		Massachusetts
<b>Oppenheimer Funds:</b>			
Oppenheimer Developing Markets Fund	93-6305075		Delaware
Oppenheimer Developing Markets Equity UCITS	None		Ireland
Oppenheimer Emerging Markets Innovators UCITS	None		Ireland
Oppenheimer ESG Revenue ETF	81-3492794		Delaware
Oppenheimer Global ESG Revenue ETF	81-3480754		Delaware
Oppenheimer Global Equity UCITS	None		Ireland
Oppenheimer Global High Yield Fund	45-3417590		Delaware
Oppenheimer Global Multi-Asset Growth Fund	47-3676235		Delaware
Oppenheimer Global Multi-Asset Income Fund	47-1714929		Delaware
Oppenheimer Global Real Estate Fund*	46-1604428		Delaware
Oppenheimer Global Value Equity UCITS	None		Ireland
Oppenhemier International Growth & Income Fund	81-3136071		Delaware
Oppenheimer Macquarie Global Infrastructure Fund	81-1080638		Delaware
Oppenheimer SteelPath Panoramic Fund	47-3987967		Delaware

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0435	Massachusetts Mut Life Ins Co	65935	04-1590850	3848388	0000225602		Massachusetts Mutual Life Insurance Company (MMLIC)	MA	RE	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	CM Life Ins Co	93432	06-1041383				C.M. Life Insurance Company	CT	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	MML Baystate Life Ins Co	70416	43-0581430		0000924777		MML Bay State Life Insurance Company	CT	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor L, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor III, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Special Situations Investor LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor L, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MML Special Situations Investor LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	C.M. Life Insurance Company	Ownership	5.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	Wood Creek Capital Management LLC	Management		MMLIC		
.0000							Lyme Adirondack Forest Company, LLC	DE	DS	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000			20-5305426				Lyme Adirondack Timber Sales, Inc.	NY	DS	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands I, LLC	DE	DS	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands II, LLC	DE	DS	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Berkshire Way LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-4441097				WP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	81.400	MMLIC		
.0000			26-4441097				WP-SC, LLC	DE	DS	C.M. Life Insurance Company	Ownership	18.600	MMLIC		
.0000			04-1590850				MSP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			13-3175978				MSI Financial Services, Inc.	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			27-1435692				Country Club Office Plaza LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	88.100	MMLIC		
.0000			27-1435692				Country Club Office Plaza LLC	DE	DS	C.M. Life Insurance Company	Ownership	11.900	MMLIC		
.0000			56-2574604				Invicta Advisors LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-0105644				Jefferies Finance LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		1
.0000							Apex Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Fund III LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Asset Management LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Co-Issuer Corporation	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Europe GP, S.a.r.l.	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Europe, SCSp	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Business Credit LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Business Credit Fund I LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2007 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2012 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2013 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	70.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	30.000	MMLIC		
.0000							JFIN CLO 2014-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000							JFIN MM CLO 2014 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2015 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	44.000	MMLIC		
.0000							JFIN CLO 2015 Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	56.000	MMLIC		
.0000							JFIN CLO 2015-II Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	33.000	MMLIC		
.0000							JFIN CLO 2015-II Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	53.000	MMLIC		
.0000							JFIN Revolver CLO Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2014 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2015 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2015-II Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2016 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Retirement Services, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3356880		0000943903		MML Distributors LLC	.MA	.DS	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLIC		
.0000			04-3356880		0000943903		MML Distributors LLC	.MA	.DS	MassMutual Holding LLC	Ownership	1.000	MMLIC		
.0000							MML Investment Advisers, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3238013				MML Strategic Distributors, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1563535	2881445	0001103653		The MassMutual Trust Company, FSB	.CT	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			04-1590850				MMC Equipment Finance LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	.DS	MMC Equipment Finance LLC	Ownership	99.600	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	.DS	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			27-1379258				MMAF Equipment Finance LLC 2009-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			45-2589019				MMAF Equipment Finance LLC 2011-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Private Placement Investment Company I, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850		0000067160		MML Private Equity Fund Investor LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Private Equity Intercontinental LLC	.DE	NIA	MML Private Equity Fund Investor LLC	Ownership	100.000	MMLIC		
.0000			45-2738137				Pioneers Gate LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-4376777				MSC Holding Company, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			04-3341767				MassMutual Holding MSC, Inc.	.MA	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-2854319	2392316			MassMutual Holding LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			06-1597528				MassMutual Assignment Company	.NC	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			37-1732913				Fern Street LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			62-0951563	1160004	0001259664		First Mercantile Trust Company	.TN	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			46-2252944				Haven Life Insurance Agency, LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850		0001399869		MassMutual Capital Partners LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1296410				MassMutual Ventures LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Rothesay Holdco US LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1466022				Society of Growups, LLC	.MA	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850		0000701059		MML Investors Services, LLC	.MA	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Insurance Agency, LLC	.MA	.DS	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			41-2011634		0001456663		MMLISI Financial Alliances, LLC	.DE	.DS	MML Investors Services, LLC	Ownership	51.000	MMLIC		
.0000			45-4000072				MM Asset Management Holding LLC	.DE	.DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			51-0504477		0000009015		Barings LLC	.DE	.DS	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		

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**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			80-0875475				Barings Finance LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BCF Europe Funding Limited	IRL	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I LLC	DE	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I Designated Activity Company	IRL	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000			04-3238351		0000930012		Barings Securities LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0437588				Barings Guernsey Limited	GGY	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0432153				Barings (UK) Limited	GBR	DS	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							Barings GPC GP S.a.r.l	LUX	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine GP III Limited	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Almack Holding Partnership GP Limited	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund Limited	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund II Limited	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000			98-1012393				Barings Global Advisors Limited	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							BCGSS 2 GP LLP	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Babson European Direct Lending 1 GP LLP	GBR	DS	Barings (U.K.) Limited	Ownership	100.000	MMLIC		
.0000							Barings Advisers (Japan) KK	JPN	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital Holdings LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital LLC	WI	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital Corporation	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-3238351	3456895	0001011148		Barings Real Estate Advisers Inc.	CA	DS	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000							Barings Real Estate Advisers Japan KK	JPN	DS	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000							Barings Real Estate UK Holdings Limited	DE	DS	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000							BREA E AIFM LLP	GBR	DS	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000			98-0654401				Barings Real Estate Advisers (Continental Europe) Limited	GBR	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0654388				Barings Real Estate Advisers Europe LLP	GBR	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0654412				Barings Real Estate Advisers Europe Finance LLP	GBR	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-1194368				Barings Real Estate Advisers GmbH	DEU	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Baring Holding LLC	DE	DS	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0241935	2363071	0000932463		Baring North America LLC	IA	DS	MassMutual Baring Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Holdings (Bermuda) Limited	BMU	DS	MassMutual Baring Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0241935				Baring Asset Management Limited	GBR	DS	MassMutual Holdings (Bermuda) Limited	Ownership	100.000	MMLIC		
.0000			98-0457328		0001568131		Baring International Investment Limited	GBR	DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457587				Baring International Investment Management Holdings	GBR	DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457576				Baring Asset Management UK Holdings Limited	GBR	DS	Baring International Investment Management Holdings	Ownership	100.000	MMLIC		
.0000			98-0465031				Baring Asset Management GmbH	DEU	DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0524271				Baring Asset Management (Asia) Holdings Limited	HKG	DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457465				Baring International Fund Managers (Bermuda) Limited	BMU	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457463				Baring Asset Management (Asia) Limited	HKG	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Baring Asset Management Korea Limited	KOR	DS	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000			98-0236449				Baring Asset Management (Japan) Limited	JPN	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457456				Baring Asset Management (Australia) Pty Limited	AUS	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0524272				Baring International Fund Managers (Ireland) Limited	IRL	DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0000							Baring Asset Management Switzerland Sarl	.CHE	.DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457707				Baring SICE (Taiwan) Limited	.TWN	.DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0497550				Baring France SAS	.FRA	.DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457586				Baring Fund Managers Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457574				Baring Pension Trustees Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457578				Baring Investment Services Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457456				Barings Australia Holding Company Pty Ltd	.AUS	.DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Australia Pty Ltd	.AUS	.DS	Baring Australia Holding Company Pty Ltd.	Ownership	100.000	MMLIC		
.0000							Barings Investment Advisors (Hong Kong) Limited	.HKG	.DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			47-2642354				Alchemy Copyrights, LLC.	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	15.200	MMLIC		
.0000			47-2642354				Alchemy Copyrights, LLC.	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.100	MMLIC		
.0000			47-2642354				Alchemy Copyrights, LLC.	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	30.000	MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC.	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	18.300	MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC.	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC.	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	15.800	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	.CT	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	66.700	MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	.CT	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			46-3123110				Sweet Tree Holdings 1, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	16.100	MMLIC		
.0000			46-3123110				Sweet Tree Holdings 1, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000							Tamiami Citrus, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.700	MMLIC		
.0000							Teaktree Acquisition, LLC	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	14.700	MMLIC		
.0000							Teaktree Acquisition, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000							U.S. Buyer Broadcasting, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	12.700	MMLIC		
.0000							U.S. Buyer Broadcasting, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			46-1500495				U.S. WIG Holdings, LP	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	11.700	MMLIC		
.0000			46-1500495				U.S. WIG Holdings, LP	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000			20-2970495				US Pharmaceutical Holdings II, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.600	MMLIC		
.0000			20-2970495				US Pharmaceutical Holdings II, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000							Solar Acquisition Holding, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	39.200	MMLIC		
.0000							Solar Acquisition Holding, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Management		MMLIC		
.0000							VGS Acquisition Holding, LLC	.DE	.NIA	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
.0000							VGS Acquisition Holding, LLC	.DE	.NIA	Wood Creek Capital Management LLC	Management		MMLIC		
.0000			46-3378584				WC Aircraft Holdings US II, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	17.900	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			46-3378584				WC Aircraft Holdings US II, LLC	DE	NIA	Wood Creek Capital Management LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000							Wood Creek Aircraft Holding I, LP	CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership	12.100	MMLIC		
.0000							Wood Creek Aircraft Holding I, LP	CYM	NIA	Wood Creek Capital Management LLC	Management		MMLIC		
.0000			04-1590850		0001501011		Babson Capital Floating Rate Income Fund Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Babson Global Loan Feeder Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings CLO Investment Partners GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Energy Infrastructure Advisors, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings TERO Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0536233				Benton Street Advisors, Inc.	CYM	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				SDCOS Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Great Lakes III GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Loan Strategies Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Mezzco LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			02-0767001				Mezzco II LLC	DE	DS	Barings LLC	Ownership	98.400	MMLIC		
.0000			41-2280126				Mezzco III LLC	DE	DS	Barings LLC	Ownership	99.300	MMLIC		
.0000			80-0920285				Mezzco IV LLC	DE	DS	Barings LLC	Ownership	99.300	MMLIC		
.0000			90-0666326				Mezzco Australia LLC	DE	DS	Barings LLC	Ownership	72.000	MMLIC		
.0000							Mezzco Australia II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Somerset Special Opportunities Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Oppenheimer Acquisition Corp.	DE	DS	MassMutual Asset Management Holding LLC	Ownership	97.100	MMLIC		
.0000			84-1149206	2897101			OppenheimerFunds, Inc.	CO	DS	Oppenheimer Acquisition Corp.	Ownership	100.000	MMLIC		
.0000			13-2527171	2679183	0000820031		OppenheimerFunds Distributor, Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			13-2953455		0000276541		Oppenheimer Real Asset Management, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-1106295				OFI Global Institutional, Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			13-4160541	3458125	0001179479		OFI Global Trust Company	NY	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			13-3459790	2914875			OFI International, Ltd.	GBR	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000							HarbourView Asset Management Corporation	NY	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000							Trinity Investment Management Corporation	PA	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			84-1128397		0000857468		OFI SteelPath, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-1066811		0000276398		Shareholder Services, Inc.	CO	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000							VTL Associates, LLC	PA	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000							Index Management Solutions, LLC	PA	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-0765063		0001041674		OFI Global Asset Management, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			91-2036414		0001179480		OFI Private Investments Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			62-1210532				Tremont Group Holdings, LLC	NY	DS	Oppenheimer Acquisition Corp.	Ownership	100.000	MMLIC		
.0000			06-1121864		0000764139		Tremont Partners, LLC	CT	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000			20-8215352				Tremont GP, LLC	DE	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000			90-0874510				Settlement Agent LLC	DE	DS	Tremont GP	Ownership	100.000	MMLIC		
.0000							Tremont (Bermuda) Limited	BMU	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000							MassMutual International LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Asia Limited	HKG	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Asia Investors Ltd.	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Guardian Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Insurance Consultants Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Services Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Trustees Limited	HKG	DS	MassMutual Asia Limited	Ownership	80.000	MMLIC		
.0000			98-0610331				Protective Capital (International) Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			98-1033127				MassMutual Internacional (Chile) SpA	.CHL	.DS	MassMutual Internacional LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Life Insurance Company	.JPN	.DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000			04-2443240				MML Management Corporation	.MA	.DS	Company	Ownership	100.000	MMLIC	Y	
.0000			04-3548444				MassMutual International Holding MSC, Inc.	.MA	.DS	MML Management Corporation	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor II, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor III, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-3576835				MassMutual External Benefits Group LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-8730751				Cornerstone Global REIT Corporation	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			04-1590850				100 w. 3rd Street LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				300 South Tryon Hotel LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				300 South Tryon LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-3887968				54 West Capital LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			16-1720387				Alexandria Towers Investors LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund I LP	.GBR	.NIA	Company	Ownership/Influence	41.800	MMLIC		
.0000							Almack Mezzanine Fund I LP	.GBR	.NIA	C.M. Life Insurance Company	Ownership	4.600	MMLIC		
.0000							Almack Mezzanine Fund I LP	.GBR	.NIA	Barings (U.K.) Limited	Management		MMLIC		
.0000							Almack Mezzanine Fund II Unleveraged LP	.GBR	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	72.900	MMLIC		
.0000							Almack Mezzanine Fund II Unleveraged LP	.GBR	.NIA	Barings (U.K.) Limited	Management		MMLIC		
.0000							Almack Mezzanine Fund III LP	.GBR	.NIA	Company	Ownership/Influence	34.200	MMLIC		
.0000							Almack Mezzanine Fund III LP	.GBR	.NIA	C.M. Life Insurance Company	Ownership	3.800	MMLIC		
.0000							Almack Mezzanine Fund III LP	.GBR	.NIA	Barings (U.K.) Limited	Management		MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	.IRL	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	98.800	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	.IRL	.NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Local Debt Fund	.IRL	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	35.000	MMLIC		
.0000							Barings Emerging Markets Local Debt Fund	.IRL	.NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 1	.IRL	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	98.700	MMLIC		
.0000							Barings Global Special Situations Credit Fund 1	.IRL	.NIA	Barings LLC	Management		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	23.700	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	.DE	.NIA	C.M. Life Insurance Company	Ownership	1.500	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	.DE	.NIA	Barings LLC	Management		MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	78.600	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	.DE	.NIA	C.M. Life Insurance Company	Ownership	3.900	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**  
**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Management				
.0000							Barings US High Yield Bond Fund	JRL	NIA	Barings LLC	Ownership/Influence	42.200	MMLIC		
.0000							Barings US High Yield Bond Fund	JRL	NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2007-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2012-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2012-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1128827				Babson CLO Ltd. 2013-I	CYM	NIA	Barings LLC	Influence		MMLIC		4
.0000							Babson CLO Ltd. 2013-II	CYM	NIA	Barings LLC	Influence		MMLIC		5
.0000							Babson CLO Ltd. 2014-I	CYM	NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2014-II	CYM	NIA	Barings LLC	Influence		MMLIC		6
.0000							Babson CLO Ltd. 2014-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2015-I	CYM	NIA	Barings LLC	Influence		MMLIC		7
.0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		8
.0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-II BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2015-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2016-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Global Credit Fund (Lux) SCSp, SIACV-SIF	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	15.700	MMLIC		
.0000							Babson Global Credit Fund (Lux) SCSp, SIACV-SIF	LUX	NIA	Barings LLC	Management		MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.900	MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	90.000	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Barings LLC	Management		MMLIC		
.0000							Baring Emerging Market Corp Debt Fund	JRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	88.700	MMLIC		
.0000							Baring Emerging Market Corp Debt Fund	JRL	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			11-3789446				Baring Focused EAFE Equity Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.500	MMLIC		
.0000			11-3789446				Baring Focused EAFE Equity Fund	DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			30-0607379		0001497049		Baring Global Dynamic Asset Allocation Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	18.800	MMLIC		
.0000			30-0607379		0001497049		Baring Global Dynamic Asset Allocation Fund	DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	63.400	MMLIC		
.0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			98-0536233				Benton Street Partners I, L.P.	CYM	NIA	MassMutual Capital Partners LLC	Ownership/Influence	99.600	MMLIC		
.0000			98-0536233				Benton Street Partners I, L.P.	CYM	NIA	Barings LLC	Management		MMLIC		
.0000			98-0536233				Benton Street Partners I, L.P.	CYM	NIA	C.M. Life Insurance Company	Ownership	0.300	MMLIC		
.0000			98-0536233				Benton Street Partners I, L.P.	CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			98-0536199				Benton Street Partners II, L.P.	CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	28.200	MMLIC		3
.0000			98-0536199				Benton Street Partners II, L.P.	CYM	NIA	MassMutual Capital Partners LLC	Ownership	10.900	MMLIC		
.0000			98-0536199				Benton Street Partners II, L.P.	CYM	NIA	Barings LLC	Management		MMLIC		

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Y/N)	*
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	92.600	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			06-1614196				Cambridge Hotel, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Cheyenne Mountain Resort LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings European Core Property Fund SCSCp	LUX	NIA	MassMutual Holding LLC	Ownership/Influence	94.000	MMLIC		
.0000							Barings European Core Property Fund SCSCp	LUX	NIA	C.M. Life Insurance Company	Ownership	6.000	MMLIC		
.0000							Barings European Core Property Fund SCSCp	LUX	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			27-1701622		0001481752		Cornerstone Core Mortgage Venture I LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	50.000	MMLIC		
.0000			27-1701622		0001481752		Cornerstone Core Mortgage Venture I LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			45-3751572		0001534877		Cornerstone Enhanced Mortgage Fund I LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	15.600	MMLIC		
.0000			45-3751572		0001534877		Cornerstone Enhanced Mortgage Fund I LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	92.300	MMLIC		
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.600	MMLIC		
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			36-4770946		0001590049		Cornerstone High Yield Venture LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	50.000	MMLIC		
.0000			36-4770946		0001590049		Cornerstone High Yield Venture LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000							Cornerstone Hotel Income & Equity Fund II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	0.000	MMLIC		
.0000			26-1828760		0001423638		Cornerstone Hotel Income & Equity Fund II LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	10.400	MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			27-0547156				Cornerstone Real Estate Fund VIII LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	14.400	MMLIC		
.0000			27-0547156				Cornerstone Real Estate Fund VIII LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	25.100	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000					3981641		Duchess VI CLO B.V.	GBR	NIA	Barings LLC	Influence		MMLIC		
.0000					4007502		Duchess VII CLO B.V.	GBR	NIA	Barings LLC	Influence		MMLIC		
.0000			20-3887968				E-Wise Land Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			80-0691253		0001517196		Gateway Mezzanine Partners I, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	64.000	MMLIC		
.0000			80-0691253		0001517196		Gateway Mezzanine Partners I, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	7.900	MMLIC		
.0000			80-0691253		0001517196		Gateway Mezzanine Partners I, L.P.	DE	NIA	MassMutual Holding LLC	Ownership	8.900	MMLIC		
.0000			80-0691253		0001517196		Gateway Mezzanine Partners I, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	35.000	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Ownership	5.200	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	MassMutual Holding LLC	Ownership	5.400	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Barings LLC	Management		MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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.0000			37-1708623		0001565779		Great Lakes III, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	35.700	MMLIC		
.0000			37-1708623		0001565779		Great Lakes III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			20-3887968				Kazwell Realty Partners LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-3754085				King Alexander LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-4255307				Marco Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			26-3799762				MML O'Hare Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-3887968				Oakley Grove Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-3887968				Old Pasco Properties LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			75-2901061				Reston Arboretum LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			30-0713071				Riva Portland LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Rockall QLO B.V.	GBR	NIA	Barings LLC	Influence		MMLIC		
.0000			54-2055778				Rockville Town Center LLC	VA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			74-3182902				SDCOS L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			46-5491311				Seattle 1415 Hotel Owner LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Sedona TRMP Land LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-8856877		0001409910		Somerset Special Opportunities Fund L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	63.400	MMLIC		
.0000			20-8856877		0001409910		Somerset Special Opportunities Fund L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.100	MMLIC		
.0000			20-8856877		0001409910		Somerset Special Opportunities Fund L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				South Myrtle Monrovia MM LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-3887968				South Pasco Properties LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			30-0336246		0001345379		Tower Square Capital Partners II, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	28.100	MMLIC		
.0000			30-0336246		0001345379		Tower Square Capital Partners II, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	4.500	MMLIC		
.0000			30-0336246		0001345379		Tower Square Capital Partners II, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			32-0160190				Tower Square Capital Partners II-A, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	80.400	MMLIC		
.0000			32-0160190				Tower Square Capital Partners II-A, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	14.200	MMLIC		
.0000			32-0160190				Tower Square Capital Partners II-A, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			41-2280127		0001447547		Tower Square Capital Partners III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			41-2280127		0001447547		Tower Square Capital Partners III, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	3.200	MMLIC		
.0000			41-2280127		0001447547		Tower Square Capital Partners III, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	20.100	MMLIC		
.0000			41-2280129		0001447548		Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	96.600	MMLIC		
.0000			41-2280129		0001447548		Tower Square Capital Partners IIIA, L.P.	DE	NIA	Barings LLC	Management		MMLIC		

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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.0000			80-0920367		0001598727		Tower Square Capital Partners IV-A, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	21.900	MMLIC		
.0000			80-0920367		0001598727		Tower Square Capital Partners IV-A, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			04-3722906		0001228752		Tower Square Capital Partners, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	38.200	MMLIC		
.0000			04-3722906		0001228752		Tower Square Capital Partners, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	0.600	MMLIC		
.0000			04-3722906		0001228752		Tower Square Capital Partners, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				West 46th Street Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Emerging Markets Debt Blended Total Return Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Debt Short Duration Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Sovereign Debt Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000			27-3330830		0001521404		Babson Capital Floating Rate Income Fund, L.P.	DE	NIA	MassMutual Holding LLC	Ownership	0.000	MMLIC		
.0000			27-3330830		0001521404		Babson Capital Floating Rate Income Fund, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Babson Capital Loan Strategies Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Investment Grade Corporate Plus Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000			47-3758432				Barings Emerging Markets Debt Blended Total Return Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3774453				Barings Emerging Markets Local Currency Debt Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000							Baring Greater China Equity Fund	HKG	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			47-3734770				Barings Total Return Bond Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3801860				Barings U.S. High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000							Gateway Mezzanine Partners I Trust	AUS	NIA	Barings LLC	Management		MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.200	MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	C.M. Life Insurance Company	Ownership	1.000	MMLIC		
.0000			56-2505390				Great Lakes LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	4.400	MMLIC		
.0000			56-2505390				Great Lakes LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.500	MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	DE	NIA	Wood Creek Capital Management LLC	Influence		MMLIC		
.0000							Somerset Special Opportunities Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	MMLIC		
.0000			20-2548283				12-18 West 55th Street Predevelopment, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	89.200	MMLIC		
.0000			20-2548283				12-18 West 55th Street Predevelopment, LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.800	MMLIC		
.0000			46-4803557				2 Harbor Shore Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	70.800	MMLIC		
.0000			46-4803557				2 Harbor Shore Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.000	MMLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	46.100	MMLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.600	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	32.300	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership	3.200	MMLIC		
.0000			45-2779931				AT Mid-Atlantic Office Portfolio LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			45-2779931				AT Mid-Atlantic Office Portfolio LLC	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
.0000			04-1590850				Barings Global Energy Infrastructure Fund I LP	KY	NIA	Massachusetts Mutual Life Insurance Company	Ownership	80.800	MMLIC		
.0000			81-4382111				Budapester Strasse LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				CHC/RFP VI Core LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund I LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund II LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.400	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.600	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-5001122				CREA 330 Third LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.900	MMLIC		
.0000			46-5001122				CREA 330 Third LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.100	MMLIC		
.0000			46-4367364				CREA FMF Nashville LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-2399532				CREA/LYON West Gateway, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	54.000	MMLIC		
.0000			26-2399532				CREA/LYON West Gateway, LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.000	MMLIC		
.0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-0348173				CREA/PPC Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	93.400	MMLIC		
.0000			20-0348173				CREA/PPC Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.600	MMLIC		
.0000			26-1611591	3956836			Fallon Cornerstone One MPD LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	67.100	MMLIC		
.0000			26-1611591	3956836			Fallon Cornerstone One MPD LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.600	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	58.500	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.800	MMLIC		
.0000			46-3880526				Farrington London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.500	MMLIC		
.0000			46-3880526				Farrington London Holdings LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.500	MMLIC		
.0000							Infinity SCD Ltd	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership	4.200	MMLIC		
.0000			20-4819358				Johnston Groves LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	57.200	MMLIC		
.0000			81-2871333				MM Chatham Office LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.400	MMLIC		
.0000			81-2871333				MM Chatham Office LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.600	MMLIC		
.0000			46-5347643				MMI/Hines Harrison LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	82.800	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

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.0000			46-5347643				MMI/Hines Harrison LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.200	MMLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence		MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.200	MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MMLIC		
.0000							Ten Fan Pier Boulevard LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	91.000	MMLIC		
.0000							Ten Fan Pier Boulevard LLC	DE	NIA	C.M. Life Insurance Company	Ownership	9.000	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.200	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			45-4606547				UK LIW Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	1.000	MMLIC		
.0000			45-4606547				UK LIW Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	92.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			20-2970495				Waterford Development Associates	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			47-1993493				Waterloo London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	77.400	MMLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	C.M. Life Insurance Company	Ownership	12.600	MMLIC		
.0000			81-1552222				Willowood Lakeside Master LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000			20-5481477				Ygnatio Valley Funding	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			45-3168892			0Q	MassMutual Barings Dynamic Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			51-0529328			0000927972	MassMutual Premier Main Street Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.000	MMLIC		
.0000			26-3229251			0000927972	MassMutual Premier Strategic Emerging Markets Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.900	MMLIC		
.0000			04-3277550			0000927972	MassMutual Premier Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.200	MMLIC		
.0000			14-1980900			0000916053	MassMutual Select Diversified International Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	31.800	MMLIC		
.0000			01-0821120			0000916053	MassMutual Select Diversified Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	12.700	MMLIC		
.0000			04-3512593			0000916053	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	6.000	MMLIC		
.0000			04-3513019			0000916053	MassMutual Select Large Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	19.300	MMLIC		
.0000			42-1710935			0000916053	MassMutual Select Mid-Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	74.900	MMLIC		
.0000			02-0769954			0000916053	MassMutual Select Small Capital Value Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	20.300	MMLIC		
.0000			04-3584140			0000916053	MassMutual Select Small Company Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.800	MMLIC		
.0000			46-4257056			000067160	MML Series International Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	8.900	MMLIC		

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
..0000			47-3517233		0001317146		MML Series II Asset Momentum Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	96.200	MMLIC		
..0000			47-3529636		0001317146		MML Series II Dynamic Bond Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	3.600	MMLIC		
..0000			47-3544629		0001317146		MML Series II Equity Rotation Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	98.600	MMLIC		
..0000			47-3559064		0001317146		MML Series II Special Situations Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	98.700	MMLIC		
..0000			46-3289207		0000916053		MassMutual RetireSMART 2055 Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	22.100	MMLIC		
..0000			47-5326235		0000916053		MassMutual RetireSMART 2060 Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.900	MMLIC		
..0000			45-1618155		0000916053		MassMutual RetireSMART Conservative Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	9.300	MMLIC		
..0000			45-1618222		0000916053		MassMutual RetireSMART Growth Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.300	MMLIC		
..0000			45-1618262		0000916053		MassMutual RetireSMART Moderate Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.200	MMLIC		
..0000			45-1618046		0000916053		MassMutual RetireSMART Moderate Growth Fund	..MA	..NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.800	MMLIC		
..0000			93-6305075				Oppenheimer Developing Markets Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Ownership	0.900	MMLIC		
..0000							Oppenheimer Developing Markets Equity UCITS	..IRL	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000							Oppenheimer Emerging Markets Innovators UCITS	..IRL	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			81-3492794				Oppenheimer ESG Revenue ETF	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000							Oppenheimer Global Equity UCITS	..IRL	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			81-3480754				Oppenheimer Global ESG Revenue ETF	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			45-3417590		0001530245		Oppenheimer Global High Yield Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			46-1604428		0001562689		Oppenheimer Global Real Estate Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Ownership	67.900	MMLIC		
..0000			46-1604428		0001562689		Oppenheimer Global Real Estate Fund	..DE	..NIA	C.M. Life Insurance Company	Ownership	5.600	MMLIC		
..0000			46-1604428		0001562689		Oppenheimer Global Real Estate Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			47-3676235				Oppenheimer Global Multi-Asset Growth Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			47-1714929				Oppenheimer Global Multi-Asset Income Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000							Oppenheimer Global Value Equity UCITS	..IRL	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000							Oppenheimer International Growth & Income Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			81-3136071				Oppenheimer Macquarie Global Infrastructure Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			81-1080638				Oppenheimer SteelPath Panoramic Fund	..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		
..0000			47-3987967					..DE	..NIA	Oppenheimer Funds, Inc.	Management		MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns 2.03% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own 3.6% and includes only Great Lakes III, L.P.
3	Partnership investors own 99% and include Babson Capital Loan Strategies Fund, L.P.
4	Debt investors own 8.7% and includes only Babson Capital Loan Strategies Fund, L.P.
5	Debt investors own 4.3% and includes only Great Lakes III, L.P.
6	Debt investors own 5.8% and includes only Great Lakes III, L.P.
7	Debt investors own 2.0% and includes only Great Lakes III, L.P.
8	Debt investors own 4.3% and includes only Great Lakes III, L.P.

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES**

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
65935	04-1590850	Massachusetts Mutual Life Insurance Company (MMLIC)	432,393,551	(1,043,240,811)	(504,546,455)						(1,115,393,715)	(45,461,043)
93432	06-1041383	C.M. Life Insurance Company	134,636	14,276,453	(37,192,545)						(22,781,455)	39,165,290
70416	43-0581430	MML Bay State Life Insurance Company										6,295,753
	26-0073611	MassMutual Asset Finance LLC			541,739,000						541,739,000	
	04-2854319	MassMutual Holding LLC	(429,741,302)	889,189,662							459,448,360	
	81-0890084	CREA Madison Member LLC		136,493,339							136,493,339	
	04-1590850	Barings Global Energy Infrastructure Fund I LP		101,000,000							101,000,000	
	04-1590850	Berkshire Way LLC		100,000,000							100,000,000	
		Remington L&W Holdings LLC		64,666,667							64,666,667	
	04-1590850	Budapester Strasse LLC		56,596,310							56,596,310	
	46-5001122	CREA 330 Third LLC		35,220,859							35,220,859	
	81-1552222	Willowood Lakeside Master LLC		28,183,405							28,183,405	
	98-1332447	Barings Real Estate European Value Add I SCSp		23,392,680							23,392,680	
	36-4823011	50 Liberty LLC		21,879,469							21,879,469	
	95-4207717	Cornerstone California Mortgage Fund I LLC		21,213,331							21,213,331	
		MML Special Situations Investor LLC		21,044,887							21,044,887	
	45-2632610	Cornerstone Permanent Mortgage Fund		20,218,081							20,218,081	
	46-5437441	Barings/LAZ Parking Fund LP		19,913,541							19,913,541	
	13-3175978	MSI Financial Services, Inc.		15,000,000							15,000,000	
	46-4367364	CREA FMF Nashville LLC		14,220,000							14,220,000	
		Babson CLO Investment Partners GP, LLC		14,039,855							14,039,855	
	46-5347643	MMI/Hines Harrison LLC		10,668,585							10,668,585	
	45-4606547	UK LIW Member LLC		10,399,197							10,399,197	
		CRA Aircraft Holdings LLC		9,600,000							9,600,000	
	04-1590850	MML Mezzanine Investor III, LLC		9,363,524							9,363,524	
	81-2871333	MM Chatham Office LLC		8,998,122							8,998,122	
	80-0948028	One Harbor Shore LLC		8,107,279							8,107,279	
	47-1993493	Waterloo London Holdings LLC		6,616,970							6,616,970	
		Babson Global Credit Fund (Lux) SCSp, SIACV-SIF		5,285,559							5,285,559	
	27-0105644	Jefferies Finance LLC		5,118,924							5,118,924	
		Barings European Core Property Fund SCSp		4,555,878							4,555,878	
	46-3123110	Sweet Tree Holdings 1, LLC		3,831,831							3,831,831	
	27-2977720	Sawgrass Village Shopping Center LLC		3,673,031							3,673,031	
	81-2244465	Chassis Acquisition Holding LLC		3,000,000							3,000,000	
	46-4077059	MM Woodfield Martingale LLC		2,426,785							2,426,785	
	45-5257904	21 West 86 LLC		2,250,000							2,250,000	
	46-5460309	Red Lake Ventures, LLC		1,889,394							1,889,394	
	20-2548283	12-18 West 55th Street Predevelopment, LLC		1,411,584							1,411,584	

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES**

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
		CML Special Situations Investor LLC		1,343,291							1,343,291	
	06-1041383	CML Mezzanine Investor III, LLC		1,040,624							1,040,624	
	46-5432619	Cornerstone Real Estate Fund X LP		939,485							939,485	
		Solar Acquisition Holding, LLC		800,416							800,416	
		Ten Fan Pier Boulevard LLC		714,139							714,139	
		Braemar Energy Ventures I, L.P.		525,298							525,298	
	46-3122029	WeHo Domain LLC		335,250							335,250	
	56-2630592	Cornerstone Fort Pierce Development LLC		241,898							241,898	
	47-2642354	Alchemy Copyrights, LLC		239,840							239,840	
	45-4606547	UK LIW Manager LLC		105,042							105,042	
	47-3055009	Milestone Acquisition Holding, LLC		32,075							32,075	
	95-4207717	Cornerstone California Mortgage Fund II LLC		19,038							19,038	
		Infinity SCD Ltd		14,836							14,836	
	98-0536233	Benton Street Partners I, L.P.		12,698							12,698	
	26-4441097	WP-SC, LLC		840							840	
	81-3000420	MM Debt Participations LLC		430							430	
	04-3584140	MassMutual Select Small Company Value Fund	(1,325)								(1,325)	
	45-1618222	MassMutual RetireSMART Growth Fund	(1,357)								(1,357)	
	26-3229251	MassMutual Premier Strategic Emerging Markets Fund	(1,520)								(1,520)	
	45-1618046	MassMutual RetireSMART Moderate Growth Fund	(1,758)								(1,758)	
	45-1618262	MassMutual RetireSMART Moderate Fund	(1,896)								(1,896)	
	46-4257056	MML Series International Equity Fund	(1,944)								(1,944)	
	45-1618155	MassMutual RetireSMART Conservative Fund	(2,095)								(2,095)	
	47-3529636	MML Series II Dynamic Bond Fund	(2,757)								(2,757)	
	42-1710935	MassMutual Select Mid-Cap Value Fund	(2,914)								(2,914)	
	51-0529328	MassMutual Premier Main Street Fund	(3,371)								(3,371)	
	04-3277550	MassMutual Premier Value Fund	(4,654)								(4,654)	
	14-1980900	MassMutual Select Diversified International Fund	(4,746)								(4,746)	
	47-3559064	MML Series II Special Situations Fund	(4,967)								(4,967)	
	02-0769954	MassMutual Select Small Capital Value Equity Fund	(5,944)								(5,944)	
	04-3513019	MassMutual Select Large Cap Value Fund	(6,816)								(6,816)	
	01-0821120	MassMutual Select Diversified Value Fund	(6,877)								(6,877)	
	04-3512593	MassMutual Select Fundamental Growth Fund	(14,535)								(14,535)	
	47-3517233	MML Series II Asset Momentum Fund	(15,765)								(15,765)	
		Babson Capital Emerging Markets Local Debt Fund	(21,472)								(21,472)	
	46-3289207	MassMutual RetireSMART 2055 Fund	(24,843)								(24,843)	

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE Y**

**PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES**

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
	30-0607379	Baring Global Dynamic Asset Allocation Fund		(32,479)							(32,479)	
		Babson Capital US High Yield Bond Fund	(49,196)								(49,196)	
	61-1750537	Cornerstone Permanent Mortgage Fund II		(60,750)							(60,750)	
	26-4142796	Baring International Small Cap Equity Fund		(65,788)							(65,788)	
	04-1590850	CHC/RFP VI Core LLC		(67,955)							(67,955)	
	47-3544629	MML Series II Equity Rotation Fund	(143,970)								(143,970)	
		Babson Capital Emerging Markets Corporate Bond Fund	(213,251)								(213,251)	
	11-3789446	Baring Focused EAFE Equity Fund		(226,213)							(226,213)	
	35-2531693	Cornerstone Permanent Mortgage Fund III		(295,600)							(295,600)	
	47-5326235	MassMutual RetireSMART 2060 Fund	(549,481)								(549,481)	
	04-3722906	Tower Square Capital Partners, L.P.		(617,700)							(617,700)	
	20-3347091	Fan Pier Development LLC		(727,788)							(727,788)	
	46-2344300	Intermodal Holdings II LLC		(819,000)							(819,000)	
	20-0348173	CREA/PPC Venture LLC		(996,300)							(996,300)	
	46-3378584	WC Aircraft Holdings US II, LLC		(1,010,220)							(1,010,220)	
	26-1828760	Cornerstone Hotel Income & Equity Fund II LP		(1,027,376)							(1,027,376)	
	06-1041383	CML Mezzanine Investor L, LLC		(1,157,713)							(1,157,713)	
	27-1435692	Country Club Office Plaza LLC		(1,303,140)							(1,303,140)	
	20-4819358	Johnston Groves LLC		(1,323,713)							(1,323,713)	
	56-2505390	Great Lakes LLC		(1,615,899)							(1,615,899)	
	20-2970495	US Pharmaceutical Holdings II, LLC		(1,652,826)							(1,652,826)	
	46-1604428	Oppenheimer Global Real Estate Fund	(1,699,431)								(1,699,431)	
	20-4570515	Babson Mezzanine Realty Investors I		(1,750,481)							(1,750,481)	
	04-1590850	Wood Creek Venture Fund LLC		(1,804,981)							(1,804,981)	
	26-2399532	CREA/LYON West Gateway, LLC		(1,950,218)							(1,950,218)	
	47-3971963	Babson Investment Grade CLO Debt Fund LP		(2,206,811)							(2,206,811)	
	47-5322979	Timberland Forest Holding LLC		(2,239,048)							(2,239,048)	
	90-0991195	Gateway Mezzanine Partners II LP		(2,252,358)							(2,252,358)	
	06-1041383	CML Mezzanine Investor, LLC		(2,346,570)							(2,346,570)	
	30-0336246	Tower Square Capital Partners II, L.P.		(2,915,365)							(2,915,365)	
	46-3880526	Farrington London Holdings LLC		(2,918,910)							(2,918,910)	
	55-0886109	Babson Capital High Yield LLC		(2,927,937)							(2,927,937)	
	71-1018134	Great Lakes II LLC		(3,253,174)							(3,253,174)	
	20-5481477	Ygnatio Valley Funding		(5,438,558)							(5,438,558)	
	45-5401109	Washington Gateway Apartments Venture LLC		(6,971,539)							(6,971,539)	
	45-3751572	Cornerstone Enhanced Mortgage Fund I LP		(9,994,930)							(9,994,930)	
	37-1708623	Great Lakes III, L.P.		(10,009,721)							(10,009,721)	
	04-1590850	MML Mezzanine Investor L, LLC		(10,419,414)							(10,419,414)	
	80-0691253	Gateway Mezzanine Partners I, L.P.		(10,663,727)							(10,663,727)	

**SCHEDULE Y**

**PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES**

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
	32-0160190	Tower Square Capital Partners II-A, L.P.		(11,247,512)							(11,247,512)	
	36-4770946	Cornerstone High Yield Venture LP		(12,260,185)							(12,260,185)	
	27-0547156	Cornerstone Real Estate Fund VIII LP		(17,754,736)							(17,754,736)	
	35-2484550	Twenty Two Liberty LLC		(20,800,000)							(20,800,000)	
	04-1590850	MML Mezzanine Investor, LLC		(21,119,127)							(21,119,127)	
	20-4981369	Wood Creek Multi Asset Fund, L.P.		(22,162,555)							(22,162,555)	
	04-1590850	MML Private Equity Fund Investor LLC		(33,346,699)							(33,346,699)	
	04-1590850	MML Mezzanine Investor II, LLC		(42,145,420)							(42,145,420)	
		MML Investment Advisers, LLC		(55,525,578)							(55,525,578)	
	41-2280129	Tower Square Capital Partners IIIA, L.P.		(59,156,155)							(59,156,155)	
	26-1611591	Fallon Cornerstone One MPD LLC		(59,200,831)							(59,200,831)	
	37-1732913	Fern Street LLC		(64,256,845)							(64,256,845)	
	20-8856877	Somerset Special Opportunities Fund L.P.		(64,716,944)							(64,716,944)	
	45-2779931	AT Mid-Atlantic Office Portfolio LLC		(80,112,802)							(80,112,802)	
	9999999	Control Totals							XXX			

**SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES**

The following supplemental reports are required to be filed as part of your statement filing unless specifically waived by the domiciliary state. However, in the event that your domiciliary state waives the filing requirement, your response of WAIVED to the specific interrogatory will be accepted in lieu of filing a "NONE" report and a bar code will be printed below. If the supplement is required of your company but is not being filed for whatever reason enter SEE EXPLANATION and provide an explanation following the interrogatory questions.

	<u>Responses</u>
<b>MARCH FILING</b>	
1. Will the Supplemental Compensation Exhibit be filed with the state of domicile by March 1? .....	YES
2. Will the confidential Risk-based Capital Report be filed with the NAIC by March 1? .....	YES
3. Will the confidential Risk-based Capital Report be filed with the state of domicile, if required, by March 1? .....	YES
4. Will an actuarial opinion be filed by March 1? .....	YES
<b>APRIL FILING</b>	
5. Will Management's Discussion and Analysis be filed by April 1? .....	YES
6. Will the Life, Health & Annuity Guaranty Association Model Act Assessment Base Reconciliation Exhibit be filed with the state of domicile and the NAIC by April 1? .....	YES
7. Will the Adjustment Form (if required) be filed with the state of domicile and the NAIC by April 1? .....	YES
8. Will the Supplemental Investment Risks Interrogatories be filed by April 1? .....	YES
<b>JUNE FILING</b>	
9. Will an audited financial report be filed by June 1? .....	YES
10. Will Accountant's Letter of Qualifications be filed with the state of domicile and electronically with the NAIC by June 1? .....	YES
<b>AUGUST FILING</b>	
11. Will the regulator-only (non-public) Communication of Internal Control Related Matters Noted in Audit be filed with the state of domicile and electronically with the NAIC (as a regulator-only non-public document) by August 1? .....	YES

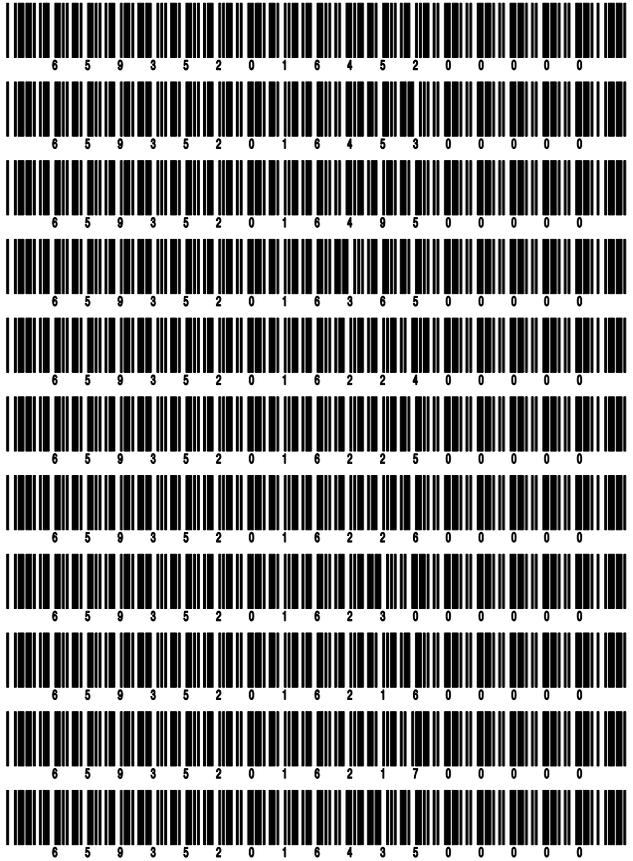
The following supplemental reports are required to be filed as part of your annual statement filing. However, in the event that your company does not transact the type of business for which the special report must be filed, your response of NO to the specific interrogatory will be accepted in lieu of filing a "NONE" report and a bar code will be printed below. If the supplement is required of your company but is not being filed for whatever reason enter SEE EXPLANATION and provide an explanation following the interrogatory questions.

<b>MARCH FILING</b>	
12. Will Schedule SIS (Stockholder Information Supplement) be filed with the state of domicile by March 1? .....	NO
13. Will the Medicare Supplement Insurance Experience Exhibit be filed with the state of domicile and the NAIC by March 1? .....	NO
14. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC by March 1? .....	NO
15. Will the actuarial opinion on participating and non-participating policies as required in Interrogatories 1 and 2 to Exhibit 5 be filed with the state of domicile and electronically with the NAIC by March 1? .....	YES
16. Will the actuarial opinion on non-guaranteed elements as required in interrogatory #3 to Exhibit 5 be filed with the state of domicile and electronically with the NAIC by March 1? .....	YES
17. Will the actuarial opinion on X-Factors be filed with the state of domicile and electronically with the NAIC by March 1? .....	YES
18. Will the actuarial opinion on Separate Accounts Funding Guaranteed Minimum Benefit be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
19. Will the actuarial opinion on Synthetic Guaranteed Investment Contracts be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
20. Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
21. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
22. Will the Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
23. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Average Market Value) be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
24. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) be filed with the state of domicile and electronically with the NAIC by March 1? .....	NO
25. Will the C-3 RBC Certifications required under C-3 Phase I be filed with the state of domicile and electronically with the NAIC by March 1? .....	YES
26. Will the C-3 RBC Certifications required under C-3 Phase II be filed with the state of domicile and electronically with the NAIC by March 1? .....	YES



# SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

- 27. Actuarial Certifications Related to Annuity Nonforfeiture Ongoing Compliance for Equity Indexed Annuities [Document Identifier 452]
- 28. Modified Guaranteed Annuity Model Regulation [Document Identifier 453]
- 34. Workers' Compensation Carve-Out Supplement [Document Identifier 495]
- 36. Medicare Part D Coverage Supplement [Document Identifier 365]
- 37. Relief from the five-year rotation requirement for lead audit partner [Document Identifier 224]
- 38. Relief from the one-year cooling off period for independent CPA [Document Identifier 225]
- 39. Relief from the Requirements for Audit Committees [Document Identifier 226]
- 43. Credit Insurance Experience Exhibit [Document Identifier 230]
- 47. Supplemental Health Care Exhibit (Parts 1, 2 and 3) [Document Identifier 216]
- 48. Supplemental Health Care Exhibit's Expense Allocation Report [Document Identifier 217]
- 49. Actuarial Memorandum Required by Actuarial Guideline XXXVIII 8D [Document Identifier 435]



ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**OVERFLOW PAGE FOR WRITE-INS**

Additional Write-ins for Assets Line 25

	Current Year			Prior Year
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	4 Net Admitted Assets
2504. Investment in trust .....	31,420,102		31,420,102	32,401,020
2505. Pension plan asset .....	624,498,480	624,498,480		
2506. Cash advances to agents .....	243,580,128	243,580,128		454,517
2507. Intangible assets .....	130,849,403	130,849,403		
2508. Commissions and expenses on long-term lease .....	39,013,199	39,013,199		
2509. Bills receivable .....	337,617	337,617		
2597. Summary of remaining write-ins for Line 25 from overflow page	1,069,698,929	1,038,278,827	31,420,102	32,855,537

Additional Write-ins for Liabilities Line 25

	1 Current Year	2 Prior Year
2504. Funds awaiting escheat and other miscellaneous .....	60,133,964	59,442,056
2505. Deferred liability .....	19,920,155	22,951,063
2597. Summary of remaining write-ins for Line 25 from overflow page	80,054,119	82,393,119

Additional Write-ins for Summary of Operations Line 27

	1 Current Year	2 Prior Year
2704. Change in liability for employee/agent benefit plans .....	18,694,135	9,259,306
2705. Miscellaneous charges to operations .....	10,529,507	28,650,573
2797. Summary of remaining write-ins for Line 27 from overflow page	29,223,642	37,909,879

Additional Write-ins for Exhibit of Nonadmitted Assets Line 25

	1 Current Year Total Nonadmitted Assets	2 Prior Year Total Nonadmitted Assets	3 Change in Total Nonadmitted Assets (Col. 2 - Col. 1)
2504. Fully refundable deposits, prepayments and other miscellaneous .....	87,932,203	49,589,596	(38,342,607)
2505. Commissions and expenses on long-term lease .....	39,013,199	46,216,521	7,203,322
2506. Bills receivable .....	337,617	171,861	(165,756)
2507. Employee insurance plan advances .....		41,381	41,381
2597. Summary of remaining write-ins for Line 25 from overflow page	127,283,019	96,019,359	(31,263,660)

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company  
**OVERFLOW PAGE FOR WRITE-INS**

Additional Write-ins for Analysis of Operations Line 27

	1 Total	2 Industrial Life	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health			12 Aggregate of All Other Lines of Business
			3 Life Insurance	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance (a)	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other	
2704. Change in liability for employee/agent benefit plans .....	18,694,135		18,694,135									
2705. Miscellaneous charges to operations .....	10,529,507		4,764,420	351,585	421,244		505,544	3,399,604	9,924		1,077,186	
2797. Summary of remaining write-ins for Line 27 from overflow page	29,223,642		23,458,555	351,585	421,244		505,544	3,399,604	9,924		1,077,186	

**SUMMARY INVESTMENT SCHEDULE**

Investment Categories	Gross Investment Holdings		Admitted Assets as Reported in the Annual Statement			
	1 Amount	2 Percentage	3 Amount	4 Securities Lending Reinvested Collateral Amount	5 Total (Col. 3 + 4) Amount	6 Percentage
1. Bonds:						
1.1 U.S. treasury securities .....	6,598,201,198	4.260	6,598,201,198		6,598,201,198	4.260
1.2 U.S. government agency obligations (excluding mortgage-backed securities):						
1.21 Issued by U.S. government agencies .....	1,657,903,784	1.070	1,657,903,784		1,657,903,784	1.070
1.22 Issued by U.S. government sponsored agencies .....	1,760,617	0.001	1,760,617		1,760,617	0.001
1.3 Non-U.S. government (including Canada, excluding mortgaged-backed securities) .....	1,025,943,803	0.662	1,025,943,803		1,025,943,803	0.662
1.4 Securities issued by states, territories, and possessions and political subdivisions in the U.S. :						
1.41 States, territories and possessions general obligations .....	687,223,559	0.444	687,223,559		687,223,559	0.444
1.42 Political subdivisions of states, territories and possessions and political subdivisions general obligations .....	482,667,254	0.312	482,667,254		482,667,254	0.312
1.43 Revenue and assessment obligations .....	3,359,064,508	2.169	3,359,064,508		3,359,064,508	2.169
1.44 Industrial development and similar obligations .....		0.000				0.000
1.5 Mortgage-backed securities (includes residential and commercial MBS):						
1.51 Pass-through securities:						
1.511 Issued or guaranteed by GNMA .....	111,732,548	0.072	111,732,548		111,732,548	0.072
1.512 Issued or guaranteed by FNMA and FHLMC .....	113,296,906	0.073	113,296,906		113,296,906	0.073
1.513 All other .....	4,834,068,973	3.121	4,834,068,973		4,834,068,973	3.121
1.52 CMOs and REMICs:						
1.521 Issued or guaranteed by GNMA, FNMA, FHLMC or VA .....	491,790,363	0.318	491,790,363		491,790,363	0.318
1.522 Issued by non-U.S. Government issuers and collateralized by mortgage-backed securities issued or guaranteed by agencies shown in Line 1.521 .....		0.000				0.000
1.523 All other .....	472,301,931	0.305	472,301,931		472,301,931	0.305
2. Other debt and other fixed income securities (excluding short-term):						
2.1 Unaffiliated domestic securities (includes credit tenant loans and hybrid securities) .....	31,761,103,695	20.506	31,761,103,695		31,761,103,695	20.506
2.2 Unaffiliated non-U.S. securities (including Canada) .....	25,715,502,958	16.603	25,715,502,958		25,715,502,958	16.603
2.3 Affiliated securities .....	6,508,255,599	4.202	6,508,255,599		6,508,255,599	4.202
3. Equity interests:						
3.1 Investments in mutual funds .....	650,096,900	0.420	650,096,900		650,096,900	0.420
3.2 Preferred stocks:						
3.21 Affiliated .....		0.000				0.000
3.22 Unaffiliated .....	464,925,273	0.300	464,925,273		464,925,273	0.300
3.3 Publicly traded equity securities (excluding preferred stocks):						
3.31 Affiliated .....	13,520,070,079	8.729	13,520,070,079		13,520,070,079	8.729
3.32 Unaffiliated .....	781,512,133	0.505	781,512,133		781,512,133	0.505
3.4 Other equity securities:						
3.41 Affiliated .....	150,424,434	0.097	150,424,434		150,424,434	0.097
3.42 Unaffiliated .....	261,281,262	0.169	261,281,262		261,281,262	0.169
3.5 Other equity interests including tangible personal property under lease:						
3.51 Affiliated .....		0.000				0.000
3.52 Unaffiliated .....		0.000				0.000
4. Mortgage loans:						
4.1 Construction and land development .....	557,000,496	0.360	557,000,496		557,000,496	0.360
4.2 Agricultural .....	1,727,027	0.001	1,727,027		1,727,027	0.001
4.3 Single family residential properties .....	1,767,903,811	1.141	1,767,903,811		1,767,903,811	1.141
4.4 Multifamily residential properties .....		0.000				0.000
4.5 Commercial loans .....	18,563,571,288	11.985	18,563,571,288		18,563,571,288	11.985
4.6 Mezzanine real estate loans .....	70,888,944	0.046	70,888,944		70,888,944	0.046
5. Real estate investments:						
5.1 Property occupied by company .....	158,135,975	0.102	158,135,975		158,135,975	0.102
5.2 Property held for production of income (including \$ ..... of property acquired in satisfaction of debt) .....	737,451,103	0.476	737,451,103		737,451,103	0.476
5.3 Property held for sale (including \$ ..... property acquired in satisfaction of debt) .....	81,092,879	0.052	81,092,879		81,092,879	0.052
6. Contract loans .....	12,461,811,467	8.046	12,461,290,555		12,461,290,555	8.045
7. Derivatives .....	9,763,460,825	6.304	9,763,460,825		9,763,460,825	6.304
8. Receivables for securities .....	161,585,825	0.104	161,585,825		161,585,825	0.104
9. Securities Lending (Line 10, Asset Page reinvested collateral) .....		0.000		XXX	XXX	XXX
10. Cash, cash equivalents and short-term investments .....	3,725,936,280	2.406	3,725,936,280		3,725,936,280	2.406
11. Other invested assets .....	7,186,889,062	4.640	7,186,889,062		7,186,889,062	4.640
12. Total invested assets	154,886,582,758	100.000	154,886,061,846		154,886,061,846	100.000

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE A - VERIFICATION BETWEEN YEARS**

Real Estate

1.	Book/adjusted carrying value, December 31 of prior year .....	928,176,765
2.	Cost of acquired:	
2.1	Actual cost at time of acquisition (Part 2, Column 6) .....	5,118,335
2.2	Additional investment made after acquisition (Part 2, Column 9) .....	293,276,410
		298,394,745
3.	Current year change in encumbrances:	
3.1	Totals, Part 1, Column 13 .....	(97,486,309)
3.2	Totals, Part 3, Column 11 .....	(97,486,309)
4.	Total gain (loss) on disposals, Part 3, Column 18 .....	14,852,798
5.	Deduct amounts received on disposals, Part 3, Column 15 .....	59,477,126
6.	Total foreign exchange change in book/adjusted carrying value:	
6.1	Totals, Part 1, Column 15 .....	
6.2	Totals, Part 3, Column 13 .....	
7.	Deduct current year's other than temporary impairment recognized:	
7.1	Totals, Part 1, Column 12 .....	1,118,221
7.2	Totals, Part 3, Column 10 .....	1,118,221
8.	Deduct current year's depreciation:	
8.1	Totals, Part 1, Column 11 .....	105,101,148
8.2	Totals, Part 3, Column 9 .....	1,561,547
		106,662,695
9.	Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8) .....	976,679,957
10.	Deduct total nonadmitted amounts .....	
11.	Statement value at end of current period (Line 9 minus Line 10) .....	976,679,957

**SCHEDULE B - VERIFICATION BETWEEN YEARS**

Mortgage Loans

1.	Book value/recorded investment excluding accrued interest, December 31 of prior year .....	22,007,729,394
2.	Cost of acquired:	
2.1	Actual cost at time of acquisition (Part 2, Column 7) .....	3,204,413,320
2.2	Additional investment made after acquisition (Part 2, Column 8) .....	300,154,202
		3,504,567,522
3.	Capitalized deferred interest and other:	
3.1	Totals, Part 1, Column 12 .....	21,232,144
3.2	Totals, Part 3, Column 11 .....	21,621,146
		42,853,290
4.	Accrual of discount .....	2,678,459
5.	Unrealized valuation increase (decrease):	
5.1	Totals, Part 1, Column 9 .....	
5.2	Totals, Part 3, Column 8 .....	
6.	Total gain (loss) on disposals, Part 3, Column 18 .....	(7,048,196)
7.	Deduct amounts received on disposals, Part 3, Column 15 .....	4,422,106,220
8.	Deduct amortization of premium and mortgage interest points and commitment fees .....	(652,780)
9.	Total foreign exchange change in book value/recorded investment excluding accrued interest:	
9.1	Totals, Part 1, Column 13 .....	(173,378,846)
9.2	Totals, Part 3, Column 13 .....	14,081,395
		(159,297,451)
10.	Deduct current year's other than temporary impairment recognized:	
10.1	Totals, Part 1, Column 11 .....	
10.2	Totals, Part 3, Column 10 .....	6,688,012
		6,688,012
11.	Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10) .....	20,963,341,565
12.	Total valuation allowance .....	(2,250,000)
13.	Subtotal (Line 11 plus 12) .....	20,961,091,565
14.	Deduct total nonadmitted amounts .....	
15.	Statement value of mortgages owned at end of current period (Line 13 minus Line 14) .....	20,961,091,565

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE BA - VERIFICATION BETWEEN YEARS**

Other Long-Term Invested Assets

1.	Book/adjusted carrying value, December 31 of prior year .....	7,535,417,690
2.	Cost of acquired:	
2.1	Actual cost at time of acquisition (Part 2, Column 8) .....	551,830,195
2.2	Additional investment made after acquisition (Part 2, Column 9) .....	1,114,188,548
		1,666,018,743
3.	Capitalized deferred interest and other:	
3.1	Totals, Part 1, Column 16 .....	
3.2	Totals, Part 3, Column 12 .....	
4.	Accrual of discount .....	
5.	Unrealized valuation increase (decrease):	
5.1	Totals, Part 1, Column 13 .....	425,548,362
5.2	Totals, Part 3, Column 9 .....	23,467,128
		449,015,490
6.	Total gain (loss) on disposals, Part 3, Column 19 .....	2,647,530
7.	Deduct amounts received on disposals, Part 3, Column 16 .....	2,366,873,704
8.	Deduct amortization of premium and depreciation .....	1,542,812
9.	Total foreign exchange change in book/adjusted carrying value:	
9.1	Totals, Part 1, Column 17 .....	(47,970,647)
9.2	Totals, Part 3, Column 14 .....	3,722,701
		(44,247,946)
10.	Deduct current year's other than temporary impairment recognized:	
10.1	Totals, Part 1, Column 15 .....	7,321,949
10.2	Totals, Part 3, Column 11 .....	
		7,321,949
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10) .....	7,233,113,042
12.	Deduct total nonadmitted amounts .....	46,223,980
13.	Statement value at end of current period (Line 11 minus Line 12) .....	7,186,889,062

**SCHEDULE D - VERIFICATION BETWEEN YEARS**

Bonds and Stocks

1.	Book/adjusted carrying value, December 31 of prior year .....	89,179,507,736
2.	Cost of bonds and stocks acquired, Part 3, Column 7 .....	28,841,807,585
3.	Accrual of discount .....	333,689,372
4.	Unrealized valuation increase (decrease):	
4.1	Part 1, Column 12 .....	4,130,938
4.2	Part 2, Section 1, Column 15 .....	(64,240)
4.3	Part 2, Section 2, Column 13 .....	1,025,249,172
4.4	Part 4, Column 11 .....	27,092,363
		1,056,408,233
5.	Total gain (loss) on disposals, Part 4, Column 19 .....	(196,627,884)
6.	Deduction consideration for bonds and stocks disposed of, Part 4, Column 7 .....	18,821,905,883
7.	Deduct amortization of premium .....	170,788,494
8.	Total foreign exchange change in book/adjusted carrying value:	
8.1	Part 1, Column 15 .....	(528,809,712)
8.2	Part 2, Section 1, Column 19 .....	(21,023,200)
8.3	Part 2, Section 2, Column 16 .....	(8,408,918)
8.4	Part 4, Column 15 .....	76,482,680
		(481,759,150)
9.	Deduct current year's other than temporary impairment recognized:	
9.1	Part 1, Column 14 .....	62,428,332
9.2	Part 2, Section 1, Column 17 .....	673,200
9.3	Part 2, Section 2, Column 14 .....	10,162,125
9.4	Part 4, Column 13 .....	17,940,082
		91,203,739
10.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) .....	99,649,127,776
11.	Deduct total nonadmitted amounts .....	
12.	Statement value at end of current period (Line 10 minus Line 11) .....	99,649,127,776

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - SUMMARY BY COUNTRY**

Long-Term Bonds and Stocks OWNED December 31 of Current Year

Description		1 Book/Adjusted Carrying Value	2 Fair Value	3 Actual Cost	4 Par Value of Bonds
<b>BONDS</b>					
Governments (Including all obligations guaranteed by governments)	1. United States .....	6,819,851,139	7,327,742,822	6,373,407,490	7,462,757,869
	2. Canada .....	85,492,461	103,604,388	87,048,873	78,374,000
	3. Other Countries	838,206,886	830,699,285	848,233,942	824,935,510
	4. Totals	7,743,550,486	8,262,046,495	7,308,690,305	8,366,067,379
U.S. States, Territories and Possessions (Direct and guaranteed)	5. Totals	676,412,177	723,249,482	688,995,204	654,410,000
U.S. Political Subdivisions of States, Territories and Possessions (Direct and guaranteed)	6. Totals	482,667,257	514,142,379	483,980,045	495,945,000
U.S. Special Revenue and Special Assessment Obligations and all Non- Guaranteed Obligations of Agencies and Authorities of Governments and their Political Subdivisions	7. Totals	5,604,643,085	6,166,004,858	5,066,410,707	6,647,039,743
Industrial and Miscellaneous, SVO Identified Funds and Hybrid Securities (unaffiliated)	8. United States .....	36,484,261,685	37,474,914,533	36,567,510,817	36,093,533,464
	9. Canada .....	1,400,218,859	1,421,129,328	1,413,081,393	1,353,691,288
	10. Other Countries	24,920,808,550	25,565,885,091	25,667,811,263	25,117,577,106
	11. Totals	62,805,289,094	64,461,928,952	63,648,403,473	62,564,801,858
Parent, Subsidiaries and Affiliates	12. Totals	6,508,255,596	6,604,435,858	6,573,737,861	6,689,135,711
	13. Total Bonds	83,820,817,695	86,731,808,024	83,770,217,595	85,417,399,691
<b>PREFERRED STOCKS</b>					
Industrial and Miscellaneous (unaffiliated)	14. United States .....	328,258,496	332,508,507	328,350,869	
	15. Canada .....				
	16. Other Countries	136,666,777	149,395,244	170,291,577	
	17. Totals	464,925,273	481,903,751	498,642,446	
Parent, Subsidiaries and Affiliates	18. Totals				
	19. Total Preferred Stocks	464,925,273	481,903,751	498,642,446	
<b>COMMON STOCKS</b>					
Industrial and Miscellaneous (unaffiliated)	20. United States .....	1,095,630,514	1,095,630,514	968,437,109	
	21. Canada .....	5,353,717	5,353,717	4,235,942	
	22. Other Countries	591,906,064	591,906,064	625,167,402	
	23. Totals	1,692,890,295	1,692,890,295	1,597,840,453	
Parent, Subsidiaries and Affiliates	24. Totals	13,670,494,513	13,670,494,513	7,631,553,871	
	25. Total Common Stocks	15,363,384,808	15,363,384,808	9,229,394,324	
	26. Total Stocks	15,828,310,081	15,845,288,559	9,728,036,770	
	27. Total Bonds and Stocks	99,649,127,776	102,577,096,583	93,498,254,365	

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - PART 1A - SECTION 1**

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 10.7	9 Total from Col. 6 Prior Year	10 % From Col. 7 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
<b>1. U.S. Governments</b>												
1.1 NAIC 1	499,163,406	2,948,780,154	1,504,875,931	310,805,495	1,794,281,938	XXX	7,057,906,924	8.1	8,015,147,927	9.7	7,057,906,924	
1.2 NAIC 2						XXX						
1.3 NAIC 3						XXX						
1.4 NAIC 4						XXX						
1.5 NAIC 5						XXX						
1.6 NAIC 6						XXX						
1.7 Totals	499,163,406	2,948,780,154	1,504,875,931	310,805,495	1,794,281,938	XXX	7,057,906,924	8.1	8,015,147,927	9.7	7,057,906,924	
<b>2. All Other Governments</b>												
2.1 NAIC 1	1,349,844	13,003,947	119,629,289	30,683,177	13,596,588	XXX	178,262,844	0.2	179,213,702	0.2	127,126,327	51,136,516
2.2 NAIC 2		9,337,555	145,200,811	49,608,496	183,925,336	XXX	388,072,197	0.4	305,986,790	0.4	261,015,489	127,056,708
2.3 NAIC 3	6,524,604	59,821,609	88,563,999	9,032,151	47,617,862	XXX	211,560,225	0.2	149,434,655	0.2	51,046,653	160,513,572
2.4 NAIC 4		20,988,625	43,602,572	58,859,080	4,768,259	XXX	128,218,537	0.1	109,094,038	0.1		128,218,537
2.5 NAIC 5			14,905,545	2,680,000		XXX	17,585,545	0.0	13,423,893	0.0		17,585,545
2.6 NAIC 6						XXX			15,605,562	0.0		
2.7 Totals	7,874,449	103,151,736	411,902,215	150,862,903	249,908,045	XXX	923,699,348	1.1	772,758,640	0.9	439,188,470	484,510,878
<b>3. U.S. States, Territories and Possessions etc., Guaranteed</b>												
3.1 NAIC 1	13,558,488	134,412,634	157,878,989	147,116,891	155,377,597	XXX	608,344,599	0.7	643,062,382	0.8	608,344,599	
3.2 NAIC 2	1,805,675		15,235,909	42,271,211		XXX	59,312,795	0.1	74,531,085	0.1	59,312,795	
3.3 NAIC 3						XXX						
3.4 NAIC 4						XXX						
3.5 NAIC 5						XXX						
3.6 NAIC 6	620,070		1,066,270	3,118,771	3,949,670	XXX	8,754,781	0.0	9,080,985	0.0	8,754,781	
3.7 Totals	15,984,233	134,412,634	174,181,168	192,506,873	159,327,268	XXX	676,412,175	0.8	726,674,452	0.9	676,412,175	
<b>4. U.S. Political Subdivisions of States, Territories and Possessions, Guaranteed</b>												
4.1 NAIC 1	246,470	22,068,117	53,840,062	322,460,651	82,276,955	XXX	480,892,254	0.5	443,033,632	0.5	480,892,254	
4.2 NAIC 2						XXX			18,323,864	0.0		
4.3 NAIC 3	120,000	555,000	890,000	210,000		XXX	1,775,000	0.0	1,890,000	0.0	1,775,000	
4.4 NAIC 4						XXX						
4.5 NAIC 5						XXX			5,000,000	0.0		
4.6 NAIC 6						XXX						
4.7 Totals	366,470	22,623,117	54,730,062	322,670,651	82,276,955	XXX	482,667,254	0.6	468,247,496	0.6	482,667,254	
<b>5. U.S. Special Revenue &amp; Special Assessment Obligations, etc., Non-Guaranteed</b>												
5.1 NAIC 1	161,893,546	994,189,513	634,015,250	1,992,633,831	1,538,495,062	XXX	5,321,227,202	6.1	5,173,282,428	6.3	5,315,759,802	5,467,400
5.2 NAIC 2	7,085,724	9,266,621	37,530,433	71,814,345	77,680,855	XXX	203,377,977	0.2	190,189,889	0.2	165,227,504	38,150,473
5.3 NAIC 3	353,564	6,301,252	3,326,001	16,525,414	23,962,789	XXX	50,469,019	0.1	37,869,844	0.0	44,569,019	5,900,000
5.4 NAIC 4	8,678,952	3,813,297	2,619,147	325,243		XXX	15,436,638	0.0	480,000	0.0	15,436,638	
5.5 NAIC 5	933,723	4,512,003	1,861,250			XXX	7,306,976	0.0	2,925,000	0.0	2,696,976	4,610,000
5.6 NAIC 6	184,922	2,334,561	105,570	975,855	3,224,345	XXX	6,825,253	0.0	9,396,239	0.0	6,825,253	
5.7 Totals	179,130,431	1,020,417,247	679,457,650	2,082,274,687	1,643,363,051	XXX	5,604,643,066	6.4	5,414,143,401	6.6	5,550,515,193	54,127,873

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - PART 1A - SECTION 1 (Continued)**

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 10.7	9 Total from Col. 6 Prior Year	10 % From Col. 7 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
<b>6. Industrial &amp; Miscellaneous (Unaffiliated)</b>												
6.1 NAIC 1	2,692,619,615	9,676,549,675	7,564,719,518	4,162,068,025	6,054,491,962	XXX	30,150,448,795	34.4	27,519,845,777	33.4	11,324,238,303	18,826,210,492
6.2 NAIC 2	3,694,252,653	6,204,106,573	10,153,541,572	3,972,986,833	5,127,275,648	XXX	29,152,163,278	33.3	26,980,195,718	32.7	10,172,752,674	18,979,410,603
6.3 NAIC 3	603,941,660	1,251,393,195	1,232,804,407	185,058,616	46,383,209	XXX	3,319,581,088	3.8	3,162,921,885	3.8	517,428,012	2,802,153,076
6.4 NAIC 4	56,801,873	1,172,114,987	842,842,641	53,944,900	91,227,940	XXX	2,216,932,341	2.5	2,019,449,183	2.5	538,535,768	1,678,396,573
6.5 NAIC 5	49,484,198	596,794,727	214,996,802	72,048,190	52,545,873	XXX	985,869,791	1.1	647,067,989	0.8	193,831,644	792,038,147
6.6 NAIC 6	2,635,275	37,694,063	43,473,621	384,081	64,678,834	XXX	148,865,875	0.2	154,724,746	0.2	3,372,973	145,492,902
6.7 Totals	7,099,735,274	18,938,653,220	20,052,378,562	8,446,490,644	11,436,603,467	XXX	65,973,861,167	75.3	60,484,205,298	73.4	22,750,159,374	43,223,701,793
<b>7. Hybrid Securities</b>												
7.1 NAIC 1		269,717	1,816,171	222,234	9,987,904	XXX	12,296,026	0.0	32,706,610	0.0	7,965,950	4,330,076
7.2 NAIC 2	621,182	24,733,155	6,305,596	65,827,840	97,865,793	XXX	195,353,566	0.2	185,832,131	0.2	88,925,298	106,428,269
7.3 NAIC 3	30,185,902		20,775,032	5,485,326	22,403,289	XXX	78,849,548	0.1	112,097,723	0.1	20,903,289	57,946,260
7.4 NAIC 4				395,438	29,166,375	XXX	29,561,813	0.0	14,479,223	0.0	19,645,438	9,916,375
7.5 NAIC 5					4,000,000	XXX	4,000,000	0.0	18,339,155	0.0		4,000,000
7.6 NAIC 6						XXX						
7.7 Totals	30,807,083	25,002,872	28,896,799	71,930,838	163,423,361	XXX	320,060,954	0.4	363,454,841	0.4	137,439,974	182,620,979
<b>8. Parent, Subsidiaries and Affiliates</b>												
8.1 NAIC 1	80,450,986	4,084,344,991	283,670,093	470,339	977,299	XXX	4,449,913,706	5.1	3,769,302,302	4.6	4,169,378	4,445,744,328
8.2 NAIC 2	23,310,000	1,527,207,515	261,353,961			XXX	1,811,871,476	2.1	2,133,228,162	2.6		1,811,871,476
8.3 NAIC 3		16,525,000				XXX	16,525,000	0.0	16,525,000	0.0		16,525,000
8.4 NAIC 4						XXX			4,355,658	0.0		
8.5 NAIC 5		34,167,470				XXX	34,167,470	0.0	80,191,080	0.1		34,167,470
8.6 NAIC 6	34,896,553	41,150,127	74,803,429	18,826,178	26,101,660	XXX	195,777,947	0.2	172,909,952	0.2		195,777,947
8.7 Totals	138,657,538	5,703,395,103	619,827,483	19,296,516	27,078,959	XXX	6,508,255,599	7.4	6,176,512,155	7.5	4,169,378	6,504,086,221
<b>9. SVO Identified Funds</b>												
9.1 NAIC 1	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	
9.2 NAIC 2	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.3 NAIC 3	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.4 NAIC 4	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.5 NAIC 5	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.6 NAIC 6	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.7 Totals	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - PART 1A - SECTION 1 (Continued)**

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 10.7	9 Total from Col. 6 Prior Year	10 % From Col. 7 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
<b>10. Total Bonds Current Year</b>												
10.1 NAIC 1	(d) 3,449,282,355	17,873,618,747	10,320,445,301	6,966,460,642	9,649,485,304	94,489,049	48,353,781,399	55.2	XXX	XXX	25,020,892,587	23,332,888,811
10.2 NAIC 2	(d) 3,727,075,233	7,774,651,418	10,619,168,282	4,202,508,724	5,486,747,632		31,810,151,289	36.3	XXX	XXX	10,747,233,759	21,062,917,530
10.3 NAIC 3	(d) 641,125,730	1,334,596,056	1,346,359,438	216,311,507	140,367,150		3,678,759,881	4.2	XXX	XXX	635,721,973	3,043,037,908
10.4 NAIC 4	(d) 65,480,825	1,196,916,909	889,064,360	113,524,660	125,162,574		2,390,149,329	2.7	XXX	XXX	573,617,844	1,816,531,485
10.5 NAIC 5	(d) 50,417,921	635,474,200	231,763,598	74,728,190	56,545,873		(c) 1,048,929,782	1.2	XXX	XXX	196,528,620	852,401,162
10.6 NAIC 6	(d) 38,336,821	81,178,751	119,448,890	23,304,884	97,954,510		(c) 360,223,856	0.4	XXX	XXX	18,953,007	341,270,849
10.7 Totals	7,971,718,884	28,896,436,082	23,526,249,869	11,596,838,607	15,556,263,043	94,489,049	(b) 87,641,995,535	100.0	XXX	XXX	37,192,947,791	50,449,047,744
10.8 Line 10.7 as a % of Col. 7	9.1	33.0	26.8	13.2	17.7	0.1	100.0	XXX	XXX	XXX	42.4	57.6
<b>11. Total Bonds Prior Year</b>												
11.1 NAIC 1	2,285,929,758	15,257,078,889	11,883,493,731	6,863,418,899	9,485,673,484	XXX	XXX	XXX	45,775,594,761	55.5	24,950,242,188	20,825,352,573
11.2 NAIC 2	3,574,194,023	7,455,825,756	11,732,134,604	3,151,124,084	3,975,009,172	XXX	XXX	XXX	29,888,287,639	36.3	9,998,401,449	19,889,886,190
11.3 NAIC 3	650,348,073	1,209,865,132	1,207,013,247	138,062,157	275,450,497	XXX	XXX	XXX	3,480,739,106	4.2	788,131,434	2,692,607,672
11.4 NAIC 4	120,622,778	1,033,103,086	857,012,899	114,634,504	22,484,835	XXX	XXX	XXX	2,147,858,102	2.6	321,423,820	1,826,434,282
11.5 NAIC 5	26,840,440	546,229,637	127,487,949	41,153,073	25,236,018	XXX	XXX	XXX	(c) 766,947,118	0.9	47,571,999	719,375,119
11.6 NAIC 6	39,746,376	152,338,568	50,732,589	68,856,135	50,043,816	XXX	XXX	XXX	(c) 361,717,484	0.4	98,375,421	263,342,064
11.7 Totals	6,697,681,447	25,654,441,068	25,857,875,019	10,377,248,853	13,833,897,823	XXX	XXX	XXX	(b) 82,421,144,210	100.0	36,204,146,312	46,216,997,898
11.8 Line 11.7 as a % of Col. 9	8.1	31.1	31.4	12.6	16.8	XXX	XXX	XXX	100.0	XXX	43.9	56.1
<b>12. Total Publicly Traded Bonds</b>												
12.1 NAIC 1	1,995,426,253	6,044,128,643	4,520,838,385	4,291,197,755	8,074,812,503	94,489,049	25,020,892,587	28.5	24,950,242,188	30.3	25,020,892,587	XXX
12.2 NAIC 2	233,833,970	2,274,887,749	2,794,743,952	1,111,224,755	4,332,543,333		10,747,233,759	12.3	9,998,401,449	12.1	10,747,233,759	XXX
12.3 NAIC 3	21,605,057	217,306,792	223,700,446	86,333,335	86,776,343		635,721,973	0.7	788,131,434	1.0	635,721,973	XXX
12.4 NAIC 4	26,612,002	259,737,672	156,040,751	30,283,256	100,944,162		573,617,844	0.7	321,423,820	0.4	573,617,844	XXX
12.5 NAIC 5	14,179,531	89,674,716	35,832,477	4,296,024	52,545,873		196,528,620	0.2	47,571,999	0.1	196,528,620	XXX
12.6 NAIC 6	871,841	2,472,010	2,878,409	4,100,826	8,629,920		18,953,007	0.0	98,375,421	0.1	18,953,007	XXX
12.7 Totals	2,292,528,655	8,888,207,582	7,734,034,420	5,527,435,951	12,656,252,135	94,489,049	37,192,947,791	42.4	36,204,146,312	43.9	37,192,947,791	XXX
12.8 Line 12.7 as a % of Col. 7	6.2	23.9	20.8	14.9	34.0	0.3	100.0	XXX	XXX	XXX	100.0	XXX
12.9 Line 12.7 as a % of Line 10.7, Col. 7, Section 10	2.6	10.1	8.8	6.3	14.4	0.1	42.4	XXX	XXX	XXX	42.4	XXX
<b>13. Total Privately Placed Bonds</b>												
13.1 NAIC 1	1,453,856,102	11,829,490,104	5,799,606,917	2,675,262,887	1,574,672,801		23,332,888,811	26.6	20,825,352,573	25.3	XXX	23,332,888,811
13.2 NAIC 2	3,493,241,263	5,499,763,670	7,824,424,329	3,091,283,969	1,154,204,299		21,062,917,530	24.0	19,889,886,190	24.1	XXX	21,062,917,530
13.3 NAIC 3	619,520,673	1,117,289,264	1,122,658,993	129,978,172	53,590,806		3,043,037,908	3.5	2,692,607,672	3.3	XXX	3,043,037,908
13.4 NAIC 4	38,868,823	937,179,237	733,023,609	83,241,404	24,218,412		1,816,531,485	2.1	1,826,434,282	2.2	XXX	1,816,531,485
13.5 NAIC 5	36,238,390	545,799,484	195,931,121	70,432,167	4,000,000		852,401,162	1.0	719,375,119	0.9	XXX	852,401,162
13.6 NAIC 6	37,464,979	78,706,741	116,570,481	19,204,059	89,324,589		341,270,849	0.4	263,342,064	0.3	XXX	341,270,849
13.7 Totals	5,679,190,230	20,008,228,501	15,792,215,449	6,069,402,656	2,900,010,908		50,449,047,744	57.6	46,216,997,898	56.1	XXX	50,449,047,744
13.8 Line 13.7 as a % of Col. 7	11.3	39.7	31.3	12.0	5.7		100.0	XXX	XXX	XXX	XXX	100.0
13.9 Line 13.7 as a % of Line 10.7, Col. 7, Section 10	6.5	22.8	18.0	6.9	3.3		57.6	XXX	XXX	XXX	XXX	57.6

(a) Includes \$ 20,034,676,437 freely tradable under SEC Rule 144 or qualified for resale under SEC Rule 144A.  
 (b) Includes \$ 3,224,766,740 current year, \$ 2,468,738,456 prior year of bonds with Z designations and \$ , current year \$ , prior year of bonds with Z\* designations. The letter "Z" means the NAIC designation was not assigned by the Securities Valuation Office (SVO) at the date of the statement. "Z\*" means the SVO could not evaluate the obligation because valuation procedures for the security class are under regulatory review.  
 (c) Includes \$ 291,630,421 current year, \$ 270,756,519 prior year of bonds with 5\* designations and \$ 198,785,420 , current year \$ 265,150,415 prior year of bonds with 6\* designations. "5\*" means the NAIC designation was assigned by the (SVO) in reliance on the insurer's certification that the issuer is current in all principal and interest payments. "6\*" means the NAIC designation was assigned by the SVO due to inadequate certification of principal and interest payments.  
 (d) Includes the following amount of short-term and cash equivalent bonds by NAIC designation: NAIC 1 \$ 656,132,369 ; NAIC 2 \$ 2,743,640,333 ; NAIC 3 \$ 421,405,140 ; NAIC 4 \$ ; NAIC 5 \$ ; NAIC 6 \$

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - PART 1A - SECTION 2**

Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Type and Subtype of Issues

Distribution by Type	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 10.6	9 Total from Col. 6 Prior Year	10 % From Col. 7 Prior Year	11 Total Publicly Traded	12 Total Privately Placed
<b>1. U.S. Governments</b>												
1.1 Issuer Obligations	465,038,482	2,870,402,855	1,463,813,144	286,495,187	1,790,904,641	XXX	6,876,654,309	7.8	7,803,347,060	9.5	6,876,654,309	
1.2 Residential Mortgage-Backed Securities	31,750,843	67,945,810	25,779,047	7,347,386	1,601,393	XXX	134,424,480	0.2	158,935,535	0.2	134,424,480	
1.3 Commercial Mortgage-Backed Securities	84,829	444,203	752,363	1,592,778	1,775,904	XXX	4,650,076	0.0	3,447,021	0.0	4,650,076	
1.4 Other Loan-Backed and Structured Securities	2,289,253	9,987,286	14,531,377	15,370,143		XXX	42,178,058	0.0	49,418,312	0.1	42,178,058	
1.5 Totals	499,163,406	2,948,780,154	1,504,875,931	310,805,495	1,794,281,938	XXX	7,057,906,924	8.1	8,015,147,927	9.7	7,057,906,923	
<b>2. All Other Governments</b>												
2.1 Issuer Obligations	7,874,449	103,151,736	411,902,215	150,862,903	249,908,045	XXX	923,699,348	1.1	772,758,640	0.9	439,188,470	484,510,878
2.2 Residential Mortgage-Backed Securities						XXX						
2.3 Commercial Mortgage-Backed Securities						XXX						
2.4 Other Loan-Backed and Structured Securities						XXX						
2.5 Totals	7,874,449	103,151,736	411,902,215	150,862,903	249,908,045	XXX	923,699,348	1.1	772,758,640	0.9	439,188,470	484,510,878
<b>3. U.S. States, Territories and Possessions, Guaranteed</b>												
3.1 Issuer Obligations	15,984,233	134,412,634	174,181,168	192,506,873	159,327,268	XXX	676,412,175	0.8	726,674,452	0.9	676,412,175	
3.2 Residential Mortgage-Backed Securities						XXX						
3.3 Commercial Mortgage-Backed Securities						XXX						
3.4 Other Loan-Backed and Structured Securities						XXX						
3.5 Totals	15,984,233	134,412,634	174,181,168	192,506,873	159,327,268	XXX	676,412,175	0.8	726,674,452	0.9	676,412,175	
<b>4. U.S. Political Subdivisions of States, Territories and Possessions, Guaranteed</b>												
4.1 Issuer Obligations	366,470	22,623,117	54,730,062	322,670,651	82,276,955	XXX	482,667,254	0.6	468,247,496	0.6	482,667,254	
4.2 Residential Mortgage-Backed Securities						XXX						
4.3 Commercial Mortgage-Backed Securities						XXX						
4.4 Other Loan-Backed and Structured Securities						XXX						
4.5 Totals	366,470	22,623,117	54,730,062	322,670,651	82,276,955	XXX	482,667,254	0.6	468,247,496	0.6	482,667,254	
<b>5. U.S. Special Revenue &amp; Special Assessment Obligations etc., Non-Guaranteed</b>												
5.1 Issuer Obligations	19,116,306	725,791,557	550,533,112	2,045,188,535	1,641,164,692	XXX	4,981,794,202	5.7	4,671,156,982	5.7	4,930,213,182	51,581,019
5.2 Residential Mortgage-Backed Securities	159,604,396	253,554,269	128,924,538	37,086,152	2,198,358	XXX	581,367,713	0.7	739,611,435	0.9	578,820,859	2,546,854
5.3 Commercial Mortgage-Backed Securities	409,730	41,071,421				XXX	41,481,151	0.0	3,374,984	0.0	41,481,151	
5.4 Other Loan-Backed and Structured Securities						XXX						
5.5 Totals	179,130,431	1,020,417,247	679,457,650	2,082,274,687	1,643,363,051	XXX	5,604,643,066	6.4	5,414,143,401	6.6	5,550,515,193	54,127,873
<b>6. Industrial and Miscellaneous</b>												
6.1 Issuer Obligations	6,002,576,939	11,753,213,748	16,066,386,375	7,621,261,038	11,256,589,044	XXX	52,700,027,145	60.1	47,706,062,578	57.9	20,122,480,355	32,577,546,790
6.2 Residential Mortgage-Backed Securities	162,355,062	396,643,593	144,288,046	95,023,187	7,923,796	XXX	806,233,685	0.9	992,657,460	1.2	667,633,582	138,600,102
6.3 Commercial Mortgage-Backed Securities	378,196,275	550,647,206	999,889,418	10,220		XXX	1,928,743,119	2.2	2,236,503,817	2.7	1,283,963,675	644,779,445
6.4 Other Loan-Backed and Structured Securities	556,606,999	6,238,148,672	2,841,814,722	730,196,199	172,090,627	XXX	10,538,857,218	12.0	9,548,981,443	11.6	676,081,762	9,862,775,457
6.5 Totals	7,099,735,274	18,938,653,220	20,052,378,562	8,446,490,644	11,436,603,467	XXX	65,973,861,168	75.3	60,484,205,298	73.4	22,750,159,374	43,223,701,794
<b>7. Hybrid Securities</b>												
7.1 Issuer Obligations	30,807,083	25,002,872	28,896,799	71,930,838	163,423,361	XXX	320,060,954	0.4	363,454,841	0.4	137,439,974	182,620,979
7.2 Residential Mortgage-Backed Securities						XXX						
7.3 Commercial Mortgage-Backed Securities						XXX						
7.4 Other Loan-Backed and Structured Securities						XXX						
7.5 Totals	30,807,083	25,002,872	28,896,799	71,930,838	163,423,361	XXX	320,060,954	0.4	363,454,841	0.4	137,439,974	182,620,979
<b>8. Parent, Subsidiaries and Affiliates</b>												
8.1 Issuer Obligations	99,257,131	5,358,607,245	372,656,262		977,299	XXX	5,831,497,937	6.7	5,427,428,832	6.6		5,831,497,937
8.2 Residential Mortgage-Backed Securities	2,813,039	895,607	634,780	189,198		XXX	4,532,622	0.0	6,302,015	0.0	4,169,378	363,244
8.3 Commercial Mortgage-Backed Securities	625,439	10,419,252		281,141		XXX	11,325,832	0.0	12,185,148	0.0		11,325,832
8.4 Other Loan-Backed and Structured Securities	35,961,930	333,472,999	246,536,441	18,826,178	26,101,660	XXX	660,899,208	0.8	730,596,160	0.9		660,899,208
8.5 Totals	138,657,538	5,703,395,103	619,827,483	19,296,516	27,078,959	XXX	6,508,255,599	7.4	6,176,512,155	7.5	4,169,378	6,504,086,221

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE D - PART 1A - SECTION 2 (Continued)**

Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Type and Subtype of Issues

Distribution by Type	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 10.6	9 Total from Col. 6 Prior Year	10 % From Col. 7 Prior Year	11 Total Publicly Traded	12 Total Privately Placed
<b>9. SVO Identified Funds</b>												
9.1 Exchange Traded Funds Identified by the SVO	XXX	XXX	XXX	XXX	XXX				XXX	XXX		
9.2 Bond Mutual Funds Identified by the SVO	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	
9.3 Totals	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	
<b>10. Total Bonds Current Year</b>												
10.1 Issuer Obligations	6,641,021,094	20,993,205,764	19,123,099,136	10,690,916,025	15,344,571,304	XXX	72,792,813,323	83.1	XXX	XXX	33,665,055,720	39,127,757,604
10.2 Residential Mortgage-Backed Securities	356,523,339	719,039,279	299,626,412	139,645,923	11,723,548	XXX	1,526,558,500	1.7	XXX	XXX	1,385,048,300	141,510,200
10.3 Commercial Mortgage-Backed Securities	379,316,272	602,582,082	1,000,641,781	1,884,140	1,775,904	XXX	1,986,200,179	2.3	XXX	XXX	1,330,094,902	656,105,277
10.4 Other Loan-Backed and Structured Securities	594,858,181	6,581,608,957	3,102,882,540	764,392,519	198,192,287	XXX	11,241,934,485	12.8	XXX	XXX	718,259,820	10,523,674,665
10.5 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	
10.6 Totals	7,971,718,885	28,896,436,082	23,526,249,869	11,596,838,607	15,556,263,043	94,489,049	87,641,995,535	100.0	XXX	XXX	37,192,947,790	50,449,047,746
10.7 Line 10.6 as a % of Col. 7	9.1	33.0	26.8	13.2	17.7	0.1	100.0	XXX	XXX	XXX	42.4	57.6
<b>11. Total Bonds Prior Year</b>												
11.1 Issuer Obligations	5,254,546,644	18,939,319,904	20,579,315,232	9,563,109,666	13,602,839,437	XXX	XXX	XXX	67,939,130,882	82.4	32,101,818,080	35,837,312,802
11.2 Residential Mortgage-Backed Securities	418,683,458	891,719,900	377,327,790	179,470,040	30,305,257	XXX	XXX	XXX	1,897,506,444	2.3	1,727,743,246	169,763,199
11.3 Commercial Mortgage-Backed Securities	439,856,457	596,171,733	1,216,712,742	1,645,015	1,125,023	XXX	XXX	XXX	2,255,510,969	2.7	1,585,730,500	669,780,469
11.4 Other Loan-Backed and Structured Securities	584,594,889	5,227,229,532	3,684,519,255	633,024,132	199,628,106	XXX	XXX	XXX	10,328,995,914	12.5	788,854,486	9,540,141,428
11.5 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11.6 Totals	6,697,681,447	25,654,441,068	25,857,875,019	10,377,248,853	13,833,897,823	XXX	XXX	XXX	82,421,144,210	100.0	36,204,146,312	46,216,997,898
11.7 Line 11.6 as a % of Col. 9	8.1	31.1	31.4	12.6	16.8	XXX	XXX	XXX	100.0	XXX	43.9	56.1
<b>12. Total Publicly Traded Bonds</b>												
12.1 Issuer Obligations	1,546,033,688	7,765,668,216	6,513,957,760	5,232,442,051	12,606,954,005	XXX	33,665,055,720	38.4	32,101,818,080	38.9	33,665,055,720	XXX
12.2 Residential Mortgage-Backed Securities	329,885,648	643,986,657	275,495,570	129,132,498	6,547,927	XXX	1,385,048,300	1.6	1,727,743,246	2.1	1,385,048,300	XXX
12.3 Commercial Mortgage-Backed Securities	368,248,993	225,802,893	732,668,349	1,598,763	1,775,904	XXX	1,330,094,902	1.5	1,585,730,500	1.9	1,330,094,902	XXX
12.4 Other Loan-Backed and Structured Securities	48,360,325	252,749,816	211,912,740	164,262,639	40,974,299	XXX	718,259,820	0.8	788,854,486	1.0	718,259,820	XXX
12.5 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	94,489,049	94,489,049	0.1	XXX	XXX	94,489,049	XXX
12.6 Totals	2,292,528,655	8,888,207,582	7,734,034,420	5,527,435,951	12,656,252,135	94,489,049	37,192,947,790	42.4	36,204,146,312	43.9	37,192,947,790	XXX
12.7 Line 12.6 as a % of Col. 7	6.2	23.9	20.8	14.9	34.0	0.3	100.0	XXX	XXX	XXX	100.0	XXX
12.8 Line 12.6 as a % of Line 10.6, Col. 7, Section 10	2.6	10.1	8.8	6.3	14.4	0.1	42.4	XXX	XXX	XXX	42.4	XXX
<b>13. Total Privately Placed Bonds</b>												
13.1 Issuer Obligations	5,094,987,405	13,227,537,548	12,609,141,376	5,458,473,974	2,737,617,300	XXX	39,127,757,603	44.6	35,837,312,802	43.5	XXX	39,127,757,603
13.2 Residential Mortgage-Backed Securities	26,637,690	75,052,622	24,130,841	10,513,425	5,175,621	XXX	141,510,200	0.2	169,763,199	0.2	XXX	141,510,200
13.3 Commercial Mortgage-Backed Securities	11,067,278	376,779,189	267,973,432	285,377	656,105,277	XXX	656,105,277	0.7	669,780,469	0.8	XXX	656,105,277
13.4 Other Loan-Backed and Structured Securities	546,497,856	6,328,859,141	2,890,969,800	600,129,880	157,217,988	XXX	10,523,674,665	12.0	9,540,141,428	11.6	XXX	10,523,674,665
13.5 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX				XXX	XXX	XXX	
13.6 Totals	5,679,190,230	20,008,228,501	15,792,215,449	6,069,402,656	2,900,010,909		50,449,047,745	57.6	46,216,997,898	56.1	XXX	50,449,047,745
13.7 Line 13.6 as a % of Col. 7	11.3	39.7	31.3	12.0	5.7		100.0	XXX	XXX	XXX	XXX	100.0
13.8 Line 13.6 as a % of Line 10.6, Col. 7, Section 10	6.5	22.8	18.0	6.9	3.3		57.6	XXX	XXX	XXX	XXX	57.6

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**SCHEDULE DA - VERIFICATION BETWEEN YEARS**

Short-Term Investments

	1	2	3	4	5
	Total	Bonds	Mortgage Loans	Other Short-term Investment Assets (a)	Investments in Parent, Subsidiaries and Affiliates
1. Book/adjusted carrying value, December 31 of prior year .....	167,854,960	167,854,960			
2. Cost of short-term investments acquired .....	2,154,741,437	2,154,741,437			
3. Accrual of discount .....	10,354,668	10,354,668			
4. Unrealized valuation increase (decrease) .....					
5. Total gain (loss) on disposals .....	39,287	39,287			
6. Deduct consideration received on disposals .....	1,624,998,125	1,624,998,125			
7. Deduct amortization of premium .....					
8. Total foreign exchange change in book/adjusted carrying value .....					
9. Deduct current year's other than temporary impairment recognized .....					
10. Book adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) .....	707,992,227	707,992,227			
11. Deduct total nonadmitted amounts .....					
12. Statement value at end of current period (Line 10 minus Line 11)	707,992,227	707,992,227			

(a) Indicate the category of such assets, for example, joint ventures, transportation equipment:

**SCHEDULE DB - PART A - VERIFICATION BETWEEN YEARS**

Options, Caps, Floors, Collars, Swaps and Forwards

1. Book/adjusted carrying value, December 31, prior year (Line 9, prior year) .....	3,427,737,410
2. Cost paid/(consideration received) on additions:	
2.1 Current year paid/(consideration received) at time of acquisition, still open, Section 1, Column 12 .....	331,453,344
2.2 Current year paid/(consideration received) at time of acquisition, terminated, Section 2, Column 14 .....	295,809,313
3. Unrealized valuation increase/(decrease):	
3.1 Section 1, Column 17 .....	483,811,130
3.2 Section 2, Column 19 .....	(237,313,637)
4. Total gain (loss) on termination recognized, Section 2, Column 22 .....	257,326,989
5. Considerations received/(paid) on terminations, Section 2, Column 15 .....	805,811,789
6. Amortization:	
6.1 Section 1, Column 19 .....	(1,880,643)
6.2 Section 2, Column 21 .....	(1,713,993)
7. Adjustment to the book/adjusted carrying value of hedged item:	
7.1 Section 1, Column 20 .....	
7.2 Section 2, Column 23 .....	
8. Total foreign exchange change in book/adjusted carrying value:	
8.1 Section 1, Column 18 .....	
8.2 Section 2, Column 20 .....	
9. Book/adjusted carrying value at end of current period (Lines 1+2+3+4-5+6+7+8) .....	3,749,418,124
10. Deduct nonadmitted assets .....	
11. Statement value at end of current period (Line 9 minus Line 10) .....	3,749,418,124

**SCHEDULE DB - PART B - VERIFICATION**

Futures Contracts

1. Book/Adjusted carrying value, December 31 of prior year (Line 6, prior year).....	
2. Cumulative cash change (Section 1, Broker Name/Net Cash Deposits Footnote - Cumulative Cash Change Column) .....	
3.1 Add:	
Change in variation margin on open contracts - Highly effective hedges	
3.11 Section 1, Column 15, current year minus .....	
3.12 Section 1, Column 15, prior year .....	
Change in variation margin on open contracts - All other	
3.13 Section 1, Column 18, current year minus .....	(30,561,317)
3.14 Section 1, Column 18, prior year .....	7,584,764
3.2 Add:	
Change in adjustment to basis of hedged item	
3.21 Section 1, Column 17, current year to date minus .....	
3.22 Section 1, Column 17, prior year .....	
Change in amount recognized	
3.23 Section 1, Column 19, current year to date minus .....	(30,561,317)
3.24 Section 1, Column 19, prior year .....	7,584,764
3.3 Subtotal (Line 3.1 minus Line 3.2) .....	
4.1 Cumulative variation margin on terminated contracts during the year (Section 2, Column 15) .....	(177,494,974)
4.2 Less:	
4.21 Amount used to adjust basis of hedged item (Section 2, Column 17) ..	
4.22 Amount recognized (Section 2, Column 16) .....	(185,075,670)
4.3 Subtotal (Line 4.1 minus Line 4.2) .....	7,580,695
5. Dispositions gains (losses) on contracts terminated in prior year:	
5.1 Total gain (loss) recognized for terminations in prior year .....	
5.2 Total gain (loss) adjusted into the hedged item(s) for terminations in prior year .....	(7,580,695)
6. Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2) .....	
7. Deduct total nonadmitted amounts .....	
8. Statement value at end of current period (Line 6 minus Line 7) .....	

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2	50,000,000	28,835,390	28,699,609	10/01/2012	10/01/2042	Interest Rate Swaps	(290,684)		758750-AA-2	REGAL BELOIT CORP Senior Note Ser 2007ATranche B	2	28,835,390	28,990,293
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		11,970,000	13,510,000	10/01/2012	10/01/2042	Interest Rate Swaps			69350K-AA-4	PNC Preferred Funding Trust II Unsecured Bond	2	11,970,000	13,510,000
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		11,111,531	11,830,000	10/01/2012	10/01/2042	Interest Rate Swaps			320808-AD-0	First Maryland Capital I Limited Guarantee Note	2	11,111,531	11,830,000
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2	50,000,000	5,600,000	5,261,143	10/01/2012	10/01/2042	Interest Rate Swaps	(349,811)		87246M-AA-0	TICP CLO VI 2016-2 Ltd Sr Secd Nt Cl A	1	5,600,000	5,610,954
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		6,407,665	6,417,502	10/01/2012	10/01/2042	Interest Rate Swaps			67818N-ZZ-5	SASOL CHEMICALS (USA) LLC	2	6,407,665	6,417,502
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		7,514,340	7,460,237	10/01/2012	10/01/2042	Interest Rate Swaps			77277L-A7-2	Rockall CLO BV Variable Funding Note- USD	1	7,514,340	7,460,237
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		4,950,444	4,638,535	10/01/2012	10/01/2042	Interest Rate Swaps			U8270Y-ZZ-4	SILVER STATE SOLAR SOUTH	2	4,950,444	4,638,535
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		1,814,250	1,818,786	10/01/2012	10/01/2042	Interest Rate Swaps			81683U-AF-4	SEMINOLE TRIBE OF FLORIDA	2	1,814,250	1,818,786
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		13,000,000	13,009,646	10/01/2012	10/01/2042	Interest Rate Swaps			14889K-AC-6	Catamaran CLO Ltd Series 2015-1A Class B	1	13,000,000	13,009,646
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	2		12,920,000	12,920,465	10/01/2012	10/01/2042	Interest Rate Swaps			55818Y-AE-1	Madison Park Funding Ltd Series 2015-17A Class B	1	12,920,000	12,920,465
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	264,000,000	16,531,886	13,284,491	11/29/2012	11/29/2042	Interest Rate Swaps	(2,716,501)		87244D-AC-8	Wind River CLO Ltd Series 2013-1A Class A2	1	16,531,886	16,000,992
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,278,168	17,879,630	11/29/2012	11/29/2042	Interest Rate Swaps			87244D-AA-2	Wind River CLO Ltd Series 2013-1A Class A1	1	18,278,168	17,879,630
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,616,803	4,451,517	11/29/2012	11/29/2042	Interest Rate Swaps			09625Y-AG-6	Bluemountain CLO 2012-1 Ltd Sr Sec Def Note Class C 144A	1	4,616,803	4,451,517
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		186,816,383	183,017,202	11/29/2012	11/29/2042	Interest Rate Swaps			85815X-AA-1	Steele Creek CLO Ltd Series 2014-1A Class A1	1	186,816,383	183,017,202
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		46,489,045	45,811,786	11/29/2012	11/29/2042	Interest Rate Swaps			14955A-AA-1	CAVALRY CLO LTD Series 2014-4A Class A	1	46,489,045	45,811,786
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,192,730	15,751,433	11/29/2012	11/29/2042	Interest Rate Swaps			39808F-AC-2	Greywolf CLO Ltd Series 2014-1A Class A2	1	15,192,730	15,751,433
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	6,447,668	9,076,574	12/27/2012	12/27/2042	Interest Rate Swaps	2,623,207		05618M-AJ-3	Babson CLO Ltd 2014-1111 Secd Def Mezz Term Nt C C-1	1	6,447,668	6,453,367
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,022,382	2,000,366	12/27/2012	12/27/2042	Interest Rate Swaps			50183X-AG-6	LOM Ltd Partnership Series 11A Class C	1	2,022,382	2,000,366
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,514,548	4,586,645	12/27/2012	12/27/2042	Interest Rate Swaps			87154E-AF-7	Symphony CLO XV Ltd Def Mezz NT CL D 144A	1	4,514,548	4,586,645
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,904,532	3,833,327	12/27/2012	12/27/2042	Interest Rate Swaps			15135A-AA-1	Cent CDO Ltd Series 2006-12A Class A	1	3,904,532	3,833,327
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,112,451	4,113,032	12/27/2012	12/27/2042	Interest Rate Swaps			056162-AC-4	Babson CLO Ltd 2015-1 Sr Secd Note Class B	1	4,112,451	4,113,032
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,400,000	17,465,633	12/27/2012	12/27/2042	Interest Rate Swaps			81789G-AA-9	SEVEN STICKS CLO LTD Sr Secured Note Class A-1	1	17,400,000	17,465,633
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,857,975	6,892,508	12/27/2012	12/27/2042	Interest Rate Swaps			46617Y-AD-5	JFIN CLO LTD Series 2015-1A Class C1	1	6,857,975	6,892,508
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,911,768	16,835,638	12/27/2012	12/27/2042	Interest Rate Swaps			24820R-AA-6	Statoil ASA Senior Unsecured Note	1	13,911,768	16,835,638
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,119,854	4,361,467	12/27/2012	12/27/2042	Interest Rate Swaps			00162L-AW-7	ALM XVI, LTD	1	4,119,854	4,361,467
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,388,373	4,350,052	12/27/2012	12/27/2042	Interest Rate Swaps			053633-AB-9	VERY POINT CLO LTD	1	4,388,373	4,350,052
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,116,207	12,013,021	12/27/2012	12/27/2042	Interest Rate Swaps			04965C-AC-2	ATRIUM XII Note Class B	1	12,116,207	12,013,021
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,500,000	10,510,805	12/27/2012	12/27/2042	Interest Rate Swaps			94949L-AA-8	WELLFLEET CLO 2016-2 LTD	1	10,500,000	10,510,805
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,970	12/27/2012	12/27/2042	Interest Rate Swaps			55953H-AL-7	MAGNETITE CLO LTD	1	10,000,000	9,999,970
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	43,800,000	46,424,784	12/27/2012	12/27/2042	Interest Rate Swaps	2,623,207		00900A-AA-6	Amco Series 2014-AA Class A	1	43,800,000	43,801,577
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,757,197	11,143,929	12/27/2012	12/27/2042	Interest Rate Swaps			14309D-AC-4	Carlyle High Yield Partners Series 2007-10A Class A2B	1	11,757,197	11,143,929

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,800,000	6,799,850	12/27/2012	12/27/2042	Interest Rate Swaps			48251B-AA-8	KKR CLO 16 Ltd Sr Secd Nt Cl A-1 Dryden Senior Loan Fund Series	1	6,800,000	6,799,850
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		35,089,107	34,866,265	12/27/2012	12/27/2042	Interest Rate Swaps			26250U-AC-9	2013-26A Class A	1	35,089,107	34,866,265
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,900,000	4,900,064	12/27/2012	12/27/2042	Interest Rate Swaps			67590B-AE-0	Octagon Inv Partners XVI Ltd Series 2013-1A Class C1	1	4,900,000	4,900,064
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	4,284,858	8,060,143	12/28/2012	12/28/2042	Interest Rate Swaps		3,735,722	38136B-AG-7	Goldentree Loan Opp III Ltd Sr Secured Nt Class A-1B-J	1	4,284,858	4,324,421
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,110,140	15,076,123	12/28/2012	12/28/2042	Interest Rate Swaps			55817U-AB-6	Madison Park Funding Ltd Series 2007-4A Class A1B	1	15,110,140	15,076,123
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,555,143	8,501,658	12/28/2012	12/28/2042	Interest Rate Swaps			26828C-AC-2	ECP CLO Ltd Series 2012-4A Class A2	1	8,555,143	8,501,658
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,173,987	9,048,270	12/28/2012	12/28/2042	Interest Rate Swaps			87155M-AC-5	Symphony CLO Ltd Series 2007-5A Class A2	1	9,173,987	9,048,270
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,774,357	6,583,771	12/28/2012	12/28/2042	Interest Rate Swaps			10302V-AG-0	Bowman Park CLO Ltd Series 2014-1A Class C	1	6,774,357	6,583,771
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,999,979	12/28/2012	12/28/2042	Interest Rate Swaps			55818X-BA-0	MADISON PARK FUNDING XVI, LTD. WELLFLEET CLO LTD Series 2015-1A	1	7,000,000	6,999,979
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	50,102,050	12/28/2012	12/28/2042	Interest Rate Swaps			949496-AC-7	Class A1 OHA Loan Funding Ltd. Series 2013-2A Class A	1	50,000,000	50,102,050
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	34,750,757	37,636,366	12/28/2012	12/28/2042	Interest Rate Swaps		3,735,722	67104L-AA-5	Goldentree Loan Opp VII Ltd Sr Secured Nt Class B-1 144A	1	34,750,757	33,900,644
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,150,000	9,132,121	12/28/2012	12/28/2042	Interest Rate Swaps			38137D-AC-1	Venture XVI CLO Ltd Sr Secd Note Class A-1L 144A	1	9,150,000	9,132,121
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		42,816,211	42,065,352	12/28/2012	12/28/2042	Interest Rate Swaps			92329X-AA-6	Tryon Park CLO Ltd Series 2013-1A Class A2	1	42,816,211	42,065,352
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,900,000	17,824,283	12/28/2012	12/28/2042	Interest Rate Swaps			89852T-AC-2	Carlyle Global Mkt CLO 2014-4 Sr Secd Note Class A-1 Accd	1	17,900,000	17,824,283
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	9,325,000	13,068,508	12/28/2012	12/28/2042	Interest Rate Swaps		3,735,722	14310U-AC-3	Goldentree Loan Opp VII Ltd Sr Secured Nt Class C-1 144A	1	9,325,000	9,332,786
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,400,000	5,400,886	12/28/2012	12/28/2042	Interest Rate Swaps			38137D-AG-2	Bluemountain CLO 2013-2 Ltd Sr Secured Note Class B-1 144A	1	5,400,000	5,400,886
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,100,000	10,063,509	12/28/2012	12/28/2042	Interest Rate Swaps			09626Y-AC-4	Race Point CLO Ltd. Series 2013-8A Class B	1	10,100,000	10,063,509
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,849,999	6,601,940	12/28/2012	12/28/2042	Interest Rate Swaps			74982L-AE-0	Flatiron CLO Ltd. Series 2011-1A Class A	1	6,849,999	6,601,940
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,726,771	5,729,995	12/28/2012	12/28/2042	Interest Rate Swaps			33882W-AA-1	Emerson Park CLO Ltd Series 2013-1A Class B1	1	5,726,771	5,729,995
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,396,822	12,943,821	12/28/2012	12/28/2042	Interest Rate Swaps			29108Q-AC-6	Wellfleet CLO 2016-2 Ltd Sr Secd Nt Cl A-2	1	13,396,822	12,943,821
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,859,033	6,874,670	12/28/2012	12/28/2042	Interest Rate Swaps			94949L-AC-4	L C M Ltd Partnership Series 14A Class C	1	6,859,033	6,874,670
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,046,403	5,003,180	12/28/2012	12/28/2042	Interest Rate Swaps			50184V-AG-9	JFIN CLO 2014-II Ltd Sr Secd Deferrable Nt Class B	1	5,046,403	5,003,180
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,954,986	4,999,985	12/28/2012	12/28/2042	Interest Rate Swaps			46617N-AE-7	ALM VII Ltd Series 2012-6A Class A2R	1	4,954,986	4,999,985
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,228,635	14,237,656	12/28/2012	12/28/2042	Interest Rate Swaps			00163E-AM-4	LCM XXII Ltd Sr Note Cl A-2	1	14,228,635	14,237,656
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,825,000	6,824,952	12/28/2012	12/28/2042	Interest Rate Swaps			50189G-AC-6	Bluemountain CLO 2013-1 Ltd Sr Secd Def Nt Cl B-R	1	6,825,000	6,824,952
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,253,811	4,246,515	12/28/2012	12/28/2042	Interest Rate Swaps			09626U-AQ-1	DRYDEN 36 SR LN FD SR SEC DEF NT CL C-R	1	4,253,811	4,246,515
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,350,000	6,343,650	12/28/2012	12/28/2042	Interest Rate Swaps			26249K-AM-3	JFIN CLO 2014 Ltd Sr Secured Note Class B-1	1	6,350,000	6,343,650
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,278,846	1,266,535	12/28/2012	12/28/2042	Interest Rate Swaps			46617E-AC-1	Stanford Street CLO Ltd Sr Secd Nt Class A	1	1,278,846	1,266,535
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	15,332,994	16,867,456	12/28/2012	12/28/2042	Interest Rate Swaps		1,867,861	854432-AA-9	Bluemountain CLO 2013-3 Ltd Sr Secured Note Class A 144A	1	15,332,994	14,999,595
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,037,365	19,755,333	12/28/2012	12/28/2042	Interest Rate Swaps			09625J-AA-2	MARINE PARK CLO LTD Sr Secd Deferrable Nt Cl B-R	1	20,037,365	19,755,333
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,568,393	9,571,043	12/28/2012	12/28/2042	Interest Rate Swaps			588416-BD-2		1	9,568,393	9,571,043

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,525,838	12/28/2012	12/28/2042	Interest Rate Swaps			26245C-AE-3	DRYDEN 43 SENIOR LOAN FUND Sr Secd Note Class B	1	7,500,000	7,525,838
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	7,303,765	9,403,068	12/28/2012	12/28/2042	Interest Rate Swaps		1,867,861	15135D-AC-1	Cent CDO 14 Ltd Sr Term Note Class B	1	7,303,765	7,535,207
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,000,000	11,985,108	12/28/2012	12/28/2042	Interest Rate Swaps			03765P-AC-7	APIDOS QLO XXI Sr Secured Note Class A-2 144A	1	12,000,000	11,985,108
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,725,000	11,728,471	12/28/2012	12/28/2042	Interest Rate Swaps			38137P-AE-0	Goldentree Loan Opp X Ltd Sr Secd Note Class B 144A	1	11,725,000	11,728,471
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,250,000	11,252,970	12/28/2012	12/28/2042	Interest Rate Swaps			04013Y-AQ-5	Ares XXIV CLO Ltd Sr Secd Note Class B-1-R	1	11,250,000	11,252,970
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,195,000	11,155,213	12/28/2012	12/28/2042	Interest Rate Swaps			26250D-AS-2	Dryden XXIV Senior Loan Fund Series 2012-24RA Class BR	1	11,195,000	11,155,213
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,472,406	1,478,946	12/28/2012	12/28/2042	Interest Rate Swaps			14311A-AG-7	Carlyle Global Market Strategi Series 2014-5A Class C	2	1,472,406	1,478,946
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	11,828,844	13,269,183	12/28/2012	12/28/2042	Interest Rate Swaps		1,867,861	14310D-AG-2	Carlyle Global Mkt CLO 2013-2 Mezz Secd Def Nt Class C 144A	1	11,828,844	11,401,322
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,740,000	12,738,433	12/28/2012	12/28/2042	Interest Rate Swaps			09626U-AN-8	BLUEMOUNTAIN CLO 2013-1 LTD	1	12,740,000	12,738,433
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,600,000	10,600,000	12/28/2012	12/28/2042	Interest Rate Swaps			69688X-AL-5	PALMER SQUARE CLO 2014-1 LTD	1	10,600,000	10,600,000
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,335,098	17,400,157	12/28/2012	12/28/2042	Interest Rate Swaps			05363X-AC-1	Avery Point V CLO Ltd Sr Secured Note Class A	1	17,335,098	17,400,157
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,513,984	12,275,457	12/28/2012	12/28/2042	Interest Rate Swaps		1,867,861	278287-AA-5	Eaton Vance CDO Ltd Series 2006-8A Class A	1	10,513,984	10,407,596
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,065,691	3,000,129	12/28/2012	12/28/2042	Interest Rate Swaps			87159Q-AN-8	Symphony CLO Ltd Series 2014-14A Class C1	1	3,065,691	3,000,129
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,831,442	10,738,127	12/28/2012	12/28/2042	Interest Rate Swaps			62953G-AC-5	NZCG Funding 2 Ltd Sr Secured Note Class A-2	1	10,831,442	10,738,127
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,050,000	3,050,000	12/28/2012	12/28/2042	Interest Rate Swaps			00191Y-AP-9	ARES XXXIII CLO LTD Mezz Def Nt CI B-2-R	1	3,050,000	3,050,000
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,486,655	4,483,278	12/28/2012	12/28/2042	Interest Rate Swaps			50184K-AW-8	LGM XIII LTD PARTNERSHIP SECD DEF NT CL C-R	1	4,486,655	4,483,278
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,960	12/28/2012	12/28/2042	Interest Rate Swaps			08181L-AA-5	Benefit Str Partners CLO X Ltd Sr Secd Nt CI A-1	1	5,000,000	4,999,960
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,005,390	12/28/2012	12/28/2042	Interest Rate Swaps			43132W-AC-4	Hildene CLO IV Ltd Series 2015-4A Class A2	1	10,000,000	10,005,390
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,903,112	12/28/2012	12/28/2042	Interest Rate Swaps			05875F-AC-1	BALLYROCK CLO 2016-1 LTD Sr Secd Note CI B-1	1	3,900,000	3,903,112
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	7,000,000	7,968,122	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	72349B-AE-4	Pinnacle Park CLO Ltd Series 2014-1A Class C	1	7,000,000	7,012,908
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,446,968	15,004,860	12/31/2012	12/31/2042	Interest Rate Swaps			09625Y-AD-3	Bluemountain CLO 2012-1 Ltd Sr Secured Note Class B 144A	1	15,446,968	15,004,860
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,056,180	3,035,983	12/31/2012	12/31/2042	Interest Rate Swaps			55818V-AC-1	Madison Park Funding Ltd 2014-15A Class A2	1	3,056,180	3,035,983
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,899,713	1,857,589	12/31/2012	12/31/2042	Interest Rate Swaps			04014J-AA-2	Ares XXVI CLO Ltd. Series 2013-26A Class A	1	1,899,713	1,857,589
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,475,000	9,491,515	12/31/2012	12/31/2042	Interest Rate Swaps			26249Q-AG-3	Dryden Senior Loan Fund Series 2015-38A Class B	1	9,475,000	9,491,515
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,705,352	8,636,678	12/31/2012	12/31/2042	Interest Rate Swaps			39808P-AC-0	Greywolf CLO Ltd Series 2015-1A Class A2	1	8,705,352	8,636,678
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,625,000	8,632,418	12/31/2012	12/31/2042	Interest Rate Swaps			26829C-AC-1	ECP CLO 2015-7 Ltd Sr Secd Nt Class A-2 144A	1	8,625,000	8,632,418
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	50,000,000	5,845,614	6,734,857	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	00248P-AE-6	A Voce CLO Ltd Series 2014-1A Class B	1	5,845,614	5,779,643
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		4,032,987	3,900,690	12/31/2012	12/31/2042	Interest Rate Swaps			67108F-AG-1	Ozlim Funding Ltd Series 2013-4A Class B	1	4,032,987	3,900,690
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		39,000,000	39,871,221	12/31/2012	12/31/2042	Interest Rate Swaps			223611-A*-5	Cowboys Stadium LP Senior Secured Note	2	39,000,000	39,871,221
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		1,539,985	1,499,985	12/31/2012	12/31/2042	Interest Rate Swaps			15015P-AB-1	Cedar Creek CLO Ltd Series 2013-1A Class B	1	1,539,985	1,499,985
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		988,684	1,035,692	12/31/2012	12/31/2042	Interest Rate Swaps			44983W-AD-0	ING Investment Management Series 2007-5A Class B	1	988,684	1,035,692

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	14,300,000	15,287,518	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	55820J-AC-4	Madison Park Funding XXI Ltd Note Class A-2	1	14,300,000	14,332,304
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,800,009	13,814,309	12/31/2012	12/31/2042	Interest Rate Swaps			948214-AC-5	Webster Park CLO Ltd. Sr Secd Note Class A-2	1	13,800,009	13,814,309
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,759,172	6,607,900	12/31/2012	12/31/2042	Interest Rate Swaps			67104L-AC-1	QHA Loan Funding 2013-2 Ltd Mezz Secd Def Nt Cl C	1	6,759,172	6,607,900
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,350,000	4,359,892	12/31/2012	12/31/2042	Interest Rate Swaps			020053-AS-3	ALM VIII Ltd Sr Secd Nt Cl A-1-R	1	4,350,000	4,359,892
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,086,503	4,140,160	12/31/2012	12/31/2042	Interest Rate Swaps			381366-AE-1	Goldentree Loan Opp IV Ltd Sr Secured Nt Class A-2 144A	1	4,086,503	4,140,160
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,669,508	8,757,377	12/31/2012	12/31/2042	Interest Rate Swaps			59983H-AB-5	MILL CREEK CLO II Ltd Sr Secd Nt Cl B-1	1	8,669,508	8,757,377
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	19,918,846	17,223,763	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	B000XF-V8-9	St Pauls CLO I B.V. Sr Secd Class A Reg-S	1	19,918,846	16,268,549
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,396,237	6,202,449	12/31/2012	12/31/2042	Interest Rate Swaps			67706H-AG-3	QHA Loan Funding 2013-1 Ltd Mezz Secd Def Note Cl C	1	6,396,237	6,202,449
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,646,178	10,000,910	12/31/2012	12/31/2042	Interest Rate Swaps			39808F-AC-2	Greywolf CLO III Ltd Sr Secd Nt Cl A-2	1	9,646,178	10,000,910
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,500,194	12/31/2012	12/31/2042	Interest Rate Swaps			26244M-AC-6	Dryden 45 Senior Loan Fd Sr Secd Note Cl B	1	4,500,000	4,500,194
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,150,000	7,186,951	12/31/2012	12/31/2042	Interest Rate Swaps			09628Q-AC-9	Bluemountain CLO 2016-1 Ltd Sr Secd Nt Class B	1	7,150,000	7,186,951
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,700,000	3,694,657	12/31/2012	12/31/2042	Interest Rate Swaps			24823B-AC-4	Denali Capital CLO X Ltd Sr Secd Note Class A-2L	1	3,700,000	3,694,657
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,025,000	8,107,938	12/31/2012	12/31/2042	Interest Rate Swaps			05618P-AJ-6	BABSON CLO LTD 2016-1 Secd Defferable Mezz Term Cl C	1	8,025,000	8,107,938
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	9,241,239	10,055,087	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	46616K-AE-4	JFIN CLO 2013 Ltd Sr Secd Deferrable Nt Class B	1	9,241,239	9,099,873
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,693,037	11,309,413	12/31/2012	12/31/2042	Interest Rate Swaps			03764D-AD-3	Apidos CLO XII Mezz Def Note Class C	1	11,693,037	11,309,413
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,600,000	10,605,756	12/31/2012	12/31/2042	Interest Rate Swaps			006897-AE-2	Adirondack Park CLO Ltd. Sr Secd Note Class B	1	10,600,000	10,605,756
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,028,660	12/31/2012	12/31/2042	Interest Rate Swaps			50188Q-AE-1	LOM XIX Ltd Partnership Def Mezz Nt Cl C	1	10,000,000	10,028,660
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,675,000	10,674,893	12/31/2012	12/31/2042	Interest Rate Swaps			38137Q-AC-2	Goldentree Loan Opp IX Ltd Sr Secd Nt Cl B-1-R	1	10,675,000	10,674,893
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	5,078,043	5,808,772	12/31/2012	12/31/2042	Interest Rate Swaps		955,214	15136R-AJ-4	Cent CLO 18 Ltd Def Note Class C-1	1	5,078,043	4,853,558
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,306,109	4,325,614	12/31/2012	12/31/2042	Interest Rate Swaps			14308L-AE-3	Carlyle Global Mkt CLO 2014-3 Sr Secd Note Class A-2	1	4,306,109	4,325,614
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,250,000	17,249,879	12/31/2012	12/31/2042	Interest Rate Swaps			27830D-AC-4	Eaton Vance CLO 2014-1 Ltd Sr Secd Note Class B	1	17,250,000	17,249,879
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,072,423	3,001,068	12/31/2012	12/31/2042	Interest Rate Swaps			74982L-AG-5	Race Point VIII CLO Ltd. Sr Secd Def Nt Cl C	1	3,072,423	3,001,068
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,750,000	21,759,092	12/31/2012	12/31/2042	Interest Rate Swaps			39808P-AA-4	Greywolf CLO V Ltd Sr Secd Nt Cl A-1	1	21,750,000	21,759,092
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	28,290,627	29,272,406	04/09/2013	04/09/2043	Interest Rate Swaps		1,609,081	04014J-AA-2	Ares XXVI CLO Ltd. Series 2013-26A Class A	1	28,290,627	27,663,325
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,802,173	4,806,549	04/09/2013	04/09/2043	Interest Rate Swaps			36248M-AB-3	GT Loan Financing I Ltd. Sr Secd Note Class B	1	4,802,173	4,806,549
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,577,914	12,475,225	04/09/2013	04/09/2043	Interest Rate Swaps			14954W-AC-0	Cavalry CLO III Ltd Sr Secd Note Class B	1	12,577,914	12,475,225
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,225,000	6,226,687	04/09/2013	04/09/2043	Interest Rate Swaps			67106J-AG-5	QHA Credit Partners X Ltd Mezz Secd Def Nt Cl C	1	6,225,000	6,226,687
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,321,565	6,198,394	04/09/2013	04/09/2043	Interest Rate Swaps			43132R-AA-9	Hildene CLO I Ltd Sr Secd Nt Cl A	1	6,321,565	6,198,394
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,000,000	22,400,000	24,020,289	04/09/2013	04/09/2043	Interest Rate Swaps		1,755,361	04941G-AC-2	Atlas Senior Loan Fund III Ltd Sr Secd Note Class B	1	22,400,000	22,264,928
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,150,000	9,132,121	04/09/2013	04/09/2043	Interest Rate Swaps			38137D-AC-1	Goldentree Loan Opp VII Ltd Sr Secured Nt Class B-1 144A	1	9,150,000	9,132,121
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,786,816	3,651,245	04/09/2013	04/09/2043	Interest Rate Swaps			09625Y-AG-6	Bluemountain CLO 2012-1 Ltd Sr Sec Def Note Class C 144A	1	3,786,816	3,651,245

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,960	04/09/2013	04/09/2043	Interest Rate Swaps			14310M-AS-6	Carlyle Global Mkt CLO 2014-1 MEZZ SECDEF NT CL C-R	1	10,000,000	9,999,960
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,750,000	04/09/2013	04/09/2043	Interest Rate Swaps			27830B-AQ-7	Eaton Vance CLO 2013-1 Ltd Series 2013-1A Clas A2R	1	12,750,000	12,750,000
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,016,307	2,944,461	04/09/2013	04/09/2043	Interest Rate Swaps			131248-AE-6	Callidus Debt Ptrs CLO Fd VI Sr Secd Note Class A-2	1	3,016,307	2,944,461
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	2,946,357	04/09/2013	04/09/2043	Interest Rate Swaps		2,243,790	50183X-AC-5	LXM XI Ltd Partnership Sr Nt CI A	1	2,946,357	2,945,176
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,872,388	7,804,961	04/09/2013	04/09/2043	Interest Rate Swaps			50184V-AG-9	LXM XIV LP Def Mezz Nt CI C	1	7,872,388	7,804,961
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,100,000	17,101,710	04/09/2013	04/09/2043	Interest Rate Swaps			55818P-AC-4	Madison Park Funding XII Ltd Note Class B-1	1	17,100,000	17,101,710
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,500,000	12,514,375	04/09/2013	04/09/2043	Interest Rate Swaps			50188G-AE-3	LXM XVIII Ltd Partnership Sr Nt Class B-1 144A	1	12,500,000	12,514,375
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,137,847	3,028,089	04/09/2013	04/09/2043	Interest Rate Swaps			67104L-AB-3	OH Loan Funding 2013-2 Ltd Sr Secd Nt CI B	1	3,137,847	3,028,089
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	13,058,630	04/09/2013	04/09/2043	Interest Rate Swaps			26244Y-AC-0	Dryden 42 Sr Ln Fd Sr Secd Note Class B	1	13,000,000	13,058,630
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	20,719,259	04/09/2013	04/09/2043	Interest Rate Swaps		2,243,790	27829K-AE-7	Eaton Vance CDO X PLC 2nd Priority Sr Secd Nt CI B2	1	20,719,259	20,301,288
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,123,861	3,055,202	04/09/2013	04/09/2043	Interest Rate Swaps			50184V-AC-8	LXM XIV LP Series 14A Class A Stewart Park CLO Ltd Sr Secured Note Class B 144A	1	3,123,861	3,055,202
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,610,000	8,616,793	04/09/2013	04/09/2043	Interest Rate Swaps			860444-AC-2	ECP CLO 2015-7 Ltd Sr Secd Deferrable Nt CI B-1	1	8,610,000	8,616,793
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,626,012	8,573,446	04/09/2013	04/09/2043	Interest Rate Swaps			26829C-AJ-6	MARINE PARK CLO LTD Sr Secd Note Class A-2-R 144A	1	8,626,012	8,573,446
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,504,627	04/09/2013	04/09/2043	Interest Rate Swaps			568416-BB-6	LXM XIX Ltd Partnership Sr Note Class B	1	7,500,000	7,504,627
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	7,013,650	04/09/2013	04/09/2043	Interest Rate Swaps			50188Q-AC-5	Treman Park CLO Ltd Sr Secd Nt Class B-1 144A	1	7,000,000	7,013,650
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,825,000	4,825,545	04/09/2013	04/09/2043	Interest Rate Swaps			89473L-AB-0	OZLM XIV LTD Sr Secd Note Class A-1A	1	4,825,000	4,825,545
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	28,642,940	04/09/2013	04/09/2043	Interest Rate Swaps		1,770,086	67110H-AA-6	Longfellow Place CLO Ltd Sr Secd Nt CI B	1	28,642,940	28,844,266
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,962,313	16,559,251	04/09/2013	04/09/2043	Interest Rate Swaps			54303P-AB-1	Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	16,962,313	16,559,251
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	13,087,763	04/09/2013	04/09/2043	Interest Rate Swaps			50189C-AE-1	LXM XXI LP Sr Note CI B-1	1	13,000,000	13,087,763
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		60,000,000	38,028,765	04/09/2013	04/09/2043	Interest Rate Swaps		1,931,003	04941G-AA-6	Carlyle Global Mkt CLO 2013-3 Sr Secd Note Class A-1 144A	1	38,028,765	37,996,200
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,286,659	24,948,852	04/09/2013	04/09/2043	Interest Rate Swaps			14310G-AA-8	Longfellow Place CLO Ltd Sr Secd Nt CI A	1	25,286,659	24,948,852
57629*BB6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	57,424,250	04/09/2013	04/09/2043	Interest Rate Swaps		1,618,168	54303P-AA-3	Longfellow Place CLO Ltd Sr Secd Nt CI A	1	55,800,000	55,806,082
57629*AZ4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	57,424,250	04/09/2013	04/09/2043	Interest Rate Swaps		1,618,168	54303P-AA-3	Longfellow Place CLO Ltd Sr Secd Nt CI A	1	55,800,000	55,806,082
92553PA*3	Viacom, Inc. Senior Note	2		20,000,000	23,756,680	12/20/2013	03/20/2019	5 Yr Credit Default Swap	256,680	228,452	Q3915H-AB-2	Fletcher Building Intl LP Gtd Senior Note Series B	2	23,500,000	25,517,217
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		100,000,000	112,158,361	03/05/2014	03/05/2034	Interest Rate Swaps		12,355,810	872455-AA-8	TICOP CLO I Ltd Sr Secd Nt Class A-1	1	112,158,361	110,000,550
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		100,000,000	102,219,962	03/05/2014	03/05/2034	Interest Rate Swaps		12,384,743	854432-AA-9	Stanford Street CLO Ltd Sr Secd Nt Class A	1	102,219,962	99,997,300
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,177,125	4,898,010	03/05/2014	03/05/2034	Interest Rate Swaps			40537X-AE-5	Halcyon Ln Advisors Fdg 2013-1 Sr Secd Def Nt CI B	1	5,177,125	4,898,010
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		150,000,000	164,835,009	05/19/2014	05/19/2044	Interest Rate Swaps		20,918,399	09627L-AA-5	Bluemountain CLO 2014-1 Ltd Sr Secured Note Class A 144A	1	164,835,009	161,262,255
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		125,000,000	85,443,086	05/19/2014	05/19/2034	Interest Rate Swaps		11,253,259	43132R-AA-9	Hildene CLO I Ltd Sr Secd Nt CI A	1	85,443,086	83,778,296
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		40,878,516	39,516,008	05/19/2014	05/19/2034	Interest Rate Swaps			49638W-AD-8	Kingsland VI Ltd Sr Secd Nt CI B	1	40,878,516	39,516,008
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,282,543	13,000,026	05/19/2014	05/19/2034	Interest Rate Swaps			26249E-AC-9	Dryden 31 Senior Loan Fund Sr Secd Note Class B	1	13,282,543	13,000,026

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	156,000,000	177,232,799	05/19/2014	05/19/2044	Interest Rate Swaps	21,220,007	21,220,007	05363U-AC-7	Avery Point IV CLO Ltd Sr Secd Nt CI A	1	156,000,000	156,012,792
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	8,797,468	29,842,365	05/19/2014	05/19/2044	Interest Rate Swaps	21,165,873	21,165,873	03765D-AE-0	Apidos CLO XVIII Mezz Def Note Class B	1	8,797,468	8,676,492
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	15,000,000	15,000,000	14,998,530	05/19/2014	05/19/2044	Interest Rate Swaps			00164B-AS-6	ALM VII R 2 Ltd Series 2013-7R2A Class A2R	1	15,000,000	14,998,530
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	15,000,000	15,000,000	14,999,820	05/19/2014	05/19/2044	Interest Rate Swaps			09627V-AS-4	Bluemountain CLO 2014-4 Ltd Sr Secd Nt CI B-1 R	1	15,000,000	14,999,820
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	15,000,000	15,000,000	14,999,010	05/19/2014	05/19/2044	Interest Rate Swaps			38137F-AE-2	Goldentree Ln Opp XI Ltd Sr Secd Nt CI B-R	1	15,000,000	14,999,010
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	15,000,000	15,000,000	14,999,940	05/19/2014	05/19/2044	Interest Rate Swaps			67091H-AK-7	QHA Loan Fdg 2012-1 Ltd Sr Secd Nt CI B-1R	1	15,000,000	14,999,940
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	14,600,000	14,600,000	14,649,465	05/19/2014	05/19/2044	Interest Rate Swaps			09628W-AC-6	Bluemountain CLO 2016-2 Ltd Sr Secd Nt CI A-2	1	14,600,000	14,649,465
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	13,900,000	13,900,000	13,898,805	05/19/2014	05/19/2044	Interest Rate Swaps			92915P-AB-1	Voya CLO 2014-1 Ltd Note CI A-2A-R	1	13,900,000	13,898,805
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	13,850,000	13,850,000	13,849,820	05/19/2014	05/19/2044	Interest Rate Swaps			09626R-AQ-8	Bluemountain CLO 2012-2 Ltd Sr Secd Nt CI B-R	1	13,850,000	13,849,820
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	13,850,000	13,850,000	13,849,765	05/19/2014	05/19/2044	Interest Rate Swaps			11014P-AB-1	Bristol Park CLO Ltd Sr Secd Nt CI B	1	13,850,000	13,849,765
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	12,625,000	12,625,000	12,681,825	05/19/2014	05/19/2044	Interest Rate Swaps			88433A-AC-3	THL CR WIND RIV 2016-1 CLO LTD SR SECN CL B	1	12,625,000	12,681,825
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	12,150,000	12,150,000	12,188,746	05/19/2014	05/19/2044	Interest Rate Swaps			056828-AC-0	Bain Capital Credit CLO 2016-2 Sr Secd Nt CI B	1	12,150,000	12,188,746
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	11,175,000	11,175,000	11,174,922	05/19/2014	05/19/2044	Interest Rate Swaps			04941M-AF-2	Atlas Sr Loan Fund V Ltd Sr Secd Nt CI B-R	1	11,175,000	11,174,922
57629*BJ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	142,938,093	160,531,882	05/19/2014	05/19/2044	Interest Rate Swaps	20,794,662	20,794,662	49638W-AB-2	Kingsland VI Ltd Sr Secd Nt CI A-1	1	142,938,093	139,737,220
57629*BJ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	1,041,475	1,041,475	1,042,125	05/19/2014	05/19/2044	Interest Rate Swaps			639107-AE-1	Nautique Funding Ltd Sr Note Class A-3	1	1,041,475	1,042,125
57629*BJ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	4,041,822	4,041,822	4,092,854	05/19/2014	05/19/2044	Interest Rate Swaps			82835A-AE-6	Silverado CLO 2006-11 Ltd Sr Secd Nt Class A-1-J	1	4,041,822	4,092,854
57629*BJ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	11,188,517	11,188,517	11,403,265	05/19/2014	05/19/2044	Interest Rate Swaps			05617W-AA-1	Babson CLO Ltd 2013-1 Series 13-1A Class A	1	11,188,517	11,403,265
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	145,668,705	163,662,673	05/19/2014	05/19/2044	Interest Rate Swaps	20,794,662	20,794,662	49638Y-AA-0	Kingsland VII Ltd Sr Secd Nt CI A	1	145,668,705	142,868,011
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	9,150,000	9,150,000	9,149,680	05/19/2014	05/19/2044	Interest Rate Swaps			79410U-AC-5	Salem Fields CLO Ltd Sr Secd Nt CI A-2	1	9,150,000	9,149,680
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	40,848,892	60,858,211	05/19/2014	05/19/2044	Interest Rate Swaps	20,856,531	20,856,531	36248M-AA-5	GT Loan Financing I Ltd. Sr Secd Note Class A	1	40,848,892	40,001,680
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	77,000,000	77,000,000	76,999,923	05/19/2014	05/19/2044	Interest Rate Swaps			46617N-AA-5	JFIN CLO 2014-11 Ltd Sr Secured Note Class A-1 144A	1	77,000,000	76,999,923
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	32,601,510	32,601,510	31,884,960	05/19/2014	05/19/2044	Interest Rate Swaps			50184V-AC-8	LCM XIV LP Series 14A Class A	1	32,601,510	31,884,960
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	1,767,148	1,767,148	1,707,296	05/19/2014	05/19/2044	Interest Rate Swaps			87159F-AB-8	Symphony CLO XII LTD Sr Note Class B-1	1	1,767,148	1,707,296
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	122,861,910	141,781,611	05/19/2014	05/19/2044	Interest Rate Swaps	20,871,998	20,871,998	126612-AA-8	CVP Cascade CLO-1 Ltd Note Class A-1	1	122,861,910	120,909,613
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	32,826,778	32,826,778	32,451,233	05/19/2014	05/19/2044	Interest Rate Swaps			38137L-AA-7	Goldentree Loan Opp VIII Ltd Sr Secd Nt Class A	1	32,826,778	32,451,233
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	135,000,000	112,514,158	129,221,390	05/19/2014	05/19/2044	Interest Rate Swaps	19,216,330	19,216,330	48274L-AA-9	KVK CLO 2014-1 LTD Sr Secd Nt CI A-1	1	112,514,158	110,005,060
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	33,845,839	33,845,839	33,151,326	05/19/2014	05/19/2044	Interest Rate Swaps			48274L-AC-5	KVK CLO 2014-1 LTD Sr Secd Nt CI B	1	33,845,839	33,151,326
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	85,000,000	94,893,357	101,855,916	05/09/2014	05/09/2034	Interest Rate Swaps	9,001,738	9,001,738	67108L-AA-1	Ozlm VI Ltd Sr Secd Nt CI A-1	1	94,893,357	92,854,178
57629*BQ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,000,000	67,660,035	75,738,707	06/05/2014	06/05/2044	Interest Rate Swaps	9,607,376	9,607,376	48274H-AA-8	KVK CLO 2013-2 Ltd Sr Secd Nt CI A	1	67,660,035	66,131,331
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	132,217,233	146,759,315	07/22/2014	07/22/2044	Interest Rate Swaps	16,798,315	16,798,315	126611-AA-0	CVP Cascade CLO-2 Ltd Note Class A-1	1	132,217,233	129,961,000
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	24,409,335	40,804,063	07/22/2014	07/22/2044	Interest Rate Swaps	16,811,263	16,811,263	126611-AA-0	CVP Cascade CLO-2 Ltd Note Class A-1	1	24,409,335	23,992,800

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,981,664	16,013,730	07/22/2014	07/22/2044	Interest Rate Swaps			17178N-AC-3	CIFC Fdg 2007-III Ltd Sr Secd Note Class A-1-J	1	15,981,664	16,013,730
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		39,309,029	38,722,991	07/22/2014	07/22/2044	Interest Rate Swaps			87159F-AA-0	Symphony CLO XII LTD Sr Note Cl A Cavalry CLO III Ltd Sr Secd Note Class A	1	39,309,029	38,722,991
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,474,913	25,001,225	07/22/2014	07/22/2044	Interest Rate Swaps			14954W-AA-4	Dryden 30 Senior Loan Fund Sr Secd Note Class A	1	25,474,913	25,001,225
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,599,939	7,599,939	04/09/2013	04/09/2043	Interest Rate Swaps			26249B-AA-9	OHA CR PARTNERS VII LTD SEC2 MEZZ NT CL C-R	1	7,599,939	7,599,939
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,977,481	2,974,289	04/09/2013	04/09/2043	Interest Rate Swaps			67102Q-AP-3	TCI-CENT CLO 2016-1 LTD. SR SEC2 NT CL A-2	1	2,977,481	2,974,289
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,540,000	6,539,902	04/09/2013	04/09/2043	Interest Rate Swaps			87231L-AC-5	THL Cr Wind River 2016-2 CLO Series 16-2A Class B	1	6,540,000	6,539,902
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,750,000	5,749,741	04/09/2013	04/09/2043	Interest Rate Swaps			88433B-AC-1	TICP CLO II Ltd Sr Secured Note Class A-1A	1	5,750,000	5,749,741
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	39,121,426	55,361,070	07/22/2014	07/22/2044	Interest Rate Swaps		16,811,263	87247C-AA-1	Octagon Inv Partners XVI Ltd Series 2013-1A Class A	1	39,121,426	38,549,807
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,046,154	8,941,417	07/22/2014	07/22/2044	Interest Rate Swaps			67590B-AA-8	Avery Point IV CLO Ltd Sr Secd Nt Cl B-1	1	9,046,154	8,941,417
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,999,382	25,003,325	07/22/2014	07/22/2044	Interest Rate Swaps			05363U-AE-3	Bluemountain CLO 2014-1 Ltd Sr Secured Note Class B-1 144A	1	24,999,382	25,003,325
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,594,495	25,001,825	07/22/2014	07/22/2044	Interest Rate Swaps			09627L-AC-1	Madison Park Funding XI Ltd. Note Class B-1	1	25,594,495	25,001,825
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,333,431	9,958,480	07/22/2014	07/22/2044	Interest Rate Swaps			55818K-AG-6	Apidos CLO XX Mezzanine Deferrable Note Cl C	1	10,333,431	9,958,480
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,461,643	4,474,144	07/22/2014	07/22/2044	Interest Rate Swaps			03765L-AG-7	Babson CLO Ltd 2012-1 Sr Secd Def Note Class C	1	4,461,643	4,474,144
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,360,613	4,503,326	07/22/2014	07/22/2044	Interest Rate Swaps			05617L-AD-9	REGATTA VI FUNDING LTD. Sr Secd Nt Class A	1	4,360,613	4,503,326
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,251,709	8,261,258	07/22/2014	07/22/2044	Interest Rate Swaps			75887N-AC-3	KVK CLO 2013-2 Ltd Sr Secd Nt Cl A	1	8,251,709	8,261,258
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,070,803	3,001,422	07/22/2014	07/22/2044	Interest Rate Swaps			48274H-AA-8	THL Cr Wind River 2013-CLO Ltd Sr Secd Nt Class A-2	1	3,070,803	3,001,422
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,549,864	1,500,093	07/22/2014	07/22/2044	Interest Rate Swaps			87244D-AC-8	Silvermore CLO Ltd Sr Secd Nt Class A-1	1	1,549,864	1,500,093
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	25,028,136	41,267,483	07/22/2014	07/22/2044	Interest Rate Swaps		16,759,472	82842B-AA-0	Apidos CLO XII Sr Secd Note Class B-1	1	25,028,136	24,508,011
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,711,573	24,406,881	07/22/2014	07/22/2044	Interest Rate Swaps			03764D-AB-7	Kingsland VI Ltd Secd Def Mezz Nt Cl C	1	24,711,573	24,406,881
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,749,581	22,009,592	07/22/2014	07/22/2044	Interest Rate Swaps			49638W-AE-6	OHA Loan Funding 2013-2 Ltd Sr Secd Nt Cl B	1	22,749,581	22,009,592
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,724,684	19,999,760	07/22/2014	07/22/2044	Interest Rate Swaps			67104L-AB-3	Bluemountain CLO 2014-3 Ltd Sr Secured Note Class A-1 144A	1	20,724,684	19,999,760
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,631,384	23,255,789	07/22/2014	07/22/2044	Interest Rate Swaps			09627R-AA-2	Avery Point IV CLO Ltd Sr Secd Def Nt Cl C	1	23,631,384	23,255,789
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,004,755	07/22/2014	07/22/2044	Interest Rate Swaps			05363U-AJ-2	Octagon Loan Funding Ltd Sr Secd Note Cl A-1	1	15,000,000	15,004,755
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	23,709,274	40,029,697	07/22/2014	07/22/2044	Interest Rate Swaps		16,772,420	67590R-AC-9	Goldentree Loan Opp VII Ltd Series 2013-7A Class A	1	23,709,274	23,257,277
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,544,310	23,207,140	07/22/2014	07/22/2044	Interest Rate Swaps			38137D-AA-5	Ozlm Funding IV Ltd Series 2013-4A Class A1	1	23,544,310	23,207,140
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,899,757	22,374,150	07/22/2014	07/22/2044	Interest Rate Swaps			67108F-AA-4	Avery Point II CLO Ltd Sr Secd Nt Cl B-1	1	22,899,757	22,374,150
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,400,000	22,270,909	07/22/2014	07/22/2044	Interest Rate Swap			053635-AC-2	Riserva CLO Ltd DEF MEZZ SEC2 CL C	1	22,400,000	22,270,909
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,249,919	07/22/2014	07/22/2044	Interest Rate Swap			76761R-AE-9	TCI-CENT CLO 2016-1 LTD. SR SEC2 NT CL A-1	1	4,250,000	4,249,919
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,499,924	07/22/2014	07/22/2044	Interest Rate Swap			87231L-AA-9	Hi Idene CLO I Ltd Sr Secd Nt Cl B-1	1	8,500,000	8,499,924
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,409,141	20,000,520	07/22/2014	07/22/2044	Interest Rate Swap			43132R-AC-5	Pinnacle Park CLO Ltd Sr Secd Nt Class B	1	20,409,141	20,000,520
57629*BX8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	30,000,000	22,000,000	25,664,017	08/18/2014	08/18/2044	Interest Rate Swap		3,652,401	72349B-AC-8		1	22,000,000	22,011,616

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*B18	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,909,595	13,215,106	08/18/2014	08/18/2044	Interest Rate Swap			87155F-AL-0	Symphony CLO II Ltd Sr Ntoe Class A-3	1	12,909,595	13,215,106
57629*B23	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,559,444	16,233,814	08/27/2014	08/27/2044	Interest Rate Swap		5,712,058	67092R-AA-6	OCF CLO 2016-12 Ltd Series 16-12A Class A1	1	10,559,444	10,521,756
57629*B23	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,569,057	9,553,134	08/27/2014	08/27/2044	Interest Rate Swap			46617Y-AB-9	JFIN CLO 2015 LTD Sr Secd Nt CI B-1	1	9,569,057	9,553,134
57629*B23	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,170,913	19,825,500	08/27/2014	08/27/2044	Interest Rate Swap			872455-AE-0	TICP CLO I Ltd Sr Secd Nt Class A-2B	1	20,170,913	19,825,500
57629*B23	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	12,999,922	08/27/2014	08/27/2044	Interest Rate Swap			50183U-AH-0	LCM X LP Note Class B-R	1	13,000,000	12,999,922
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	19,570,884	24,834,606	08/27/2014	08/27/2044	Interest Rate Swap		5,732,830	38137L-AJ-8	Goldentree Loan Opp VIII Ltd Sr Secured Nt Class B-1 144A	1	19,570,884	19,101,776
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,578,906	19,101,394	08/27/2014	08/27/2044	Interest Rate Swap			67108L-AC-7	Ozlm VI Ltd Sr Secd Note CI A-2A Race Point V CLO Ltd Sr Secd Nt CI B-R	1	19,578,906	19,101,394
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,900,000	18,923,115	08/27/2014	08/27/2044	Interest Rate Swap			74982N-AB-2	Avery Point V CLO Ltd Sr Secd Nt CI B	1	18,900,000	18,923,115
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	18,650,000	24,332,020	08/27/2014	08/27/2044	Interest Rate Swap		5,680,901	05363X-AE-7	Apidos CLO XVIII Sr Secd Note Class A-2A	1	18,650,000	18,651,119
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,129,042	18,750,300	08/27/2014	08/27/2044	Interest Rate Swap			03765D-AC-4	Barings CLO Ltd 2016-III Sr Secd Nt CI A-1	1	19,129,042	18,750,300
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,100,000	14,111,054	08/27/2014	08/27/2044	Interest Rate Swap			06759Y-AA-3	QHA Credit Partners X Ltd Sr Secd Nt CI B	1	14,100,000	14,111,054
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	18,500,000	24,145,938	08/27/2014	08/27/2044	Interest Rate Swap		5,644,550	67106J-AE-0	Kingsland VII Ltd Sr Secd Nt CI B	1	18,500,000	18,501,388
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,889,139	18,501,758	08/27/2014	08/27/2044	Interest Rate Swap			49638Y-AC-6	Ares XXXI CLO Ltd Sr Note Class A-2	1	18,889,139	18,501,758
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,679,977	18,658,057	08/27/2014	08/27/2044	Interest Rate Swap			04015B-AC-4	Bluemountain CLO 2014-2 Ltd Sr Secured Note Class B-1 144A	1	18,679,977	18,658,057
57629*CD1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	30,000,000	18,640,487	21,580,096	09/04/2014	09/04/2044	Interest Rate Swap		3,304,237	09626Q-AC-1	Cavalry CLO II Ltd Note Class B-1	1	18,640,487	18,275,859
57629*CD1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,858,098	16,510,165	09/04/2014	09/04/2044	Interest Rate Swap			14954T-AC-7	KVK CLO 2014-1 LTD Sr Secd Nt CI A-1	1	16,858,098	16,510,165
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	63,928,499	79,508,710	09/08/2014	09/08/2044	Interest Rate Swap		17,005,835	48274L-AA-9	Anchorage Cap CLO 5 Ltd Sr Secd Note Class A	1	63,928,499	62,502,875
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,221,015	12,206,124	09/08/2014	09/08/2044	Interest Rate Swap			033286-AC-9	WELLFLEET CLO 2015-1 LTD Sr Secd Nt Class A-1	1	12,221,015	12,206,124
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		60,000,000	60,122,460	09/08/2014	09/08/2044	Interest Rate Swap			949496-AC-7	MAGNETITE XVII LTD Def Mezz Nt CI C	1	60,000,000	60,122,460
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,330,000	4,382,151	09/08/2014	09/08/2044	Interest Rate Swap			55954E-AJ-8	KKR CLO 14 Ltd Sr Secd Nt CI A-1A Limerock CLO II Ltd Sr Secd Note Class B-1	1	4,330,000	4,382,151
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	13,024,609	09/08/2014	09/08/2044	Interest Rate Swap			48250W-AA-3	Carlyle Global Mkt CLO 2013-4 Sr Secd Note CI A-1 144A	1	13,000,000	13,024,609
57629*CF6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	30,000,000	18,525,048	22,506,547	09/17/2014	09/17/2044	Interest Rate Swap		4,506,691	532621-AC-3	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C	1	18,525,048	17,999,856
57629*CF6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,000,000	18,006,516	09/17/2014	09/17/2044	Interest Rate Swap			14310K-AC-5	ALM XIV Ltd Sr Secd Note CI A-2 LCM XVIII Ltd Partnership Series 18A Class D	3	18,000,000	18,006,516
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	10,850,000	14,601,011	10/06/2014	10/06/2034	Interest Rate Swap		3,740,465	03763Y-AQ-9	Babson CLO Ltd 2015-1 Sr Secd Note Class B	1	10,850,000	10,860,546
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,300,000	9,302,520	10/06/2014	10/06/2034	Interest Rate Swap			55818R-AJ-5	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C	1	9,300,000	9,302,520
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,372,277	9,308,897	10/06/2014	10/06/2034	Interest Rate Swap			05617W-AC-7	ALM XIV Ltd Sr Secd Note CI A-2 LCM XVIII Ltd Partnership Series 18A Class D	3	9,372,277	9,308,897
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,393,117	9,202,962	10/06/2014	10/06/2034	Interest Rate Swap			04941G-AE-8	Babson CLO Ltd 2015-1 Sr Secd Note Class B	1	9,393,117	9,202,962
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,116,459	4,050,940	10/06/2014	10/06/2034	Interest Rate Swap			00164K-AC-1	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C	1	4,116,459	4,050,940
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,778,376	3,714,701	10/06/2014	10/06/2034	Interest Rate Swap			50188G-AN-3	ALM XIV Ltd Sr Secd Note CI A-2 LCM XVIII Ltd Partnership Series 18A Class D	3	3,778,376	3,714,701
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,710,982	3,635,985	10/06/2014	10/06/2034	Interest Rate Swap			05616Z-AG-5	Babson CLO Ltd 2015-1 Sr Secd Note Class B	1	3,710,982	3,635,985
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,000,150	10/06/2014	10/06/2034	Interest Rate Swap			33883B-AB-4	Flatiron CLO 2013-1 Ltd Sr Secd Note Class A-2	1	15,000,000	15,000,150

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	17,235,085	27,597,964	10/06/2014	10/06/2044	Interest Rate Swap		10,731,240	05617Y-AC-3	Babson CLO 2013-11A Sr Secd Note Class A-2	1	17,235,085	16,866,724
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,848,084	20,497,891	10/06/2014	10/06/2044	Interest Rate Swap			05618M-AE-4	Babson CLO Ltd 2014-111 Sr Secd Term Note Cl B-1 144A	1	20,848,084	20,497,891
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,866,685	10,147,706	10/06/2014	10/06/2044	Interest Rate Swap			46186G-AG-8	Inwood Park CDO Ltd Series 2006-1A Class B	1	9,866,685	10,147,706
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,337,366	9,266,012	10/06/2014	10/06/2044	Interest Rate Swap			09627R-AE-4	Bluemountain CLO 2014-3 Ltd Sr Sec Def Note Class B 144A	1	9,337,366	9,266,012
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,300,000	5,300,032	10/06/2014	10/06/2044	Interest Rate Swap			67572N-AW-6	Octagon Inv Partners XII Ltd Sr Secd Nt Class B-1-R	1	5,300,000	5,300,032
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,548,358	13,225,013	10/06/2014	10/06/2044	Interest Rate Swap			05618D-AC-8	Babson CLO Ltd 2014-1 Class A-2 144A	1	13,548,358	13,225,013
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,109,225	11,873,587	10/06/2014	10/06/2044	Interest Rate Swap			00248P-AC-0	A Voce CLO Ltd Sr Secd Note Class A-2	1	12,109,225	11,873,587
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,260,819	9,006,272	10/06/2014	10/06/2044	Interest Rate Swap			93677P-AB-7	Wasatch CLO Ltd Note Class A-1B ... Symphony CLO XIV Ltd Sr Note Class B-1	1	9,260,819	9,006,272
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,500,000	11,504,313	10/06/2014	10/06/2044	Interest Rate Swap			87159Q-AJ-7	Madison Pk Fdg XVII Ltd Def Note Class C	1	11,500,000	11,504,313
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,010,380	4,000,884	10/06/2014	10/06/2044	Interest Rate Swap			55818Y-AG-6	RRPF Engine Leasing Ltd Senior Secured Note Series D	1	4,010,380	4,000,884
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	175,000,000	60,000,000	75,954,382	10/10/2014	10/10/2044	Interest Rate Swap		16,014,502	67332#-AD-5	NT CL A-2-R	1	60,000,000	59,939,880
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		26,785,682	27,421,500	10/10/2014	10/10/2044	Interest Rate Swap			62939A-AA-5	NTC Capital I Unsecured Bond Cullen/Frost Capital Trust II	2	26,785,682	27,421,500
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,702,458	22,027,689	10/10/2014	10/10/2044	Interest Rate Swap			230000-AB-7	Subordinated Note Bluemountain CLO 2015-1 Ltd SR SEC0	2	20,702,458	22,027,689
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,500,000	20,500,000	10/10/2014	10/10/2044	Interest Rate Swap			09627X-AW-1	NT CL A-2-R Pinnacle Park CLO Ltd SR SEC0 NT CL B-R	1	20,500,000	20,500,000
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,700,000	18,700,000	10/10/2014	10/10/2044	Interest Rate Swap			72349B-AK-0	TACONIC PK CLO LTD SR SEC0 NT CL A-2	1	18,700,000	18,700,000
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,100,000	16,099,807	10/10/2014	10/10/2044	Interest Rate Swap			873549-AC-3	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class D	2	16,100,000	16,099,807
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,842,277	1,853,198	10/10/2014	10/10/2044	Interest Rate Swap			09627L-AJ-6	Bluemountain CLO 2014-4 Ltd Sr Secd Deferrable Nt Class D	2	1,842,277	1,853,198
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,501,297	4,491,255	10/10/2014	10/10/2044	Interest Rate Swap			09627V-AG-0	Babson CLO 2013-11A Sr Secd Def Note Class C	1	4,501,297	4,491,255
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,155,926	3,101,641	10/10/2014	10/10/2044	Interest Rate Swap			05617Y-AG-4	Bluemountain CLO 2013-3 Ltd Sr Secd Deferrable Nt Class D	2	3,155,926	3,101,641
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,747,786	6,713,210	10/10/2014	10/10/2044	Interest Rate Swap			09625J-AF-1	Sugar Creek CLO Ltd Sr Secd Note Class B	1	6,747,786	6,713,210
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	13,399,981	24,432,614	11/04/2014	11/04/2044	Interest Rate Swap		11,427,323	86482B-AC-5	COA Summit CLO Ltd Sr Secd Note Class A-2	1	13,399,981	13,005,291
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,287,754	13,001,261	11/04/2014	11/04/2044	Interest Rate Swap			12627U-AB-7	Palmer Square CLO 2014-1 Ltd Sr Secd Note Class A-2	1	13,287,754	13,001,261
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,986,902	12,765,030	11/04/2014	11/04/2044	Interest Rate Swap			69688X-AC-5	Dryden XXVIII Senior Loan Fund Sr Secd Note Class A-2L	1	12,986,902	12,765,030
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,500,000	12,393,838	11/04/2014	11/04/2044	Interest Rate Swap			26251B-AC-0	Seneca Park CLO Ltd Secd Def Nt Class C	1	12,500,000	12,393,838
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,560,463	4,570,640	11/04/2014	11/04/2044	Interest Rate Swap			817176-AE-0	Emerson Place CLO LTD Sr Note Class B	1	4,560,463	4,570,640
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,303,915	13,631,943	11/04/2014	11/04/2044	Interest Rate Swap			291086-AB-2	Carlyle Global Mkt CLO 2012-2 Sr Secd Note Class B-1-R 144A	1	13,303,915	13,631,943
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,125,000	12,125,400	11/04/2014	11/04/2044	Interest Rate Swap			143090-AU-5	HPS Loan Mgmt 9-2016 Ltd Sr Secd Note Class A-2	1	12,125,000	12,125,400
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,100,000	12,144,891	11/04/2014	11/04/2044	Interest Rate Swap			40436Q-AC-6	Oaktree CLO 2014-2 Ltd Sr Secd Note Class A-2A	1	12,100,000	12,144,891
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,544,800	6,493,445	11/04/2014	11/04/2044	Interest Rate Swap			67389B-AC-6	JFIN CLO 2012 Ltd Note Class B 144A	1	6,544,800	6,493,445
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,869,637	6,801,877	11/04/2014	11/04/2044	Interest Rate Swap			46616A-AE-6	Goldentree Loan Opp IV Ltd Sr Secured Nt Class A-1B-J	1	6,869,637	6,801,877
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,060,967	6,144,637	11/04/2014	11/04/2044	Interest Rate Swap			38136G-AD-3		1	6,060,967	6,144,637

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,494,174	3,499,349	11/04/2014	11/04/2044	Interest Rate Swap			806713-AD-5	Schiller Park CLO LTD Note Class B	1	3,494,174	3,499,349
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,948,585	5,921,952	11/04/2014	11/04/2044	Interest Rate Swap			43132W-AE-0	Hildene CLO IV Ltd Def Mezz Nt Cl B	1	5,948,585	5,921,952
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,974,292	2,960,976	11/04/2014	11/04/2044	Interest Rate Swap			46617Y-AB-9	JFIN CLO 2015 LTD Sr Secd Nt Cl B-1	1	2,974,292	2,960,976
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	14,122,029	25,356,451	11/04/2014	11/04/2044	Interest Rate Swap		11,453,407	09627D-AC-9	Bluemountain CLO 2013-4 Ltd Sr Secured Note Class B-1 144A	1	14,122,029	13,903,044
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,156,952	13,901,918	11/04/2014	11/04/2044	Interest Rate Swap			55818R-AG-1	Madison Park Funding XIV Ltd Sr Note Class B	1	14,156,952	13,901,918
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,158,335	13,911,620	11/04/2014	11/04/2044	Interest Rate Swap			14955A-AC-7	CAVALRY CLO IV LTD Sr Secd Note Class B-1	1	14,158,335	13,911,620
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,300,000	4,299,966	11/04/2014	11/04/2044	Interest Rate Swap			92558A-AA-8	VIBRANT CLO V LTD SR SECd NT CL A	1	4,300,000	4,299,966
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,830,234	13,884,321	11/04/2014	11/04/2044	Interest Rate Swap			38136B-AJ-1	Goldentree Loan Opp III Ltd Series 2007-3A Class A2	1	13,830,234	13,884,321
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,851,076	13,714,878	11/04/2014	11/04/2044	Interest Rate Swap			88390A-AF-7	THL Cr Wind River 2014-2 CLO Sr Secd Nt Class B-1	1	13,851,076	13,714,878
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,600,000	13,578,186	11/04/2014	11/04/2044	Interest Rate Swap			03764Q-AC-6	Apidos CLO XV Sr Secd Note Class A-2A	1	13,600,000	13,578,186
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,114,739	12,888,109	11/04/2014	11/04/2044	Interest Rate Swap			00191L-AC-6	Ares XXVIII CLO Ltd Class B-1 Sr Floating Rate Nt	1	13,114,739	12,888,109
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,622,220	13,307,395	11/04/2014	11/04/2044	Interest Rate Swap			64129X-AG-4	Neuberger Berman CLO XVI Ltd Sr Secured Note Class B-1	1	13,622,220	13,307,395
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,794,947	10,600,795	11/04/2014	11/04/2044	Interest Rate Swap			05873L-AC-0	Ballyrock CLO 2014-1 Ltd Sr Secd Note Class A-2	1	10,794,947	10,600,795
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	12,996,773	24,662,254	11/04/2014	11/04/2044	Interest Rate Swap		11,662,072	67105V-AE-4	CHA Credit Partners IX Ltd Sr Secd Note Class B-1 144A	1	12,996,773	13,000,182
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,880,471	14,387,480	11/04/2014	11/04/2044	Interest Rate Swap			50184V-AE-4	LCM XV LP Sr Note Class B	1	14,880,471	14,387,480
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	13,000,130	11/04/2014	11/04/2044	Interest Rate Swap			33883B-AB-4	Flatiron CLO 2013-1 Ltd Sr Secd Note Class A-2	1	13,000,000	13,000,130
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,550,000	14,559,719	11/04/2014	11/04/2044	Interest Rate Swap			09073V-AC-8	Birchwood Park CLO Ltd Sr Secd Note Class B-1	1	14,550,000	14,559,719
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,505,681	13,402,801	11/04/2014	11/04/2044	Interest Rate Swap			398080-AC-5	GREYWOLF CLO IV Ltd Sr Secured Note Class A-2 144A	1	13,505,681	13,402,801
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,261,071	14,019,586	11/04/2014	11/04/2044	Interest Rate Swap			04941R-AC-8	Atlas Sr Loan Fund VI Ltd Sr Secd Note Class B	1	14,261,071	14,019,586
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,253,207	14,019,684	11/04/2014	11/04/2044	Interest Rate Swap			09627R-AC-8	Bluemountain CLO 2014-3 Ltd Sr Secured Note Class A-2 144A	1	14,253,207	14,019,684
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,323,346	7,302,519	11/04/2014	11/04/2044	Interest Rate Swap			398080-AE-1	GREYWOLF CLO IV Ltd Sr Secd Deferrable Nt Class B	1	7,323,346	7,302,519
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,529,182	5,524,448	11/04/2014	11/04/2044	Interest Rate Swap			04941G-AA-6	Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	5,529,182	5,524,448
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,992,920	14,912,829	11/04/2014	11/04/2044	Interest Rate Swap			08180R-AC-9	Benefit St Ptrs CLO VII Ltd Sr Secd Note Class A-2	1	14,992,920	14,912,829
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	12,771,290	24,492,316	11/04/2014	11/04/2044	Interest Rate Swap		11,688,156	36319G-AA-2	GALAXY XVIII CLO LTD SR NT CL A Race Point VI CLO Ltd Sr Secd Note Class B-R	1	12,771,290	12,804,160
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,003,315	11/04/2014	11/04/2044	Interest Rate Swap			74982D-AQ-1	Class B-R	1	15,000,000	15,003,315
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,536,830	15,250,580	11/04/2014	11/04/2044	Interest Rate Swap			00900A-AB-4	AIMCO CLO Ser 2014-A Sr Secd Note Class B-1	1	15,536,830	15,250,580
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,289,435	14,999,820	11/04/2014	11/04/2044	Interest Rate Swap			854432-AB-7	Stanford Street CLO Ltd Sr Secd Note Class B	1	15,289,435	14,999,820
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,184,826	15,001,635	11/04/2014	11/04/2044	Interest Rate Swap			50183X-AE-1	LCM XI Ltd Partnership Sr Note Class B	1	15,184,826	15,001,635
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,882,320	14,599,898	11/04/2014	11/04/2044	Interest Rate Swap			92912V-AC-9	Voya CLO 2014-2 Ltd Note Class A-2	1	14,882,320	14,599,898
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,880,327	14,485,478	11/04/2014	11/04/2044	Interest Rate Swap			67104C-AB-3	CHA Credit Ptrs VIII Ltd Sr Secd Nt Cl B	1	14,880,327	14,485,478
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,070,000	12,115,214	11/04/2014	11/04/2044	Interest Rate Swap			14312L-AC-1	Carlyle Global Mkt CLO 2016-2 Sr Secd Note Class A-2A	1	12,070,000	12,115,214

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,588	3,140,325	11/04/2014	11/04/2044	Interest Rate Swap			862015-AC-8	Stoney Lane Funding I Ltd Sr Secd Note Class A-2	1	3,000,588	3,140,325
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,060,000	8,121,546	11/04/2014	11/04/2044	Interest Rate Swap			749830-AC-1	RACE POINT X CLO LTD Sr Secd Nt Cl B-1	1	8,060,000	8,121,546
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	18,416,086	29,666,906	11/04/2014	11/04/2044	Interest Rate Swap		11,766,405	405380-AG-5	Halcyon Ln Advisors Fdg 2014-1 Sr Secd Nt Cl B-1	1	18,416,086	17,900,501
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,600,000	16,442,134	11/04/2014	11/04/2044	Interest Rate Swap			05874P-AC-0	Ballyrock CLO 2013-1 Ltd Sr Secd Note Class B	1	16,600,000	16,442,134
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,891,207	16,500,495	11/04/2014	11/04/2044	Interest Rate Swap			04014W-AC-9	Ares XXIX CLO Ltd Sr Note Class A-2	1	16,891,207	16,500,495
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,292,624	30,001,020	11/04/2014	11/04/2044	Interest Rate Swap			46617E-AC-1	JFIN CLO 2014 Ltd Sr Secured Note Class B-1	1	30,292,624	30,001,020
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,231,771	14,930,745	11/04/2014	11/04/2044	Interest Rate Swap			87247C-AC-7	TICP CLO II Ltd Sr Secured Note Class A-2A	1	15,231,771	14,930,745
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,392,605	12,939,004	11/04/2014	11/04/2044	Interest Rate Swap			87159F-AB-8	Symphony CLO XII LTD Sr Note Class B-1	1	13,392,605	12,939,004
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,792,941	11,801,097	11/04/2014	11/04/2044	Interest Rate Swap			87154E-AC-4	Symphony CLO XV Ltd SR NT CL B-1 144A	1	11,792,941	11,801,097
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,975,000	13,974,916	11/04/2014	11/04/2044	Interest Rate Swap			26250C-AU-9	Dryden XXIII Senior Loan Fund Sr Secd Note Class A-2-R	1	13,975,000	13,974,916
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	25,251,655	36,929,304	11/04/2014	11/04/2044	Interest Rate Swap		11,922,904	87154E-AB-6	Symphony CLO XV Ltd SR NT CL A 144A	1	25,251,655	25,006,400
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,244,912	23,011,316	11/04/2014	11/04/2044	Interest Rate Swap			532621-AA-7	Limerock CLO II Ltd Sr Secd Note Cl A	1	23,244,912	23,011,316
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,742,980	21,224,811	11/04/2014	11/04/2044	Interest Rate Swap			405380-AC-4	Halcyon Ln Advisors Fdg 2014-1 Sr Secd Nt Cl A-1	1	21,742,980	21,224,811
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,220,537	25,000,300	11/04/2014	11/04/2044	Interest Rate Swap			053633-AB-9	Avery Point III CLO Ltd Sr Secd Nt Cl A	1	25,220,537	25,000,300
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,137,556	15,207,752	11/04/2014	11/04/2044	Interest Rate Swap			38137M-AC-1	Goldentree Loan Opp XII Ltd Sr Secd Note Class A-2	1	15,137,556	15,207,752
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,504,642	4,332,375	11/04/2014	11/04/2044	Interest Rate Swap			82842B-AC-6	Silvermore CLO Ltd Sr Secd Nt Class A-2	1	4,504,642	4,332,375
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,868,388	6,848,801	11/04/2014	11/04/2044	Interest Rate Swap			15135D-AJ-6	Cent CDO 14 Ltd Sr Term Note Class A-2A	1	6,868,388	6,848,801
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,059,610	11/04/2014	11/04/2044	Interest Rate Swap			46619T-AA-0	JFIN CLO 2016 LTD Sr Secd Nt Cl A-1	1	15,000,000	15,059,610
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,664,227	3,641,310	11/04/2014	11/04/2044	Interest Rate Swap			14311D-AJ-5	Carlyle Global Mkt CLO 2015-1 Mezz Secd Def Note Cl D	2	3,664,227	3,641,310
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	37,281,410	48,672,998	11/04/2014	11/04/2044	Interest Rate Swap		11,896,821	43132V-AA-0	Hildene CLO III Ltd Sr Secd Nt Cl A	1	37,281,410	36,776,177
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,575,725	16,553,906	11/04/2014	11/04/2044	Interest Rate Swap			03329K-AA-1	ANCHORAGE CAPITAL CLO 8 LTD Sr Secd Note Cl A1	1	16,575,725	16,553,906
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,040,000	16,093,525	11/04/2014	11/04/2044	Interest Rate Swap			282523-AB-5	GUGGENHEIM 1828 CLO LLC SR SECN NT CL A-1-S	1	16,040,000	16,093,525
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,320,196	21,906,066	11/04/2014	11/04/2044	Interest Rate Swap			50181G-AC-4	LCM XVI LP Sr Note Cl A	1	22,320,196	21,906,066
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,456,971	9,357,312	11/04/2014	11/04/2044	Interest Rate Swap			50184N-AD-4	LCM XV LP Sr Secd Nt Class C	1	9,456,971	9,357,312
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,774,851	4,726,559	11/04/2014	11/04/2044	Interest Rate Swap			26249B-AE-1	Dryden 30 Senior Loan Fund Mezz Secd Def Nt Class C	1	4,774,851	4,726,559
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,804,616	4,703,257	11/04/2014	11/04/2044	Interest Rate Swap			398079-AE-3	Greywolf CLO II Ltd. Sr Secd Def Nt Cl B	1	4,804,616	4,703,257
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,546,758	4,576,720	11/04/2014	11/04/2044	Interest Rate Swap			14310V-AE-7	Carlyle Global Mkt CLO 2014-2 Mezzanine Secd Deferrable Cl C	1	4,546,758	4,576,720
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		861,708	865,717	11/04/2014	11/04/2044	Interest Rate Swap			363206-AA-1	Gale Force 3 CLO Ltd 1st Priority Sr Sec Class A-1	1	861,708	865,717
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,540,470	4,545,080	11/04/2014	11/04/2044	Interest Rate Swap			92914R-AG-7	Voya CLO 2014-4 Ltd Deferrable Note Class C 144A	2	4,540,470	4,545,080
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,010,205	11/04/2014	11/04/2044	Interest Rate Swap			949496-AC-7	WELLFLEET CLO 2015-1 LTD Sr Secd Nt Class A-1	1	5,000,000	5,010,205
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	65,000,000	76,956,723	11/04/2014	11/04/2044	Interest Rate Swap		11,948,988	41165G-AA-7	Harbourview CLO VII Ltd Sr Secd Nt Cl A-1	1	65,000,000	65,007,735

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**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,579,361	4,600,883	11/04/2014	11/04/2044	Interest Rate Swap			09627L-AG-2	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class C	1	4,579,361	4,600,883
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,629,052	22,311,039	11/04/2014	11/04/2044	Interest Rate Swap			92914R-AA-0	Yoya CLO 2014-4 Ltd Note Class A-1 144A	1	22,629,052	22,311,039
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,152,518	22,051,080	11/04/2014	11/04/2044	Interest Rate Swap			67706T-AA-0	CHA Loan Funding 2014-1 LLC Sr Secd Nt Cl A-1	1	22,152,518	22,051,080
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,260,320	22,818,908	11/04/2014	11/04/2044	Interest Rate Swap			92912V-AC-9	Yoya CLO 2014-2 Ltd Note Class A-2	1	23,260,320	22,818,908
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	150,000,000	16,868,336	19,505,518	12/16/2014	12/16/2044	Interest Rate Swap	3,990,585		979JXH-11-5	AUTOSTRADA WIELKOPOLSKA SA	3	16,868,336	15,514,933
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		34,653,108	32,469,745	12/16/2014	12/16/2044	Interest Rate Swap			U8270Y-ZZ-4	SILVER STATE SOLAR SOUTH Kingsland V Ltd Sr Secd Nt Cl A-2B	2	34,653,108	32,469,745
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		11,295,561	10,806,923	12/16/2014	12/16/2044	Interest Rate Swap			49636R-AL-3	Dryden 30 Senior Loan Fund Sr Secd Note Class B	1	11,295,561	10,806,923
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		11,536,556	11,128,758	12/16/2014	12/16/2044	Interest Rate Swap			26249B-AC-5	Ballyrock CLO 2013-1 Ltd Sr Secd Def Note Class C	1	11,536,556	11,128,758
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		11,505,757	11,174,968	12/16/2014	12/16/2044	Interest Rate Swap			05874P-AE-6	Yoya CLO 2014-2 Ltd Def Note Class B	1	11,505,757	11,174,968
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		9,616,781	9,401,598	12/16/2014	12/16/2044	Interest Rate Swap			92912V-AG-0	Octagon Inv Partners XVI Ltd Sr Secd Nt Class B1	1	9,616,781	9,401,598
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		10,950,000	10,806,325	12/16/2014	12/16/2044	Interest Rate Swap			67590B-AC-4	Babson CLO Ltd 2012-1 Sr Secd Note Class A-2	1	10,950,000	10,806,325
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		11,131,445	11,009,218	12/16/2014	12/16/2044	Interest Rate Swap			05617L-AB-3	JFIN CLO 2014-1I Ltd Sr Secured Note Class A-2 144A	1	11,131,445	11,009,218
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		11,273,386	11,097,386	12/16/2014	12/16/2044	Interest Rate Swap			46617N-AC-1	JFIN CLO 2012 Ltd Note Class A2B 144A	1	11,273,386	11,097,386
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		10,946,248	10,804,838	12/16/2014	12/16/2044	Interest Rate Swap			46616A-AJ-5	LCM XVI LP Sr Note Cl B	1	10,946,248	10,804,838
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		10,784,930	10,578,500	12/16/2014	12/16/2044	Interest Rate Swap			50181G-AE-0	Eaton Vance CLO 2014-1 Ltd Sr Secd Def Note Cl C	1	10,784,930	10,578,500
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		6,063,139	5,953,273	12/16/2014	12/16/2044	Interest Rate Swap			27830D-AE-0	Carlyle Global Mkt CLO 2013-3 Sr Secd Def Note Class B 144A	1	6,063,139	5,953,273
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		7,462,777	7,202,966	12/16/2014	12/16/2044	Interest Rate Swap			14310G-AG-5	Octagon Inv Partners XII Ltd Secd Def Note Cl C-R	1	7,462,777	7,202,966
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		3,850,000	3,851,363	12/16/2014	12/16/2044	Interest Rate Swap			67572N-BA-3	Inwood Park CDO Ltd Def Note Class C	1	3,850,000	3,851,363
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		3,711,835	3,649,226	12/16/2014	12/16/2044	Interest Rate Swap			46186G-AJ-2	ALM XIX Ltd SR SECN NT CL A-2 Babson CLO Ltd 2013-I Sr Secd Note Class C	1	3,711,835	3,649,226
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		8,100,000	8,132,351	12/16/2014	12/16/2044	Interest Rate Swap			001626-AC-4	JFIN CLO 2014 Ltd Mezz Secd Deferrable Nt Cl C	1	8,100,000	8,132,351
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	9,000,000	12,677,268	12/16/2014	12/16/2044	Interest Rate Swap	3,676,656		05617W-AE-3	Flatiron CLO 2011-1 Ltd. Def Mezz Class C-1	1	9,000,000	9,000,612
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,209,486	7,100,738	12/16/2014	12/16/2044	Interest Rate Swap			46617E-AE-7	Carlyle Global Mkt CLO 2013-2 Sr Secd Note Class B 144A	1	7,209,486	7,100,738
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,055,272	7,015,652	12/16/2014	12/16/2044	Interest Rate Swap			33882W-AE-3	Dryden 31 Senior Loan Fund Mezz Secd Def Note Class D	2	7,055,272	7,015,652
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,999,972	12/16/2014	12/16/2044	Interest Rate Swap			14310D-AE-7	Cent CDO 15 Ltd Def Note Class C	2	7,000,000	6,999,972
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,625,360	2,579,882	12/16/2014	12/16/2044	Interest Rate Swap			26249E-AG-0	JFIN CLO 2007 Ltd Deferrable Mezz Note Class D	1	2,625,360	2,579,882
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,437,238	12/16/2014	12/16/2044	Interest Rate Swap			15132V-AG-5	Cent CDO 12 Ltd Def Mezz Note Class D	1	2,500,000	2,437,238
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,917,106	2,135,281	12/16/2014	12/16/2044	Interest Rate Swap			46615P-AG-9	VIBRANT CLO IV LTD SR SECN NT CL B	1	1,917,106	2,135,281
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,785,531	2,005,240	12/16/2014	12/16/2044	Interest Rate Swap			15135A-AD-5	RACE POINT X CLO LTD Sr Secd Nt Class A	1	1,785,531	2,005,240
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,256,532	6,311,463	12/16/2014	12/16/2044	Interest Rate Swap			92557W-AE-3	Wellfleet CLO 2016-1 Ltd Sr Secd Nt Class A	1	6,256,532	6,311,463
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		41,400,000	41,520,971	12/16/2014	12/16/2044	Interest Rate Swap			74983D-AA-5	Wellfleet CLO 2016-1 Ltd Sr Secd Nt Class A	1	41,400,000	41,520,971
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,645,101	17,806,640	12/16/2014	12/16/2044	Interest Rate Swap			94949R-AC-1		1	17,645,101	17,806,640

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,359,032	17,376,819	12/16/2014	12/16/2044	Interest Rate Swap			858102-AD-8	STEELE CREEK CLO 2016-1 LTD Sr Secd Note Class A	1	17,359,032	17,376,819
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,903,359	14,732,862	12/16/2014	12/16/2044	Interest Rate Swap			38137L-AA-7	Goldentree Loan Opp VIII Ltd Sr Secd Nt Class A	1	14,903,359	14,732,862
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,910,087	7,859,852	12/16/2014	12/16/2044	Interest Rate Swap			26250U-AC-9	Dryden XXVI Senior Loan Fund Sr Secd Note Class A	1	7,910,087	7,859,852
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,750,000	13,847,171	12/16/2014	12/16/2044	Interest Rate Swap			02014P-AC-8	ALM XVII LTD SR SECN NT CL A-2 144A	1	13,750,000	13,847,171
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	42,114,223	41,552,094	12/16/2014	12/16/2044	Interest Rate Swap		6,807,939	979JXQ-11-5	CONNECT PLUS M25 LTD	1	42,114,223	34,744,155
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		33,663,020	31,542,038	12/16/2014	12/16/2044	Interest Rate Swap			U8270Y-ZZ-4	SILVER STATE SOLAR SOUTH	2	33,663,020	31,542,038
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,000,000	14,000,854	12/16/2014	12/16/2044	Interest Rate Swap			15136G-AQ-2	Cent CLO 16 LP Note Class 2-R TICP CLO III Ltd Sr Secured Note	1	14,000,000	14,000,854
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		35,000,997	34,529,143	12/16/2014	12/16/2044	Interest Rate Swap			87247U-AC-7	Class A 144A Oaktree EIF II Ser A2 Ltd Note	1	35,000,997	34,529,143
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,762,891	19,576,899	12/16/2014	12/16/2044	Interest Rate Swap			67400L-AC-2	Class B LOM XIII LTD PARTNERSHIP SR SECN NT	1	19,762,891	19,576,899
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,749,975	12/16/2014	12/16/2044	Interest Rate Swap			50184K-AU-2	CL B-R Madison Park Funding XV Ltd Sr Secd Note Cl A-2	1	12,750,000	12,749,975
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,670,881	11,593,755	12/16/2014	12/16/2044	Interest Rate Swap			55818V-AC-1	Atrium XI Sr Secd Note Class B	1	11,670,881	11,593,755
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,814,015	21,553,039	12/16/2014	12/16/2044	Interest Rate Swap			04964W-AC-9	Atrium XI Sr Secd Note Class A	1	21,814,015	21,553,039
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,514,830	20,221,901	12/16/2014	12/16/2044	Interest Rate Swap			04964W-AA-3	Atrium XI Sr Secd Note Class A-1 THL Credit Wind Riv 2014-3 CLO Sr	1	20,514,830	20,221,901
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,438,282	12,322,526	12/16/2014	12/16/2044	Interest Rate Swap			88432D-AC-8	Secd Nt Cl B Babson CLO Ltd 2014-II Sr Secd Note	1	12,438,282	12,322,526
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,587,285	12,350,124	12/16/2014	12/16/2044	Interest Rate Swap			05618L-AB-2	Class B-1 144A Silver Spring CLO Ltd Sr Secd Note	1	12,587,285	12,350,124
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,271,704	11,936,318	12/16/2014	12/16/2044	Interest Rate Swap			82817R-AB-7	Class B-1 TCI-FLATIRON CLO 2016-1 LTD SR SECN	1	12,271,704	11,936,318
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,007,933	13,051,792	12/16/2014	12/16/2044	Interest Rate Swap			87230A-AA-4	NT CL A Bluemountain CLO 2015-2 Ltd Sr Secd Note Class A-1	1	13,007,933	13,051,792
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,218,071	8,269,685	12/16/2014	12/16/2044	Interest Rate Swap			09628B-AA-6	MassMutual Asset Finance LLC Senior Secured Revolver A	1	8,218,071	8,269,685
57629*CU3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	328,073,426	331,994,866	12/16/2014	12/16/2044	Interest Rate Swap		5,813,832	57542Z-AQ-7	Nomad CLO Ltd Series 2013-1A Class A1	1	328,073,426	326,181,034
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	200,000,000	24,476,800	28,473,352	12/16/2014	12/16/2044	Interest Rate Swap		4,232,494	65531W-AA-8	Bluemountain CLO 2013-3 Ltd Sr Secured Note Class A 144A	1	24,476,800	24,240,858
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,639,018	23,306,291	12/16/2014	12/16/2044	Interest Rate Swap			09625J-AA-2	Secured Note Class A 144A Carlyle Global Mkt CLO 2014-4 Sr	1	23,639,018	23,306,291
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,225,000	23,240,352	12/16/2014	12/16/2044	Interest Rate Swap			14310U-AA-7	Secd Note Class A-1 144A Atlas Senior Loan Fund III Ltd Series 2013-1A Class A	1	23,225,000	23,240,352
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,008,327	10,998,900	12/16/2014	12/16/2044	Interest Rate Swap			04941G-AA-6	Series 2013-1A Class A Blue Hill CLO Ltd Sr Note Class A	1	11,008,327	10,998,900
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,530,678	17,255,261	12/16/2014	12/16/2044	Interest Rate Swap			095560-AC-2	Goldentree Loan Opp IV Ltd Sr Secd Deferrable Nt Class C	1	17,530,678	17,255,261
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,151,643	5,309,779	12/16/2014	12/16/2044	Interest Rate Swap			38136G-AG-6	MADISON PARK FUNDING XX LTD Secd Def Nt Cl C-1	1	5,151,643	5,309,779
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,829,010	5,910,167	12/16/2014	12/16/2044	Interest Rate Swap			55819T-AG-6	Limerock CLO II Ltd Sr Secd Note Cl A	1	5,829,010	5,910,167
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,108,474	22,876,250	12/16/2014	12/16/2044	Interest Rate Swap			532621-AA-7	SOUND POINT CLO XI LTD Sr Secd Note Class A	1	23,108,474	22,876,250
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,253,353	22,298,503	12/16/2014	12/16/2044	Interest Rate Swap			83609J-AA-7	Benefit St Ptrs CLO VII Ltd Sr Secd Note Class A-1A	1	22,253,353	22,298,503
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,630,394	21,685,296	12/16/2014	12/16/2044	Interest Rate Swap			08180R-AA-3	Madison Pk Fdg XVII Ltd Note Class A-2	1	21,630,394	21,685,296
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,645,640	21,660,412	12/16/2014	12/16/2044	Interest Rate Swap			55818Y-AC-5	Avery Point III CLO Ltd Sr Secd Nt Cl A	1	21,645,640	21,660,412
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,211,716	24,000,288	12/16/2014	12/16/2044	Interest Rate Swap			053633-AB-9		1	24,211,716	24,000,288

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		56,000,000	55,676,981	12/16/2014	12/16/2044	Interest Rate Swap			57542Z-A0-7	MassMutual Asset Finance LLC Senior Secured Revolver A	1	56,000,000	55,676,981
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	18,060,699	9,387,294	02/05/2015	02/05/2045	Interest Rate Swap		(8,491,302)	00164M-AC-7	ALM XII Ltd Sr Secd Note Class A-1 144A	1	18,060,699	17,878,596
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,447,896	28,228,661	02/05/2015	02/05/2045	Interest Rate Swap			67105V-AC-8	QHA Credit Partners IX Ltd OAKC 2013 - 9A A1	1	28,447,896	28,228,661
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,740,000	12,739,975	02/05/2015	02/05/2045	Interest Rate Swap			55818X-AY-9	Madison Park Funding XVI Ltd SR SECD NT CL A-2-R	1	12,740,000	12,739,975
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,100,000	6,100,000	02/05/2015	02/05/2045	Interest Rate Swap			72349B-AL-8	Pinnacle Park CLO Ltd SECD DEF NT CL C-R	1	6,100,000	6,100,000
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,529,163	22,299,866	02/05/2015	02/05/2045	Interest Rate Swap			93921B-AC-7	Washington Mill CLO Ltd Senior Note Class A-1 144A	1	22,529,163	22,299,866
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,348,128	22,055,777	02/05/2015	02/05/2045	Interest Rate Swap			36319Q-AA-0	Galaxy XIX CLO Ltd Senior Note Class A-1 144A	1	22,348,128	22,055,777
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,784,889	5,629,185	02/05/2015	02/05/2045	Interest Rate Swap			10302V-AC-9	Bowman Park CLO Ltd Sr Secd Note Class B-1	1	5,784,889	5,629,185
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,460,752	5,400,302	02/05/2015	02/05/2045	Interest Rate Swap			33882U-AC-1	Flatiron CLO 2014-1 Ltd Sr Secd Def Nt Cl B	1	5,460,752	5,400,302
57629*CV5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,618,867	15,294,281	02/05/2015	02/05/2045	Interest Rate Swap			82842B-AA-0	Silvermore CLO Ltd Sr Secd Nt Class A-1	1	15,618,867	15,294,281
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	15,288,860	6,587,173	02/05/2015	02/05/2045	Interest Rate Swap		(8,517,553)	14311D-AC-0	Carlyle Global Mkt CLO 2015-1 Sr Secd Note Class A	1	15,288,860	15,104,726
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,506,779	12,478,331	02/05/2015	02/05/2045	Interest Rate Swap			55818P-AE-0	Madison Park Funding XII Ltd Def Note Class C	1	12,506,779	12,478,331
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,250,000	02/05/2015	02/05/2045	Interest Rate Swap			00163K-AS-7	ALM VII R LTD Sr Secd Note Cl A-2-R	1	4,250,000	4,250,000
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,600,000	9,600,000	02/05/2015	02/05/2045	Interest Rate Swap			00191Y-AM-6	ARES XXXIII CLO LTD SR NT CL A-2-R	1	9,600,000	9,600,000
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,850,000	9,852,236	02/05/2015	02/05/2045	Interest Rate Swap			36319Q-AC-6	Galaxy XIX CLO Ltd Senior Note Class A-2 144A	1	9,850,000	9,852,236
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,580,000	9,592,119	02/05/2015	02/05/2045	Interest Rate Swap			14311D-AE-6	Carlyle Global Mkt CLO 2015-1 Sr Secd Note Class B	1	9,580,000	9,592,119
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,088,858	8,896,014	02/05/2015	02/05/2045	Interest Rate Swap			15135A-AC-7	Cent CDO 12 Ltd Def Mezz Note Class C	1	9,088,858	8,896,014
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,549,161	7,908,088	02/05/2015	02/05/2045	Interest Rate Swap			44983W-AD-0	ING Invnt Mgmt CLO V Ltd Def Note Class B	1	7,549,161	7,908,088
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,247,250	9,151,418	02/05/2015	02/05/2045	Interest Rate Swap			09626Q-AE-7	Bluemountain CLO 2014-2 Ltd Sr Sec Def Note Class C 144A	1	9,247,250	9,151,418
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,279,557	9,124,252	02/05/2015	02/05/2045	Interest Rate Swap			33882W-AC-7	Flatiron CLO 2011-1 Ltd. Sr Note Class B	1	9,279,557	9,124,252
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,000,000	9,000,243	02/05/2015	02/05/2045	Interest Rate Swap			67104C-AC-1	QHA Credit Ptrs VIII Ltd Mezz Secd Def Nt Cl C	1	9,000,000	9,000,243
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,983,953	3,906,348	02/05/2015	02/05/2045	Interest Rate Swap			55817X-AC-8	Madison Park Funding V Ltd Note Class A-2	1	3,983,953	3,906,348
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,180,779	02/05/2015	02/05/2045	Interest Rate Swap			47032B-AK-7	James Campbell Company LLC Senior Note Series 2014-E	2	13,500,000	13,180,779
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,433,961	6,899,165	02/05/2015	02/05/2045	Interest Rate Swap			806713-AE-3	Schiller Park CLO LTD Series 2007-1A Class C	1	6,433,961	6,899,165
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,418,625	6,410,859	02/05/2015	02/05/2045	Interest Rate Swap			55817X-AB-0	Madison Park Funding V Ltd Note Class A-1B	1	6,418,625	6,410,859
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	9,000,000	298,754	02/05/2015	02/05/2045	Interest Rate Swap		(8,701,309)	053635-AG-3	Avery Point II CLO Ltd Sr Secd Def Nt Cl C	1	9,000,000	9,000,063
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,980	02/05/2015	02/05/2045	Interest Rate Swap			14310M-AQ-0	Carlyle Global Mkt CLO 2014-1 SR SECD NT CL B-R	1	10,000,000	9,999,980
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,226,272	9,001,701	02/05/2015	02/05/2045	Interest Rate Swap			05363X-AG-2	Avery Point V CLO Ltd Sr Secd Def Nt Cl C	1	9,226,272	9,001,701
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,970,115	8,825,397	02/05/2015	02/05/2045	Interest Rate Swap			50181G-AG-5	LCM XVI LP Sr Nt Cl C Def Mezz	1	8,970,115	8,825,397
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,800,000	12,796,992	02/05/2015	02/05/2045	Interest Rate Swap			67102Q-AK-4	QHA CR PARTNERS VII LTD SR SECD NT CL B-1-R	1	12,800,000	12,796,992
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,608,932	8,550,966	02/05/2015	02/05/2045	Interest Rate Swap			00900A-AC-2	Aimco CLO Ser 2014-A Sr Secd Note Class C-1	1	8,608,932	8,550,966

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,951,207	21,459,645	02/05/2015	02/05/2045	Interest Rate Swap			49638W-AB-2	Kingsland VI Ltd Sr Secd Nt Cl A-1	1	21,951,207	21,459,645
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,511,557	8,301,170	02/05/2015	02/05/2045	Interest Rate Swap			24823B-AE-0	Denali Capital CLO X Ltd Sr Secd Def Note Class A-3L	1	8,511,557	8,301,170
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,471,245	24,453,814	02/05/2015	02/05/2045	Interest Rate Swap			14310V-AJ-6	Carlyle Global Mkt CLO 2014-2 Sr Secd Note Class B-2 144A	1	24,471,245	24,453,814
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,887,570	8,050,063	02/05/2015	02/05/2045	Interest Rate Swap			43164Q-AB-0	Hillmark Funding Ltd Sr Secd Nt Cl A-2	1	7,887,570	8,050,063
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,422,185	8,202,075	02/05/2015	02/05/2045	Interest Rate Swap			09626Y-AE-0	Bluemountain CLO 2013-2 Ltd Sr Sec Def Note Class C 144A	1	8,422,185	8,202,075
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,796,649	1,749,983	02/05/2015	02/05/2045	Interest Rate Swap			15015P-AB-1	Cedar Creek CLO Ltd Sr Secd Note Class B	1	1,796,649	1,749,983
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,670,087	1,669,630	02/05/2015	02/05/2045	Interest Rate Swap			09627X-AG-6	Bluemountain CLO 2015-1 Ltd Sr Secd Deferrable Nt Class C	2	1,670,087	1,669,630
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,037,993	2,000,098	02/05/2015	02/05/2045	Interest Rate Swap			14954W-AA-4	Cavalry CLO III Ltd Sr Secd Note Class A	1	2,037,993	2,000,098
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	6,850,000	(2,008,856)	02/05/2015	02/05/2045	Interest Rate Swap		(8,858,815)	55951P-AR-8	Magnetite VII Ltd Sr Secd Nt Cl A-2-R	1	6,850,000	6,849,959
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,385,435	8,068,888	02/05/2015	02/05/2045	Interest Rate Swap			67108F-AC-0	Ozlm Funding IV Ltd Sr Secd Nt Cl A-2	1	8,385,435	8,068,888
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,169,566	8,012,680	02/05/2015	02/05/2045	Interest Rate Swap			38137L-AE-9	Goldentree Loan Opp VIII Ltd Mezz Deferrable Nt Cl C 144A	1	8,169,566	8,012,680
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,114,443	8,000,688	02/05/2015	02/05/2045	Interest Rate Swap			39808F-AE-8	Greywolf CLO III Ltd Sr Secd Def Nt Cl B	1	8,114,443	8,000,688
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,162,199	8,000,368	02/05/2015	02/05/2045	Interest Rate Swap			05618L-AD-8	Babson CLO Ltd 2014-II Sr Secd Note Class C 144A	1	8,162,199	8,000,368
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		26,279,331	25,975,066	02/05/2015	02/05/2045	Interest Rate Swap			67590B-AA-8	Octagon Inv Partners XVI Ltd Series 2013-1A Class A	1	26,279,331	25,975,066
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,850,000	7,773,949	02/05/2015	02/05/2045	Interest Rate Swap			15136R-AE-5	Cent CLO 18 Ltd Note Class B-1	1	7,850,000	7,773,949
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		46,150,000	47,073,000	02/05/2015	02/05/2045	Interest Rate Swap			589433-G8-4	Meredit Corp. Senior Note Series Q	3	46,150,000	47,073,000
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,489,493	7,496,318	02/05/2015	02/05/2045	Interest Rate Swap			36248M-AB-3	GT Loan Financing I Ltd. Sr Secd Note Class B	1	7,489,493	7,496,318
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,991,640	2,572,955	02/05/2015	02/05/2045	Interest Rate Swap			278287-AC-1	Eaton Vance CDO VIII Ltd Second Priority Def Nt Cl B	1	1,991,640	2,572,955
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,852,174	2,002,388	02/05/2015	02/05/2045	Interest Rate Swap			38136A-AA-2	Goldentree Loan Opp III Ltd Secd Deferrable Nt Cl D-1 144A	1	1,852,174	2,002,388
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,015,671	12,120,690	02/05/2015	02/05/2045	Interest Rate Swap			24820R-AA-6	Statoil ASA Senior Unsecured Note	1	10,015,671	12,120,690
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	625,000,000	406,114,300	433,447,524	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index	8,818,378	9,439,514	912828-PX-2	US TREASURY N/B Note Resolution Funding Corp Principal Strip	1	397,295,922	424,008,010
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2		228,863,287	259,271,928	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			76116F-AG-2	US TREASURY N/B Note Resolution Funding Corp Principal Strip	1	228,863,287	259,271,928
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	590,000,000	310,132,542	330,942,301	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index	8,388,804	8,910,901	912828-PX-2	US TREASURY N/B Note Resolution Funding Corp Principal Strip	1	301,743,738	322,031,400
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2		292,165,898	330,985,440	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			76116F-AG-2	WABCO Holdings Inc Senior Note Series A	1	292,165,898	330,985,440
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1	500,000,000	26,843,360	27,041,048	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index	7,043,360	7,551,611	92927K-AA-3	ClearBridge Energy MLP Fund Senior Secured Note Ser A	2	19,800,000	19,489,437
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		36,353,712	36,237,671	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			184692-B8-9	Kayne Anderson Mdstm Egm Fd Senior Note Series D	1	36,353,712	36,237,671
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		36,450,000	35,741,157	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			48661E-B*-8	ETSA Utilities Finance Pty Ltd Gtd Senior Note Series B	1	36,450,000	35,741,157
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		36,000,000	36,296,280	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			Q3629F-AG-8	Tortoise MLP Fund Inc. Senior Note Series D	1	36,000,000	36,296,280
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		47,000,000	49,074,815	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			89148B-B*-1	Yorkshire Water Svcs Bradford Gtd Senior Sec Note Cl A Ser 2	1	47,000,000	49,074,815
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		27,300,000	28,176,385	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			G98508-AB-9	Smith & Nephew plc Senior Note Series C	1	27,300,000	28,176,385
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		28,250,000	28,159,205	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			G8228*-AG-7		1	28,250,000	28,159,205

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**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		28,000,000	28,747,068	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			091940-AF-4	Transper New Zealand Ltd Gtd Senior Note	1	28,000,000	28,747,068
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		22,600,000	23,914,574	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			55068#-AK-5	Luxottica US Holdings Corp. Gtd Senior Note Series I	1	22,600,000	23,914,574
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		25,000,000	28,296,375	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			085209-AA-1	Bermuda Government Senior Note	1	25,000,000	28,296,375
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		21,600,000	22,586,407	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			G2044#-AY-1	Compass Group plc Senior Note Series K	1	21,600,000	22,586,407
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		11,127,411	13,466,087	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			24820R-AA-6	Statoil ASA Senior Unsecured Note	1	11,127,411	13,466,087
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		20,000,000	21,347,560	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			73106B-AA-1	Polaris Industries Inc. Senior Note Series 2011 Tr B	1	20,000,000	21,347,560
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		17,550,000	18,229,922	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			12656*-AC-6	CSLB Holdings Inc. Gtd Senior Note Series C	1	17,550,000	18,229,922
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		15,800,000	16,377,917	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			12656*-AB-8	CSLB Holdings Inc. Gtd Senior Note Series B	1	15,800,000	16,377,917
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		9,464,993	9,595,733	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			184690-AA-7	ClearBridge Energy MLP Total R Senior Secured Note Series B	1	9,464,993	9,595,733
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		12,015,385	12,005,749	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			48660P-D0-0	Kayne Anderson Energy Rtn Fd Senior Note Series K	1	12,015,385	12,005,749
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		15,900,000	16,419,803	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			749860-AM-3	RREEF America REIT II Inc. Senior Note Series C	1	15,900,000	16,419,803
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		5,355,000	5,514,627	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			48661E-AA-5	Kayne Anderson Mdstm Egm Fd Senior Note Series C	1	5,355,000	5,514,627
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		12,700,000	12,821,958	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			486606-K0-4	Kayne Anderson MLP Invest Co. Senior Note Series JJ	1	12,700,000	12,821,958
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		11,500,000	12,000,009	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			21867*-AA-6	Core Labs Interest Hldgs Inc. Senior Note Ser 2011A	2	11,500,000	12,000,009
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		11,400,000	11,914,801	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			21867*-AB-4	Core Labs Interest Hldgs Inc. Senior Note Ser 2011B	2	11,400,000	11,914,801
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		10,750,000	10,829,776	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			003009-AA-6	Aberdeen Asia-Pacific Income Senior Secured Note Series B	1	10,750,000	10,829,776
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		12,000,000	12,508,548	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			94184B-C0-0	Waters Corporation Gtd Senior Note Series E	2	12,000,000	12,508,548
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	1		9,000,000	9,301,581	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			56081#-AL-4	Major League Baseball Trust Senior Note Series 6	1	9,000,000	9,301,581
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	450,000,000	330,693,893	352,819,189	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index	6,470,247	6,796,450	91282B-PX-2	US TREASURY N/B Note	1	324,223,646	346,022,739
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2		71,418,331	80,907,552	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			76116F-AG-2	Resolution Funding Corp Principal Strip	1	71,418,331	80,907,552
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2		86,965,477	109,075,580	09/20/2016	12/20/2021	5 Yr Credit Default Swap Index			912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	86,965,477	109,075,580
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	100,000,000	129,694,197	162,253,282	12/20/2016	12/20/2021	5 Yr Credit Default Swap Index	1,534,546	1,510,322	912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	128,159,651	160,742,960
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	50,000,000	64,834,247	81,126,641	12/20/2016	12/20/2021	5 Yr Credit Default Swap Index	754,422	755,161	912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	64,079,825	80,371,480
Filed with the SVO and awaiting RSAT	Credit Default Indices (CDIG527/CDX.NA.IG.27)	2	50,000,000	64,818,721	81,126,641	12/20/2016	12/20/2021	5 Yr Credit Default Swap Index	738,896	755,161	912810-QK-7	US Treasury 3.875% DUE 8/15/2040	1	64,079,825	80,371,480
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	19,853,011	20,028,325	12/05/2016	12/05/2046	Interest Rate Swap		40,325	MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	19,853,011	19,988,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		35,002,967	36,600,000	12/05/2016	12/05/2046	Interest Rate Swap			28140V-AA-3	Education Funding Capital Tr Series 2004-1 Class A5	1	35,002,967	36,600,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,410,000	28,366,121	12/05/2016	12/05/2046	Interest Rate Swap			78449F-AC-5	SMB Private Ed Ln Tr 2016-A NT CL A-2B	1	28,410,000	28,366,121
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,420,000	23,047,919	12/05/2016	12/05/2046	Interest Rate Swap			63940F-AC-1	NAVIENT STUDENT LOAN TRUST Series 16-2 Class A3	1	22,420,000	23,047,919
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,737,551	15,691,133	12/05/2016	12/05/2046	Interest Rate Swap			26827X-AA-1	EMC GROUP STUDENT LOAN TRUST Series 2016-1A Class A	1	15,737,551	15,691,133
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,101,352	5,101,352	12/05/2016	12/05/2046	Interest Rate Swap			033290-AN-7	Anchorage Capital CLO 2012-1 Sr Secd Nt Cl A-2A-R	1	5,100,000	5,101,352

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**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,919,156	11,061,158	12/05/2016	12/05/2046	Interest Rate Swap		67,758	MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	10,919,156	10,993,400
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,059,750	14,345,896	12/05/2016	12/05/2046	Interest Rate Swap			78442G-PQ-3	SLM STUDENT LOAN TRUST Series 2005-5 Class A4	1	14,059,750	14,345,896
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,441,538	12,413,565	12/05/2016	12/05/2046	Interest Rate Swap			49327H-AG-0	Keycorp Student Loan Trust Series 2006-A Class 2A4	1	11,441,538	12,413,565
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,539,826	11,784,681	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BR-1	NELNET STUDENT LOAN TRUST Series 2005-1 Class A5	1	11,539,826	11,784,681
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,853,800	11,918,669	12/05/2016	12/05/2046	Interest Rate Swap			78448Q-AD-0	SMB Private Ed Ln Tr 2015-B Ln Bckd Nt CI A-3	1	11,853,800	11,918,669
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,429,080	10,853,254	12/05/2016	12/05/2046	Interest Rate Swap			78442G-RX-6	SLM STUDENT LOAN TRUST Series 2006-2 Class A6	1	10,429,080	10,853,254
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,129,538	11,200,000	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EX-0	SLM STUDENT LOAN TRUST Series 2002-7 Class A11	1	11,129,538	11,200,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,549,157	10,618,048	12/05/2016	12/05/2046	Interest Rate Swap			10620N-AX-6	Brazos Higher Ed Auth Inc Ser 2006-2 Student LN REV NT	1	10,549,157	10,618,048
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,646,401	9,859,017	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BX-8	NELNET STUDENT LOAN TRUST Series 2005-2 Class A5	1	9,646,401	9,859,017
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,596,383	9,669,490	12/05/2016	12/05/2046	Interest Rate Swap			83715R-AF-9	South Carolina Student Loan Co Series 14-1 Class A2	1	9,596,383	9,669,490
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,918,557	8,055,241	12/05/2016	12/05/2046	Interest Rate Swap			00432C-AV-3	Access Group Inc Series 2003-A Class A3	1	7,918,557	8,055,241
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,551,440	7,582,210	12/05/2016	12/05/2046	Interest Rate Swap			640315-AF-4	NELNET STUDENT LOAN TRUST Series 2006	1	7,551,440	7,582,210
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	3,970,602	3,705,984	12/05/2016	12/05/2046	Interest Rate Swap		(291,616)	MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	3,970,602	3,997,600
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		65,300,000	65,300,555	12/05/2016	12/05/2046	Interest Rate Swap			63940L-AC-8	Navient Student Ln Tru 2016-6 Student Ln Bckd Nt CI A-3	1	65,300,000	65,300,555
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,635,246	22,626,176	12/05/2016	12/05/2046	Interest Rate Swap			61205P-AL-3	Montana Higher Ed Student Asst 2012-A3 Student Sr Ln Rev Bd	1	22,635,246	22,626,176
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,044,977	18,125,452	12/05/2016	12/05/2046	Interest Rate Swap			784419-AF-0	S L C Student Loan Trust Series 2006-A Class B	1	17,044,977	18,125,452
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,104,247	1,145,000	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EW-2	SLM STUDENT LOAN TRUST Series 2002-7 Class A10	1	1,104,247	1,145,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,764,662	1,684,375	12/05/2016	12/05/2046	Interest Rate Swap			429827-AK-4	Higher Education Funding Series 2004-1 Class A10	1	1,764,662	1,684,375
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,651,987	1,809,630	12/05/2016	12/05/2046	Interest Rate Swap			784419-AE-3	S L C Student Loan Trust Series 2006-A Class A5	1	1,651,987	1,809,630
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,140,182	1,143,503	12/05/2016	12/05/2046	Interest Rate Swap			429827-AP-3	Higher Education Funding Series 2004-1 Class A14	1	1,140,182	1,143,503
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,048,534	1,047,281	12/05/2016	12/05/2046	Interest Rate Swap			429827-AJ-4	Higher Education Funding Series 2004-1 Class A2	1	1,048,534	1,047,281
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,830,560	1,860,096	12/05/2016	12/05/2046	Interest Rate Swap			83715A-AJ-8	South Carolina Student Loan Co Sr Unsecured	1	1,830,560	1,860,096
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,596,320	1,659,881	12/05/2016	12/05/2046	Interest Rate Swap			784427-AF-3	S L C Student Loan Trust Series 2006-1 Class A6	1	1,596,320	1,659,881
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,642,099	1,599,028	12/05/2016	12/05/2046	Interest Rate Swap			64033Q-AC-3	NELNET STUDENT LOAN TRUST Series 2015-2A Class B	1	1,642,099	1,599,028
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,830,281	1,925,452	12/05/2016	12/05/2046	Interest Rate Swap			462590-JT-8	Iowa Student Loan Liquidity Co Series 2012-1 Class B	1	1,830,281	1,925,452
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,561,655	1,560,000	12/05/2016	12/05/2046	Interest Rate Swap			709163-GJ-2	Pennsylvania Higher Education Series 2006-2 Class B	1	1,561,655	1,560,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,316,649	1,346,528	12/05/2016	12/05/2046	Interest Rate Swap			17284L-AB-0	CIT Education Loan Trust Series 2007-1 Class B	1	1,316,649	1,346,528
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,325,542	1,230,625	12/05/2016	12/05/2046	Interest Rate Swap			78448C-AH-2	SLM Student Ln Tr 2013-6 Student Ln Bckd Nt PI B CI B	1	1,325,542	1,230,625
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	14,889,758	14,702,128	12/05/2016	12/05/2046	Interest Rate Swap		(288,872)	MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	14,889,758	14,991,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,179,026	6,539,685	12/05/2016	12/05/2046	Interest Rate Swap			78448R-AD-8	SMB Private Ed Ln Tr 2015-C Ln Bckd Nt CI A-3	1	6,179,026	6,539,685

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,378,515	5,664,635	12/05/2016	12/05/2046	Interest Rate Swap			78448P-AD-2	SMB Private Ed Ln Tr 2015-A Private Ed Ln Bckd Nt A-3	1	5,378,515	5,664,635
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,634,399	4,499,545	12/05/2016	12/05/2046	Interest Rate Swap			69847R-AB-8	Panhandle-Plains Stud Fin Corp Series 2001-1 Class A2	1	4,634,399	4,499,545
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,791,160	4,684,145	12/05/2016	12/05/2046	Interest Rate Swap			19458L-BH-2	Collegiate Funding Services Ed Series 2005-B Class A4	1	4,791,160	4,684,145
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,678,462	4,753,185	12/05/2016	12/05/2046	Interest Rate Swap			78446D-AC-3	SLM STUDENT LOAN TRUST Series 2011-A Class A3	1	4,678,462	4,753,185
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,728,889	3,711,206	12/05/2016	12/05/2046	Interest Rate Swap			63938E-AD-6	Navient Student Loan Trust Series 2014-1 Class A4	1	3,728,889	3,711,206
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,948,562	1,948,423	12/05/2016	12/05/2046	Interest Rate Swap			00432C-CF-6	Access Group Inc. Series 2005-1 Class A3	1	1,948,562	1,948,423
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,944,485	15,736,970	12/05/2016	12/05/2046	Interest Rate Swap			840555-DA-1	SOUTH TEXAS HIGHER EDUCATION Series 2012-1 Class A3	1	15,944,485	15,736,970
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,696,117	13,781,117	12/05/2016	12/05/2046	Interest Rate Swap			00432C-CI-9	Access Group Inc. Series 2005-B Class A3	1	13,696,117	13,781,117
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,716,728	10,873,426	12/05/2016	12/05/2046	Interest Rate Swap			28148W-AC-7	Educational Funding South Inc Series 2011-1 Class B	1	9,716,728	10,873,426
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,997,926	9,114,698	12/05/2016	12/05/2046	Interest Rate Swap			78444C-AE-3	SLM STUDENT LOAN TRUST Series 07-6 Class A5	1	8,997,926	9,114,698
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,349,666	8,579,145	12/05/2016	12/05/2046	Interest Rate Swap			78443F-AF-4	SLM STUDENT LOAN TRUST Series 2007-5 Class A6	1	8,349,666	8,579,145
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,020,501	8,001,096	12/05/2016	12/05/2046	Interest Rate Swap			00400V-AB-3	Academic Ln Fdg Tr 2012-1 Student Ln Asset Bkd No CI A-2	1	8,020,501	8,001,096
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		945,874	1,004,760	12/05/2016	12/05/2046	Interest Rate Swap			462592-AD-8	Iowa Student Ln Liquidity Corp Series 2005-1 Class B	1	945,874	1,004,760
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		976,537	1,030,124	12/05/2016	12/05/2046	Interest Rate Swap			78442G-QA-7	SLM STUDENT LOAN TRUST Series 2005-6 Class B	1	976,537	1,030,124
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,607,998	1,412,950	12/05/2016	12/05/2046	Interest Rate Swap			38021F-AB-7	Goal Capital Funding Trust Series 2015-1 Class B	1	1,607,998	1,412,950
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,629,271	1,615,713	12/05/2016	12/05/2046	Interest Rate Swap			28138J-AB-0	EDUCATIONAL SERVICES OF AMERI Series 15-2 Class B	1	1,629,271	1,615,713
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,533,129	1,456,182	12/05/2016	12/05/2046	Interest Rate Swap			78442G-GM-2	SLM STUDENT LOAN TRUST SLMA 2003-4 B	1	1,533,129	1,456,182
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,321,794	1,243,800	12/05/2016	12/05/2046	Interest Rate Swap			28090A-AB-5	Educational Services of Americ 2014-4 Series B	1	1,321,794	1,243,800
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,301,674	1,308,155	12/05/2016	12/05/2046	Interest Rate Swap			83401L-AA-2	Social Professional Loan Progr Series 2015-A Class A1	1	1,301,674	1,308,155
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,815,000	1,811,250	12/05/2016	12/05/2046	Interest Rate Swap			00191D-AN-0	ARES XXV CLO Ltd Mezz Def Nt CI C-R	1	1,815,000	1,811,250
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,528,994	1,539,070	12/05/2016	12/05/2046	Interest Rate Swap			14310V-AE-7	Carlyle Global Mkt CLO 2014-2 Mezzanine Secd Deferrable CI C	1	1,528,994	1,539,070
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,129,569	1,113,734	12/05/2016	12/05/2046	Interest Rate Swap			39808F-AE-8	Greywolf CLO III Ltd Sr Secd Def Nt CI B	1	1,129,569	1,113,734
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,034,339	1,000,694	12/05/2016	12/05/2046	Interest Rate Swap			49638W-AE-6	Kingsland VI Ltd Secd Def Mezz Nt CI C	1	1,034,339	1,000,694
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,004,482	1,001,872	12/05/2016	12/05/2046	Interest Rate Swap			74981H-AE-0	Race Point IX CLO Ltd Sr Secd Def Nt CI B	1	1,004,482	1,001,872
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	7,451,005	5,452,614	12/06/2016	12/06/2046	Interest Rate Swap		(1,661,886)	281397-AP-4	Education Loan Asset-Backed TR Series 2003-2 Class 2A1	1	7,451,005	7,114,500
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,926,505	9,994,000	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	9,926,505	9,994,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,713,507	6,703,832	12/06/2016	12/06/2046	Interest Rate Swap			66705R-AA-7	NORTHSTAR STUDENT LN TR III Priv Ed Ln Sr Ser 2016-A	1	6,713,507	6,703,832
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,573,376	6,277,500	12/06/2016	12/06/2046	Interest Rate Swap			281397-AB-5	Education Loan Asset-Backed TR Series 2003-1 Class A2	1	6,573,376	6,277,500
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,997,178	4,987,500	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-CK-5	HELNET STUDENT LOAN TRUST Series 2005-4 Class A4R1	1	4,997,178	4,987,500
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,640,739	5,050,000	12/06/2016	12/06/2046	Interest Rate Swap			78443G-AG-0	S L M Student Loan Trust Series 2006-7 Class A6B	1	4,640,739	5,050,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,934,156	4,521,265	12/06/2016	12/06/2046	Interest Rate Swap			106238-LJ-5	Brazos Tex Higher Ed Auth Inc Series 2005 Class B1	1	3,934,156	4,521,265

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,287,953	5,372,430	12/06/2016	12/06/2046	Interest Rate Swap			281080-AB-0	Edline Student Loan Funding Tr Series 2012-1 Class B	1	5,287,953	5,372,430
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,315,407	4,116,250	12/06/2016	12/06/2046	Interest Rate Swap			281397-AQ-2	Education Loan Asset-Backed TR Series 2003-2 Class 2A2	1	4,315,407	4,116,250
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,056,313	4,091,945	12/06/2016	12/06/2046	Interest Rate Swap			38021E-AA-2	Goal Capital Funding Trust Series 2010-1 Class A	1	4,056,313	4,091,945
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,563,348	3,759,000	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-OM-1	NELNET STUDENT LOAN TRUST Series 2005-4 Class A4R2	1	3,563,348	3,759,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,665,342	3,621,992	12/06/2016	12/06/2046	Interest Rate Swap			658262-GD-6	North Carolina St Ed Ass Auth Series 2011-2 Class A3	1	3,665,342	3,621,992
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,855,467	1,820,800	12/06/2016	12/06/2046	Interest Rate Swap			78442G-KW-5	SLM STUDENT LOAN TRUST Series 2004-1 Class A6	1	1,855,467	1,820,800
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,064,644	15,042,218	12/06/2016	12/06/2046	Interest Rate Swap			83149E-AG-2	SLM Student Ln Tr 2006-5 Note Class B	1	15,064,644	15,042,218
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,518,561	9,376,713	12/06/2016	12/06/2046	Interest Rate Swap			784419-AG-8	S L C Student Loan Trust Series 2006-A Class C	1	9,518,561	9,376,713
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,368,858	9,541,092	12/06/2016	12/06/2046	Interest Rate Swap			23341K-AA-3	DRB PRIME STUDENT LOAN TRUST Ser 2015-D A1	1	9,368,858	9,541,092
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,543,348	8,091,606	12/06/2016	12/06/2046	Interest Rate Swap			64031C-AB-8	Nelnet Student Loan Trust Series 2012-2A Class B	1	8,543,348	8,091,606
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,996,596	7,445,533	12/06/2016	12/06/2046	Interest Rate Swap			83149F-AD-6	SLM STUDENT LOAN TRUST Series 2006-6 Class B	1	6,996,596	7,445,533
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,702,624	6,871,568	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PS-9	SLM STUDENT LOAN TRUST Series 2005-5 Class B	1	6,702,624	6,871,568
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,899,977	12/06/2016	12/06/2046	Interest Rate Swap			87244A-BC-3	WIND RIVER CLO LTD Sr Secd Nt Cl B	1	3,900,000	3,899,977
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	15,183,882	14,201,475	12/06/2016	12/06/2046	Interest Rate Swap		(1,359,525)	28140V-AD-5	Education Funding Capital Tr Series 2004-1 Class A4	1	15,183,882	15,561,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,919,156	10,993,400	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	10,919,156	10,993,400
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,172,194	8,280,413	12/06/2016	12/06/2046	Interest Rate Swap			83715R-AG-7	South Carolina Student Loan Co Series 2014-1 Class B	1	9,172,194	8,280,413
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,192,694	7,442,675	12/06/2016	12/06/2046	Interest Rate Swap			784420-AE-1	SLC STUDENT LOAN TRUST Series 2005-1 Class B	1	7,192,694	7,442,675
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,548,294	6,517,050	12/06/2016	12/06/2046	Interest Rate Swap			78442G-QT-6	SLM STUDENT LOAN TRUST Series 2005-8 Class B	1	6,548,294	6,517,050
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,266,084	6,390,965	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PD-2	SLM STUDENT LOAN TRUST Series 2005-3 Class B	1	6,266,084	6,390,965
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,208,737	7,064,615	12/06/2016	12/06/2046	Interest Rate Swap			493268-AU-0	Keycorp Student Loan Trust Series 1999-B Class CTFS	1	6,208,737	7,064,615
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,489,983	6,083,050	12/06/2016	12/06/2046	Interest Rate Swap			78446C-AB-7	S L M Student Loan Trust Series 2013-2 Class B	1	6,489,983	6,083,050
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,817,870	6,087,932	12/06/2016	12/06/2046	Interest Rate Swap			63938E-AE-4	NaviEnt Student Loan Trust Series 2014-1 Class B	1	5,817,870	6,087,932
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,192,712	5,966,260	12/06/2016	12/06/2046	Interest Rate Swap			64031A-AJ-5	Nelnet Student Loan Trust Series 2006-3 Class B	1	6,192,712	5,966,260
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,029,197	5,495,787	12/06/2016	12/06/2046	Interest Rate Swap			63939L-AC-1	NAVIENT STUDENT LOAN TRUST Series 2015-3 Class B	1	6,029,197	5,495,787
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,013,389	6,348,614	12/06/2016	12/06/2046	Interest Rate Swap			78447M-AD-0	S L M Student Loan Trust Series 2013-1 Class B	1	6,013,389	6,348,614
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,252,126	4,988,243	12/06/2016	12/06/2046	Interest Rate Swap			64033J-AB-1	Nelnet Student Loan Trust Series 2014-1A Class B	1	5,252,126	4,988,243
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,556,552	4,368,608	12/06/2016	12/06/2046	Interest Rate Swap			194266-AE-2	College Loan Corporation Trust Series 2005-2 Class B	1	4,556,552	4,368,608
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,406,876	4,163,919	12/06/2016	12/06/2046	Interest Rate Swap			64033N-AB-2	Nelnet Student Loan Trust Series 2014-5A Class B	1	4,406,876	4,163,919
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,526,752	3,461,500	12/06/2016	12/06/2046	Interest Rate Swap			194262-CF-6	College Loan Corporation Trust Series 2004-1 Class B	1	3,526,752	3,461,500
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,220,187	3,256,058	12/06/2016	12/06/2046	Interest Rate Swap			78442G-LJ-3	SLM STUDENT LOAN TRUST Series 2004-3 Class B	1	3,220,187	3,256,058
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,363,466	3,222,070	12/06/2016	12/06/2046	Interest Rate Swap			64032A-AB-1	Nelnet Student Loan Trust Series 2012-1A Class B	1	3,363,466	3,222,070

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,925,332	3,008,048	12/06/2016	12/06/2046	Interest Rate Swap			64032F-AH-7	Nelnet Student Loan Trust Series 2007-2A Class A4A2	1	2,925,332	3,008,048
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,107,320	2,941,168	12/06/2016	12/06/2046	Interest Rate Swap			64033L-AD-2	Nelnet Student Loan Trust Series 2014-2A Class B	1	3,107,320	2,941,168
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,011,602	2,870,120	12/06/2016	12/06/2046	Interest Rate Swap			64033K-AB-8	Nelnet Student Loan Trust Series 2014-3A Class B	1	3,011,602	2,870,120
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,499,813	12/06/2016	12/06/2046	Interest Rate Swap			94949L-AE-0	Wellfleet CLO 2016-2 Ltd Mezz Secd Def Nt Cl B	1	2,500,000	2,499,813
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	8,900,000	7,142,597	12/06/2016	12/06/2046	Interest Rate Swap		(1,757,332)	04964H-AN-8	Atrium VIII Series 8A Class BR	1	8,900,000	8,899,929
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,970,602	3,997,600	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	Grupo Aeromexico, S.A.B. De C.V. Floating Rate Senior Secured Term Loan	1	3,970,602	3,997,600
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,876,065	8,877,207	12/06/2016	12/06/2046	Interest Rate Swap			87246M-AB-8	TICP CLO VI 2016-2 Ltd Sr Secd Nt Cl B	1	8,876,065	8,877,207
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,850,000	12/06/2016	12/06/2046	Interest Rate Swap			04941T-AE-0	Atlas Sr Ln Fd VII Ltd Sr Secd Nt Cl B	1	8,850,000	8,850,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,849,938	12/06/2016	12/06/2046	Interest Rate Swap			14309Y-AQ-7	Carlyle Global Mkt CLO 2012-4 Series 2012-4A Class BR	1	8,850,000	8,849,938
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,850,000	12/06/2016	12/06/2046	Interest Rate Swap			03764X-AJ-6	Apidos CLO XVII Sr Secd Nt Cl A-2R	1	8,850,000	8,850,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,499,858	12/06/2016	12/06/2046	Interest Rate Swap			06759Y-AC-9	Barings CLO Ltd 2016-III Secd Def Mezz Nt Cl C	1	7,500,000	7,499,858
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,370,000	7,398,264	12/06/2016	12/06/2046	Interest Rate Swap			81789G-AC-5	SEVEN STICKS CLO LTD Sr Secd Note Class A-2	1	7,370,000	7,398,264
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,180,000	7,179,957	12/06/2016	12/06/2046	Interest Rate Swap			00191D-AM-2	ARES XXV CLO Ltd Sr Nt Class B-R	1	7,180,000	7,179,957
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,756,607	2,723,628	12/06/2016	12/06/2046	Interest Rate Swap			04964H-AC-9	Atrium XI Sr Secd Note Class B	1	2,756,607	2,723,628
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,063,008	2,059,986	12/06/2016	12/06/2046	Interest Rate Swap			36319G-AB-0	GALAXY XVIII CLO LTD Sr Nt Cl B	1	2,063,008	2,059,986
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,999,808	2,001,076	12/06/2016	12/06/2046	Interest Rate Swap			00163E-AM-4	ALM VI Ltd Series 2012-6A Class A2R	1	1,999,808	2,001,076
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,510,084	2,504,565	12/06/2016	12/06/2046	Interest Rate Swap			04015G-AC-3	Ares XXXIV CLO Ltd Sr Note Cl B	1	2,510,084	2,504,565
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,049,395	2,764,434	12/06/2016	12/06/2046	Interest Rate Swap			78448A-AD-5	S L M Student Loan Trust Series 2013-4 Class B	1	3,049,395	2,764,434
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,999,664	2,000,218	12/06/2016	12/06/2046	Interest Rate Swap			56841B-BD-2	MARINE PARK CLO LTD Sr Secd Deferrable Nt Cl B-R	1	1,999,664	2,000,218
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,697,315	2,786,717	12/06/2016	12/06/2046	Interest Rate Swap			38021B-AG-5	Goal Capital Funding Trust Series 2006-1 Class B	1	2,697,315	2,786,717
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,081,675	2,277,660	12/06/2016	12/06/2046	Interest Rate Swap			00432C-DE-8	Access Group Inc. Series 2006-1 Class B	1	2,081,675	2,277,660
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,429,851	2,445,885	12/06/2016	12/06/2046	Interest Rate Swap			78442G-KN-5	SLM STUDENT LOAN TRUST Series 2003-14 Class A6	1	2,429,851	2,445,885
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,105,629	2,067,463	12/06/2016	12/06/2046	Interest Rate Swap			49326B-BW-5	Keycorp Student Loan Trust Series 2004-A Class 1B	1	2,105,629	2,067,463
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,977,948	1,955,000	12/06/2016	12/06/2046	Interest Rate Swap			429827-AR-9	Higher Education Funding Series 2004-1 Class B1	1	1,977,948	1,955,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,989,981	1,955,000	12/06/2016	12/06/2046	Interest Rate Swap			429827-AS-7	Higher Education Funding Series 2004-1 Class B2	1	1,989,981	1,955,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,896,432	1,864,563	12/06/2016	12/06/2046	Interest Rate Swap			64033T-AB-9	NELNET STUDENT LOAN TRUST Series 2015-3A Class B	1	1,896,432	1,864,563
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,909,519	1,721,280	12/06/2016	12/06/2046	Interest Rate Swap			19458L-BD-1	Collegiate Funding Services Ed Series 2005-A Class B	1	1,909,519	1,721,280
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,836,876	1,738,755	12/06/2016	12/06/2046	Interest Rate Swap			00435T-AB-7	ACCESS GROUP INC Series 2015-1 Class B	1	1,836,876	1,738,755
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,244,796	3,138,293	12/06/2016	12/06/2046	Interest Rate Swap			78442G-RY-4	SLM STUDENT LOAN TRUST Series 2006-2 Class B	1	3,244,796	3,138,293
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,106,779	2,906,080	12/06/2016	12/06/2046	Interest Rate Swap			19426T-AM-2	College Loan Corporation Trust Series 2007-1 Class B2	1	3,106,779	2,906,080
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,604,923	2,741,840	12/06/2016	12/06/2046	Interest Rate Swap			92978J-AH-6	Wachovia Student Loan Trust Series 2006-1 Class B	1	2,604,923	2,741,840

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,641,029	2,690,644	12/06/2016	12/06/2046	Interest Rate Swap			83715R-AH-5	South Carolina Student Loan Co Series 15-A Class A	1	2,641,029	2,690,644
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,432,909	2,179,360	12/06/2016	12/06/2046	Interest Rate Swap			28137T-AB-9	Educational Services of Americ Series 2014-2 Class B	1	2,432,909	2,179,360
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,266,154	2,101,220	12/06/2016	12/06/2046	Interest Rate Swap			78443B-AK-2	S L M Student Loan Trust Series 2006-10 Class B	1	2,266,154	2,101,220
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,254,545	2,140,736	12/06/2016	12/06/2046	Interest Rate Swap			69340Q-AB-2	Pennsylvania Higher Education Series 2015-1A Class B	1	2,254,545	2,140,736
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,109,823	2,060,924	12/06/2016	12/06/2046	Interest Rate Swap			28137H-AB-5	Educational Services of Americ Series 2015-1 Class B	1	2,109,823	2,060,924
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,221,115	2,352,000	12/06/2016	12/06/2046	Interest Rate Swap			00432C-AR-2	Access Group Inc. Series 2002-A Class A2	1	2,221,115	2,352,000
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,196,793	2,019,234	12/06/2016	12/06/2046	Interest Rate Swap			63939D-AD-7	Navient Student Loan Trust Series 2014-8 Class B	1	2,196,793	2,019,234
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	3,981,753	2,253,512	12/06/2016	12/06/2046	Interest Rate Swap		(1,751,845)	09627L-AJ-6	Bluemountain CLO 2014-1 Ltd Sr Secd Deferrable Nt Class D	2	3,981,753	4,005,357
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,500,000	18,141,358	12/05/2016	12/05/2046	Interest Rate Swap			09194@-AC-1	Transpower New Zealand Ltd Senior Note Series C	1	17,500,000	18,141,358
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,943,238	3,923,720	12/06/2016	12/06/2046	Interest Rate Swap			87165V-AE-9	Symphony CLO XVII Ltd Def Mezz Nt Cl D	2	3,943,238	3,923,720
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,746,839	2,739,748	12/06/2016	12/06/2046	Interest Rate Swap			55953M-AG-7	Magnetite XV Ltd Def Mezz Nt Cl D	2	2,746,839	2,739,748
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,713,900	2,668,164	12/06/2016	12/06/2046	Interest Rate Swap			50188G-AN-3	LCM XVIII Ltd Partnership Series 18A Class D	3	2,713,900	2,668,164
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,087,117	2,057,811	12/06/2016	12/06/2046	Interest Rate Swap			33882B-AE-9	Flatiron CLO 2007-1 Ltd. Def Mezz Term Nt Cl D	1	1,087,117	2,057,811
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,945,969	1,936,500	12/06/2016	12/06/2046	Interest Rate Swap			55818Y-AJ-0	Madison Pk Fdg XVII Ltd Def Nt Cl D	1	1,945,969	1,936,500
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,009,174	2,007,060	12/06/2016	12/06/2046	Interest Rate Swap			87230A-AD-8	TCI-FLATIRON CLO 2016-1 LTD Sr Secd Def Nt Cl D	3	2,009,174	2,007,060
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,999,622	2,983,956	12/06/2016	12/06/2046	Interest Rate Swap			67706H-AJ-7	OHA Loan Funding 2013-1 Ltd Mezz Secd Def Nt Cl D	2	2,999,622	2,983,956
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,200,000	8,199,902	12/06/2016	12/06/2046	Interest Rate Swap			04964H-AQ-1	Atrium VIII Def Nt Cl C-R	1	8,200,000	8,199,902
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,516,250	7,516,047	12/06/2016	12/06/2046	Interest Rate Swap			06759Y-AE-5	Barings CLO Ltd 2016-III Sr Secd Def Nt Cl B	1	7,516,250	7,516,047
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,989,725	7,003,472	12/06/2016	12/06/2046	Interest Rate Swap			26251B-AD-8	Dryden XXVIII Senior Loan Fund Series 13-28A Class A3L	1	6,989,725	7,003,472
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,739,841	6,739,933	12/06/2016	12/06/2046	Interest Rate Swap			87244A-BE-9	WIND RIVER CLO LTD Secd Def Nt Cl C-R	1	6,739,841	6,739,933
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,699,926	12/06/2016	12/06/2046	Interest Rate Swap			14309Y-AY-0	Carlyle Global Mkt CLO 2012-4 Sr Secd Nt Cl C-1-R	1	6,700,000	6,699,926
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,585,000	6,618,327	12/06/2016	12/06/2046	Interest Rate Swap			88433A-AE-9	THL CR WIND RIV 2016-1 CLO LTD SR SECd NT CL C	1	6,585,000	6,618,327
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,505	12/06/2016	12/06/2046	Interest Rate Swap			00164B-AU-1	ALM VII R 2 Ltd Series ALM 2013-7R2A Class BR	1	5,000,000	4,999,505
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,710	12/06/2016	12/06/2046	Interest Rate Swap			03328W-AE-8	Anchorage Cap CLO 9 Ltd Mezz Secd Def Nt Cl C	1	5,000,000	4,999,710
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,905	12/06/2016	12/06/2046	Interest Rate Swap			09627V-AW-5	Bluemountain CLO 2014-4 Ltd Sr Secd Nt Cl C R	1	5,000,000	4,999,905
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,719,657	4,714,850	12/06/2016	12/06/2046	Interest Rate Swap			55820N-AE-1	Madison Park Fdg XXIV Ltd Secd Def Nt Cl C	1	4,719,657	4,714,850
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,565,496	4,600,446	12/06/2016	12/06/2046	Interest Rate Swap			88432C-AE-6	THL Cr Wind River 2014-1 CLO Secd Def Nt Cl C	1	4,565,496	4,600,446
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,510,712	4,537,885	12/06/2016	12/06/2046	Interest Rate Swap			26244Y-AE-6	Dryden 42 Sr Ln Fd Sr Secd Def Nt Cl C	1	4,510,712	4,537,885
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,499,969	12/06/2016	12/06/2046	Interest Rate Swap			67091H-AP-6	OHA Loan Fdg 2012-1 Ltd Mezz Secd Def Nt Cl C-R	1	4,500,000	4,499,969
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,425,449	4,426,104	12/06/2016	12/06/2046	Interest Rate Swap			88432G-AE-7	THL Cr Wind River 2015-2 CLO Sr Secd Note Cl C	1	4,425,449	4,426,104
Filed with the SVO and awaiting RSAT	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,375,000	4,374,807	12/06/2016	12/06/2046	Interest Rate Swap			48251B-AE-0	KKR CLO 16 Ltd Sr Secd Def Nt Cl B-1	1	4,375,000	4,374,807

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ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 1**

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Filed with the SVO and awaiting RSAT ..	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds .....	1 .....		4,200,000	4,199,971	12/06/2016 .....	12/06/2046 .....	Interest Rate Swap .....				03763Y-AS-5 ..	Apidos CLO XI Def Nt CI C-R .....	1 .....	4,200,000	4,199,971
Filed with the SVO and awaiting RSAT ..	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds .....	1 .....		4,000,000	4,000,000	12/06/2016 .....	12/06/2046 .....	Interest Rate Swap .....				03765L-AL-6 ..	Apidos CLO XX Mezz Def Nt CI B-R ..	1 .....	4,000,000	4,000,000
Filed with the SVO and awaiting RSAT ..	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds .....	1 .....		4,000,000	3,999,916	12/06/2016 .....	12/06/2046 .....	Interest Rate Swap .....				09626R-AS-4 ..	Bluemountain CLO 2012-2 Ltd Sr Secd Def Nt CI C-R .....	1 .....	4,000,000	3,999,916
Filed with the SVO and awaiting RSAT ..	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds .....	1 .....		2,937,148	2,917,372	12/06/2016 .....	12/06/2046 .....	Interest Rate Swap .....				00900A-AC-2 ..	Aimco CLO Ser 2014-A Sr Secd Note Class C-1 .....	1 .....	2,937,148	2,917,372
Filed with the SVO and awaiting RSAT ..	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds .....	1 .....		2,786,168	2,729,765	12/06/2016 .....	12/06/2046 .....	Interest Rate Swap .....				04941G-AE-8 ..	Atlas Senior Loan Fund III Ltd Sr Secd Def Note Class C .....	1 .....	2,786,168	2,729,765
<b>9999999 - Totals</b>				11,521,002,652	12,204,586,877	XXX	XXX	XXX	34,005,333	539,871,772	XXX	XXX	XXX	11,486,997,319	11,664,715,105	

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - PART C - SECTION 2**

Replication (Synthetic Asset) Transactions Open

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year To Date	
	1 Number of Positions	2 Total Replication (Synthetic Asset) Transactions Statement Value	3 Number of Positions	4 Total Replication (Synthetic Asset) Transactions Statement Value	5 Number of Positions	6 Total Replication (Synthetic Asset) Transactions Statement Value	7 Number of Positions	8 Total Replication (Synthetic Asset) Transactions Statement Value	9 Number of Positions	10 Total Replication (Synthetic Asset) Transactions Statement Value
1. Beginning Inventory .....	90	9,986,000,000	80	9,889,000,000	82	10,239,000,000	82	10,239,000,000	90	9,986,000,000
2. Add: Opened or Acquired Transactions.....	18	3,715,000,000	4	650,000,000			15	3,365,000,000	37	7,730,000,000
3. Add: Increases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX									
4. Less: Closed or Disposed of Transactions.....	28	3,812,000,000	2	300,000,000			9	2,865,000,000	39	6,977,000,000
5. Less: Positions Disposed of for Failing Effectiveness Criteria.....										
6. Less: Decreases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX									
7. Ending Inventory .....	80	9,889,000,000	82	10,239,000,000	82	10,239,000,000	88	10,739,000,000	88	10,739,000,000

ANNUAL STATEMENT FOR THE YEAR 2016 OF THE Massachusetts Mutual Life Insurance Company

**SCHEDULE DB - VERIFICATION**

Verification of Book/Adjusted Carrying Value, Fair Value and Potential Exposure of all Open Derivative Contracts

	Book/Adjusted Carrying Value Check
1. Part A, Section 1, Column 14.....	3,749,418,124
2. Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance .....	.....
3. Total (Line 1 plus Line 2) .....	3,749,418,124
4. Part D, Section 1, Column 5 .....	9,763,460,825
5. Part D, Section 1, Column 6 .....	(6,014,042,701)
6. Total (Line 3 minus Line 4 minus Line 5) .....	.....
	Fair Value Check
7. Part A, Section 1, Column 16 .....	4,255,284,662
8. Part B, Section 1, Column 13 .....	.....
9. Total (Line 7 plus Line 8) .....	4,255,284,662
10. Part D, Section 1, Column 8 .....	10,314,364,413
11. Part D, Section 1, Column 9 .....	(6,059,079,751)
12. Total (Line 9 minus Line 10 minus Line 11) .....	.....
	Potential Exposure Check
13. Part A, Section 1, Column 21 .....	5,236,534,671
14. Part B, Section 1, Column 20 .....	103,707,300
15. Part D, Section 1, Column 11 .....	5,340,241,971
16. Total (Line 13 plus Line 14 minus Line 15) .....	.....

**SCHEDULE E - VERIFICATION BETWEEN YEARS**

(Cash Equivalents)

	1	2	3
	Total	Bonds	Other (a)
1. Book/adjusted carrying value, December 31 of prior year .....	2,706,693,131	2,706,693,131	
2. Cost of cash equivalents acquired .....	94,374,151,148	94,374,151,148	
3. Accrual of discount .....	22,360,462	22,360,462	
4. Unrealized valuation increase (decrease) .....			
5. Total gain (loss) on disposals .....	60,907	60,907	
6. Deduct consideration received on disposals .....	93,990,074,259	93,990,074,259	
7. Deduct amortization of premium .....	5,778	5,778	
8. Total foreign exchange change in book/adjusted carrying value .....			
9. Deduct current year's other than temporary impairment recognized .....			
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9) .....	3,113,185,611	3,113,185,611	
11. Deduct total nonadmitted amounts .....			
12. Statement value at end of current period (Line 10 minus Line 11)	3,113,185,611	3,113,185,611	

(a) Indicate the category of such assets, for example, joint ventures, transportation equipment: