

QUARTERLY STATEMENT

OF THE

Massachusetts Mutual Life Insurance Company

TO THE

Insurance Department

OF THE

STATE OF

**FOR THE QUARTER ENDED
JUNE 30, 2019**

LIFE AND ACCIDENT AND HEALTH

FRATERNAL BENEFIT SOCIETIES

2019



LIFE AND ACCIDENT AND HEALTH COMPANIES/FRATERNAL BENEFIT SOCIETIES - ASSOCIATION EDITION

QUARTERLY STATEMENT

AS OF JUNE 30, 2019

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

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

Country of Domicile United States of America

Licensed as business type: Life, Accident & Health [X] Fraternal Benefit Societies []

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

Statutory Home Office 1295 State Street Springfield, MA, US 01111

Main Administrative Office 1295 State Street Springfield, MA, US 01111 413-788-8411

Mail Address 1295 State Street Springfield, MA, US 01111

Primary Location of Books and Records 1295 State Street Springfield, MA, US 01111 413-788-8411

Internet Website Address www.massmutual.com

Statutory Statement Contact Yiji S. Starr 617-695-4651 ystarr02@massmutual.com 413-226-4086

OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Todd Garrett Picken Secretary Akintokunbo Akinbajo # Appointed Actuary Douglas Wright Taylor

OTHER

Elizabeth Ward Chicares, Chief Financial Officer and Chief Actuary Michael Robert Fanning, Head of MassMutual U.S. Melvin Timothy Corbett, Chief Investment Officer Adnan Omar Ahmed, Head of MassMutual International Geoffrey James Craddock, Chief Risk Officer Pia Denise Flanagan #, Chief of Staff to the CEO Susan Marie Cicco, Head of Human Resources & Employee Experience Michael James O'Connor, General Counsel Gareth Fielding Ross, Head of Enterprise Technology & Experience

DIRECTORS OR TRUSTEES

Roger William Crandall - Chairman Karen Hall Bechtel Mark Thomas Bertolini Kathleen Ann Corbet James Henry DeGraffenreid, Jr. Isabella Davidov Goren Jeffrey Marc Leiden Laura Jeanne Sen William Taylor Spitz Howard Todd Stitzer - Lead Director

State of Massachusetts County of Hampden SS:

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

Akintokunbo Akinbajo 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.....

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

ASSETS

	Current Statement Date			4 December 31 Prior Year Net Admitted Assets
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	
1. Bonds	101,229,491,013		101,229,491,013	97,079,123,131
2. Stocks:				
2.1 Preferred stocks	746,026,422		746,026,422	744,092,065
2.2 Common stocks	17,104,552,822		17,104,552,822	12,827,375,153
3. Mortgage loans on real estate:				
3.1 First liens	24,273,656,939		24,273,656,939	23,623,807,529
3.2 Other than first liens.....				
4. Real estate:				
4.1 Properties occupied by the company (less \$ encumbrances)	195,688,530		195,688,530	195,523,677
4.2 Properties held for the production of income (less \$906,873,791 encumbrances)	152,520,411		152,520,411	272,704,758
4.3 Properties held for sale (less \$ encumbrances)	62,100,000		62,100,000	20,078,118
5. Cash (\$112,095,660), cash equivalents (\$1,496,556,255) and short-term investments (\$893,368,663)	2,502,020,579		2,502,020,579	4,318,003,746
6. Contract loans (including \$ premium notes)	14,092,397,288	1,242,921	14,091,154,367	13,873,247,826
7. Derivatives	12,046,302,629		12,046,302,629	8,741,308,632
8. Other invested assets	8,921,087,396	30,721,841	8,890,365,555	8,599,455,873
9. Receivables for securities	1,331,712,775		1,331,712,775	941,182,855
10. Securities lending reinvested collateral assets				
11. Aggregate write-ins for invested assets				
12. Subtotals, cash and invested assets (Lines 1 to 11)	182,657,556,804	31,964,762	182,625,592,042	171,235,903,363
13. Title plants less \$ charged off (for Title insurers only)				
14. Investment income due and accrued	3,387,381,043	7,017,925	3,380,363,118	3,018,299,945
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection	133,641,519	2,652,878	130,988,641	164,205,761
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due (including \$ earned but unbilled premiums)	720,340,446		720,340,446	732,697,836
15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$)				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers	85,150,927	15,929,020	69,221,907	72,095,690
16.2 Funds held by or deposited with reinsured companies				
16.3 Other amounts receivable under reinsurance contracts	16,740,068		16,740,068	31,016,552
17. Amounts receivable relating to uninsured plans				
18.1 Current federal and foreign income tax recoverable and interest thereon	297,100,829		297,100,829	611,902,202
18.2 Net deferred tax asset	991,911,479		991,911,479	982,725,684
19. Guaranty funds receivable or on deposit	17,745,055		17,745,055	17,736,925
20. Electronic data processing equipment and software	222,007,011	207,188,983	14,818,028	15,645,327
21. Furniture and equipment, including health care delivery assets (\$)	60,966,376	60,966,376		
22. Net adjustment in assets and liabilities due to foreign exchange rates				
23. Receivables from parent, subsidiaries and affiliates	62,961,578	1,148	62,960,430	81,873,078
24. Health care (\$) and other amounts receivable				
25. Aggregate write-ins for other than invested assets	3,722,058,293	1,434,413,242	2,287,645,051	2,204,643,872
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	192,375,561,428	1,760,134,334	190,615,427,094	179,168,746,235
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts	69,295,199,065		69,295,199,065	64,478,100,585
28. Total (Lines 26 and 27)	261,670,760,493	1,760,134,334	259,910,626,159	243,646,846,820
DETAILS OF WRITE-INS				
1101.				
1102.				
1103.				
1198. Summary of remaining write-ins for Line 11 from overflow page				
1199. Totals (Lines 1101 through 1103 plus 1198)(Line 11 above)				
2501. Corporate owned life insurance	2,219,929,606		2,219,929,606	2,115,001,571
2502. Employee insurance plan advances	40,823,741	14,149	40,809,592	40,908,972
2503. Investment in trust	27,738,077		27,738,077	26,641,910
2598. Summary of remaining write-ins for Line 25 from overflow page	1,433,566,869	1,434,399,093	(832,224)	22,091,419
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	3,722,058,293	1,434,413,242	2,287,645,051	2,204,643,872

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

LIABILITIES, SURPLUS AND OTHER FUNDS

	1 Current Statement Date	2 December 31 Prior Year
1. Aggregate reserve for life contracts \$ 122,059,570,860 less \$ included in Line 6.3 (including \$ 135,866,460 Modco Reserve)	122,059,570,860	119,010,301,284
2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve)	2,999,274,460	2,967,573,431
3. Liability for deposit-type contracts (including \$ Modco Reserve)	14,677,158,040	14,369,907,287
4. Contract claims:		
4.1 Life	403,135,462	408,860,759
4.2 Accident and health	24,883,394	27,487,143
5. Policyholders' dividends/refunds to members \$ 7,659,206 and coupons \$ due and unpaid	7,659,206	7,952,382
6. Provision for policyholders' dividends, refunds to members and coupons payable in following calendar year - estimated amounts:		
6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$ Modco)	1,739,562,515	1,704,768,185
6.2 Policyholders' dividends and refunds to members 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 \$ 10,001,601 accident and health premiums	45,096,023	32,700,041
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	14,412,160	10,424,232
9.3 Other amounts payable on reinsurance, including \$ (328,268) assumed and \$ 10,839,815 ceded	10,511,547	17,212,429
9.4 Interest Maintenance Reserve		
10. Commissions to agents due or accrued-life and annuity contracts \$ 36,584,981 , accident and health \$ 232,367 and deposit-type contract funds \$ 9,564,854	46,382,202	7,506,755
11. Commissions and expense allowances payable on reinsurance assumed	3,667,538	4,994,328
12. General expenses due or accrued	975,768,586	1,095,534,762
13. Transfers to Separate Accounts due or accrued (net) (including \$ (127,672,751) accrued for expense allowances recognized in reserves, net of reinsured allowances)	(152,548,029)	(146,648,819)
14. Taxes, licenses and fees due or accrued, excluding federal income taxes	43,377,021	50,761,771
15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses)		3,434
15.2 Net deferred tax liability		
16. Unearned investment income	372,129,007	175,081,674
17. Amounts withheld or retained by reporting entity as agent or trustee	34,203,193	35,906,971
18. Amounts held for agents' account, including \$ agents' credit balances	362,915,088	333,630,886
19. Remittances and items not allocated	1,146,932,162	890,822,640
20. Net adjustment in assets and liabilities due to foreign exchange rates		
21. Liability for benefits for employees and agents if not included above	187,059,293	179,825,843
22. Borrowed money \$ 249,749,431 and interest thereon \$	249,749,431	249,786,188
23. Dividends to stockholders declared and unpaid		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve	4,657,225,992	3,306,820,067
24.02 Reinsurance in unauthorized and certified (\$) companies	180,364	189,342
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers		
24.04 Payable to parent, subsidiaries and affiliates	(39,598,575)	(17,130,060)
24.05 Drafts outstanding		
24.06 Liability for amounts held under uninsured plans		
24.07 Funds held under coinsurance	4,159,976,871	4,098,648,265
24.08 Derivatives	8,415,962,537	4,911,983,117
24.09 Payable for securities	294,002,744	81,963,034
24.10 Payable for securities lending		
24.11 Capital notes \$ and interest thereon \$		
25. Aggregate write-ins for liabilities	9,415,570,449	9,742,092,195
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25)	172,154,219,541	163,558,959,566
27. From Separate Accounts Statement	69,295,199,065	64,478,100,585
28. Total liabilities (Lines 26 and 27)	241,449,418,606	228,037,060,151
29. Common capital stock		
30. Preferred capital stock		
31. Aggregate write-ins for other than special surplus funds		
32. Surplus notes	2,268,330,673	2,268,096,211
33. Gross paid in and contributed surplus		
34. Aggregate write-ins for special surplus funds	3,250,000	3,250,000
35. Unassigned funds (surplus)	16,189,626,880	13,338,440,458
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 \$ in Separate Accounts Statement)	18,461,207,553	15,609,786,669
38. Totals of Lines 29, 30 and 37	18,461,207,553	15,609,786,669
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	259,910,626,159	243,646,846,820
DETAILS OF WRITE-INS		
2501. Repurchase agreements	4,581,872,945	4,803,587,340
2502. Derivative collateral	2,735,906,380	2,945,652,368
2503. Derivative accrued interest	1,995,791,868	1,898,874,859
2598. Summary of remaining write-ins for Line 25 from overflow page	101,999,256	93,977,628
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	9,415,570,449	9,742,092,195
3101.		
3102.		
3103.		
3198. Summary of remaining write-ins for Line 31 from overflow page		
3199. Totals (Lines 3101 through 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 through 3403 plus 3498)(Line 34 above)	3,250,000	3,250,000

SUMMARY OF OPERATIONS

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
1. Premiums and annuity considerations for life and accident and health contracts	10,339,876,616	10,905,150,689	22,905,684,993
2. Considerations for supplementary contracts with life contingencies	13,242,727	12,734,431	23,694,419
3. Net investment income	3,672,576,669	3,631,744,112	7,709,838,336
4. Amortization of Interest Maintenance Reserve (IMR)	13,261,014	39,511,926	63,947,853
5. Separate Accounts net gain from operations excluding unrealized gains or losses		(3,132)	20
6. Commissions and expense allowances on reinsurance ceded	113,343,059	66,048,233	183,575,292
7. Reserve adjustments on reinsurance ceded	(5,720,385)	(107,456,470)	(120,338,587)
8. Miscellaneous Income:			
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	194,508,513	195,274,116	393,312,833
8.2 Charges and fees for deposit-type contracts			
8.3 Aggregate write-ins for miscellaneous income	361,642,847	289,461,677	561,716,288
9. Totals (Lines 1 to 8.3)	14,702,731,060	15,032,465,582	31,721,431,447
10. Death benefits	1,013,056,391	959,241,750	1,801,487,193
11. Matured endowments (excluding guaranteed annual pure endowments)	10,401,455	9,172,456	15,155,252
12. Annuity benefits	1,066,184,504	1,019,753,296	2,004,550,137
13. Disability benefits and benefits under accident and health contracts	181,336,701	181,126,917	369,893,030
14. Coupons, guaranteed annual pure endowments and similar benefits			
15. Surrender benefits and withdrawals for life contracts	10,486,336,500	8,074,963,149	18,213,757,819
16. Group conversions			
17. Interest and adjustments on contract or deposit-type contract funds	196,447,624	213,995,565	426,166,626
18. Payments on supplementary contracts with life contingencies	7,570,524	7,099,002	14,836,103
19. Increase in aggregate reserves for life and accident and health contracts	3,056,352,961	3,121,442,799	7,507,800,736
20. Totals (Lines 10 to 19)	16,017,686,660	13,586,794,934	30,353,646,896
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only)	480,298,322	470,768,090	978,144,683
22. Commissions and expense allowances on reinsurance assumed	36,873,665	45,949,382	83,452,865
23. General insurance expenses and fraternal expenses	1,145,217,107	1,171,624,650	2,366,077,039
24. Insurance taxes, licenses and fees, excluding federal income taxes	143,155,710	133,166,551	257,788,721
25. Increase in loading on deferred and uncollected premiums	(19,131,319)	(27,881,837)	(27,564,856)
26. Net transfers to or (from) Separate Accounts net of reinsurance	(3,681,780,880)	(611,551,345)	(3,008,428,954)
27. Aggregate write-ins for deductions	(437,637,936)	(596,870,760)	(1,031,463,367)
28. Totals (Lines 20 to 27)	13,684,681,329	14,171,999,665	29,971,653,027
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	1,018,049,731	860,465,917	1,749,778,420
30. Dividends to policyholders and refunds to members	814,295,786	750,792,123	1,695,253,440
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	203,753,945	109,673,794	54,524,980
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	4,148,547	22,974,460	(168,384,146)
33. Net gain from operations after dividends to policyholders, refunds to members and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	199,605,398	86,699,334	222,909,126
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$(23,047,338) (excluding taxes of \$19,172,481 transferred to the IMR)	(82,872,602)	(1,424,404,772)	(1,044,256,266)
35. Net income (Line 33 plus Line 34)	116,732,796	(1,337,705,438)	(821,347,140)
CAPITAL AND SURPLUS ACCOUNT			
36. Capital and surplus, December 31, prior year	15,609,786,669	15,705,216,653	15,705,216,653
37. Net income (Line 35)	116,732,796	(1,337,705,438)	(821,347,140)
38. Change in net unrealized capital gains (losses) less capital gains tax of \$(201,555,103)	3,866,521,724	287,088,460	1,778,861,989
39. Change in net unrealized foreign exchange capital gain (loss)	(226,867,675)	(308,625,513)	(594,081,445)
40. Change in net deferred income tax	8,010,863	299,426,563	289,824,267
41. Change in nonadmitted assets	462,662,833	(355,473,131)	(716,309,297)
42. Change in liability for reinsurance in unauthorized and certified companies	8,978	24,171	15,137
43. Change in reserve on account of change in valuation basis, (increase) or decrease			
44. Change in asset valuation reserve	(1,350,405,925)	792,507,895	(99,750,481)
45. Change in treasury stock			
46. Surplus (contributed to) withdrawn from Separate Accounts during period		3,153	3,153
47. Other changes in surplus in Separate Accounts Statement			(3,153)
48. Change in surplus notes	234,462	234,462	468,924
49. Cumulative effect of changes in accounting principles			
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	(25,477,173)	(54,656,074)	66,888,062
54. Net change in capital and surplus for the year (Lines 37 through 53)	2,851,420,883	(677,175,452)	(95,429,984)
55. Capital and surplus, as of statement date (Lines 36 + 54)	18,461,207,552	15,028,041,201	15,609,786,669
DETAILS OF WRITE-INS			
08.301. Management and administrative fees	137,704,941	143,762,025	284,985,025
08.302. Change in corporate owned life insurance	104,954,771	16,869,074	10,599,028
08.303. Experience refunds on reinsurance contracts	67,284,299	60,057,337	132,207,033
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	51,698,836	68,773,241	133,925,202
08.399. Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	361,642,847	289,461,677	561,716,288
2701. Change in reserves due reinsurance agreement	(596,465,957)	(709,328,382)	(1,221,343,804)
2702. Reinsurance ceded adjustment	(6,906,039)	(7,272,747)	(14,545,497)
2703. Market value adjustment transfer	(81,269)	(3,687,265)	(2,947,226)
2798. Summary of remaining write-ins for Line 27 from overflow page	165,815,329	123,417,634	207,373,160
2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	(437,637,936)	(596,870,760)	(1,031,463,367)
5301. Other changes in surplus	(18,571,134)	(47,383,327)	(46,534,072)
5302. Reinsurance ceded adjustment	(6,906,039)	(7,272,747)	(14,545,497)
5303. Change in minimum pension liability			127,967,631
5398. Summary of remaining write-ins for Line 53 from overflow page			
5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above)	(25,477,173)	(54,656,074)	66,888,062

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

CASH FLOW

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
Cash from Operations			
1. Premiums collected net of reinsurance	10,243,825,203	10,990,431,836	22,608,709,332
2. Net investment income	3,745,192,890	2,856,438,992	6,761,697,857
3. Miscellaneous income	541,904,066	405,497,296	1,015,740,250
4. Total (Lines 1 to 3)	14,530,922,159	14,252,368,124	30,386,147,439
5. Benefit and loss related payments	13,045,624,894	10,444,347,363	22,915,622,389
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(3,675,881,671)	(692,445,453)	(3,090,655,493)
7. Commissions, expenses paid and aggregate write-ins for deductions	1,289,207,360	1,215,162,472	2,702,636,293
8. Dividends paid to policyholders	779,811,103	740,648,546	1,588,224,238
9. Federal and foreign income taxes paid (recovered) net of \$ (3,896,105) tax on capital gains (losses)	(317,439,421)	(233,059,480)	(162,241,559)
10. Total (Lines 5 through 9)	11,121,322,265	11,474,653,448	23,953,585,868
11. Net cash from operations (Line 4 minus Line 10)	3,409,599,894	2,777,714,676	6,432,561,571
Cash from Investments			
12. Proceeds from investments sold, matured or repaid:			
12.1 Bonds	10,021,890,290	9,894,634,888	19,213,999,109
12.2 Stocks	403,149,594	1,208,723,986	2,708,586,089
12.3 Mortgage loans	1,332,094,377	1,199,370,456	2,330,683,301
12.4 Real estate	55,530,458	273,427,314	275,807,610
12.5 Other invested assets	461,560,691	1,251,721,813	2,155,259,323
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	11,053,461	1,746,932	13,072,429
12.7 Miscellaneous proceeds	111,341,060	(511,052,593)	71,696,828
12.8 Total investment proceeds (Lines 12.1 to 12.7)	12,396,619,931	13,318,572,796	26,769,104,689
13. Cost of investments acquired (long-term only):			
13.1 Bonds	13,975,081,300	12,835,073,522	26,525,627,843
13.2 Stocks	983,425,519	498,604,297	895,103,810
13.3 Mortgage loans	2,052,562,895	1,854,099,971	3,698,401,345
13.4 Real estate	43,772,254	(9,886,664)	(233,372,268)
13.5 Other invested assets	547,631,484	798,147,338	1,652,995,507
13.6 Miscellaneous applications	(36,833,915)	(445,257,667)	724,893,581
13.7 Total investments acquired (Lines 13.1 to 13.6)	17,565,639,537	15,530,780,797	33,263,649,818
14. Net increase (or decrease) in contract loans and premium notes	218,604,078	328,364,756	545,869,329
15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	(5,387,623,684)	(2,540,572,757)	(7,040,414,458)
Cash from Financing and Miscellaneous Sources			
16. Cash provided (applied):			
16.1 Surplus notes, capital notes			
16.2 Capital and paid in surplus, less treasury stock			
16.3 Borrowed funds	21,049	39,912,708	(234,576)
16.4 Net deposits on deposit-type contracts and other insurance liabilities	350,311,316	606,661,567	86,596,125
16.5 Dividends to stockholders			
16.6 Other cash provided (applied)	(188,291,742)	161,485,042	1,259,929,462
17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	162,040,623	808,059,317	1,346,291,011
RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS			
18. Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17)	(1,815,983,167)	1,045,201,236	738,438,124
19. Cash, cash equivalents and short-term investments:			
19.1 Beginning of year	4,318,003,746	3,579,565,622	3,579,565,622
19.2 End of period (Line 18 plus Line 19.1)	2,502,020,579	4,624,766,858	4,318,003,746

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

20.0001. Bond conversions and refinancing	660,854,880	195,838,277	1,058,254,566
20.0002. Premium income recognized for a group annuity contracts	223,272,248		292,360,873
20.0003. Change in market value of corporate owned life insurance	105,204,542	17,104,969	11,073,742
20.0004. Transfer of mortgage loan to other invested assets	91,145,668	81,265,450	244,153,148
20.0005. Stock conversion	53,161,108	29,809,048	128,169,724
20.0006. Net investment income payment in-kind bonds	3,698,799	2,292,627	9,227,709
20.0007. Dividend reinvestment	116,308	4,909,373	11,434,061
20.0008. Net investment income payment in-kind stocks	78,219	460,873	460,873
20.0009. Transfer of common stocks – subsidiaries and affiliated to other invested assets	52,176		1,333,718,935
20.0010. Bonds and common stock contributed to EM Opportunities LLC		72,854,677	74,063,408

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

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

20.0011. Bank loan rollovers	56,885,606	55,096,955
20.0012. Dividend declared from Insurance Road LLC	52,000,000	
20.0013. Return of capital	105,953	105,953
20.0014. Other invested assets contributed to Insurance Road LLC		476,114,707
20.0015. Transfer from bonds to other than invested assets		199,694,466
20.0016. Transfer of bonds to partnerships		81,111,847
20.0017. Transfer of other invested assets to real estate		56,615,096

EXHIBIT 1

DIRECT PREMIUMS AND DEPOSIT-TYPE CONTRACTS

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
1. Industrial life			
2. Ordinary life insurance	3,544,678,406	3,350,560,040	7,405,145,430
3. Ordinary individual annuities	1,828,918,844	997,403,708	3,303,332,907
4. Credit life (group and individual)			
5. Group life insurance	743,758,642	393,849,766	701,120,304
6. Group annuities	4,586,276,797	5,509,749,095	11,111,242,611
7. A & H - group	228,881	153,434	371,603
8. A & H - credit (group and individual)			
9. A & H - other	373,599,035	372,021,750	747,932,707
10. Aggregate of all other lines of business			
11. Subtotal (Lines 1 through 10)	11,077,460,605	10,623,737,793	23,269,145,562
12. Fraternal (Fraternal Benefit Societies Only)			
13. Subtotal (Lines 11 through 12)	11,077,460,605	10,623,737,793	23,269,145,562
14. Deposit-type contracts	2,486,752,464	2,166,371,340	4,486,037,688
15. Total (Lines 13 and 14)	13,564,213,069	12,790,109,133	27,755,183,250
DETAILS OF WRITE-INS			
1001.			
1002.			
1003.			
1098. Summary of remaining write-ins for Line 10 from overflow page			
1099. Totals (Lines 1001 through 1003 plus 1098)(Line 10 above)			

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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 #	2019	2018
NET INCOME					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ 116,732,796	\$ (821,347,140)
(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>\$ 116,732,796</u>	<u>\$ (821,347,140)</u>
SURPLUS					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 18,461,207,553	\$ 15,609,786,669
(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>\$ 18,461,207,553</u>	<u>\$ 15,609,786,669</u>

b. Use of estimates in the preparation of the financial statements - No change

c. Accounting policy:

(1-5) No change

- (6) For loan-backed and structured securities, such as asset-backed securities, mortgage-backed securities, including residential mortgage-backed securities and commercial mortgage-backed securities, and structured securities, including collateralized debt obligations, 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.

(7-14) No change

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. For the six months ended June 30, 2019, corrections of prior years' errors were recorded in surplus, net of tax:

	Increase (Decrease) to:		
	Prior Years' Net Income	Current Year Surplus	Asset or Liability Balances
Contract claims and other benefits	(5,200,429)	(5,200,429)	5,200,429
Liabilities for deposit-type contracts	42,188,338	42,188,338	(42,188,338)
Other than invested assets	\$ (3,794,493)	\$ 114,705,507	\$ 114,705,507
Policyholders' reserves	(48,604,549)	(48,604,549)	48,604,549
Other liabilities	(3,160,000)	(3,160,000)	3,160,000
Total	<u>\$ (18,571,133)</u>	<u>\$ 99,928,867</u>	

Of the \$99,928,867 increase to surplus for prior years' errors, \$18,571,133 was recorded as prior period adjustments with an additional amount of \$118,500,000 that was recorded as a change in nonadmitted assets, net of taxes.

NOTES TO FINANCIAL STATEMENTS

For the six months ended June 30, 2018, corrections of prior years' errors were recorded in surplus, net of tax:

	Increase (Decrease) to:		
	Prior Years' Net Income	Current Year Surplus	Asset or Liability Balances
Partnerships and limited liability companies	\$ -	\$ (58,641,016)	\$ (58,641,016)
Deferred income taxes	-	(36,021,141)	(36,021,141)
Policyholders' reserves	(40,521,324)	(40,521,324)	40,521,324
Policyholders' dividends	(3,397,000)	(3,397,000)	3,397,000
Total	\$ (43,918,324)	\$ (138,580,481)	

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

Of the \$138,580,481 decrease to surplus for prior years' errors, \$43,918,324 was recorded as prior period adjustments with offsets of \$58,641,016 that was recorded as a change in nonadmitted assets, net of taxes and \$36,021,141 that was recorded as a change in net deferred income taxes in the Statutory Statements of Changes in Surplus.

b. Adoption of new accounting standards:

In June 2016, the NAIC adopted modifications to Statements of Statutory Accounting Principles (SSAP) No. 51R, Life Contracts, to incorporate references to the Valuation Manual and to facilitate the implementation of principles-based reserving (PBR), which were effective on January 1, 2017. The adoption of PBR only applies to new life insurance policies issued after January 1, 2017, however the Company plans to adopt these revisions to SSAP No. 51R using the 3-year phased in approach by no later than January 1, 2020. The Company currently uses formulas and assumptions to determine reserves as prescribed by state laws and regulations. Under PBR, the Company will be required to hold the higher of (a) the reserve using prescribed factors and (b) the PBR reserve which considers a wide range of future economic conditions, computed using justified company experience factors, such as mortality, policyholder behavior and expenses. The modifications are not expected to have a material effect on the Company's total life reserves and surplus in the financial statements.

In October 2018, the NAIC issued modifications to SSAP No. 86, Derivatives, effective January 1, 2019. This guidance permits the use of the Overnight Index Swap (OIS) rate based on Secured Overnight Financing Rate as a U.S. benchmark interest rate for hedge accounting purposes under ASC Topic 815 in addition to the U.S. Treasury rate, the LIBOR swap rate, the OIS rate based on the Fed Funds Effective Rate, and the SIFMA Municipal Swap Rate. The Company has not elected to apply hedge accounting, therefore adoption of this guidance did not have an impact on the Company's financial statements.

In November 2018, the NAIC issued SSAP No. 30R, Unaffiliated Common Stock, effective January 1, 2019. These clarifications applies to unaffiliated common stock including Securities Exchange Commission registered investment companies, such as closed-end mutual funds and unit investments trusts. The modification also includes public stock warrants, while nonpublic stock warrants would be classified as derivative instruments. The modifications did not have a material effect on the Company's financial statements.

In April 2019, the NAIC adopted modifications to SSAP No. 16R, Electronic Data Processing Equipment and Software, effective January 1, 2020, the Company elected to early adopt effective April 1, 2019. This guidance aligns and clarifies the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract, with the requirement for capitalizing implementation costs incurred to develop or obtain internal-use software. Costs for implementation activities in the application development stage is capitalized, depending on the nature of the costs and would be nonadmitted, while costs incurred during preliminary project or post implementation stages are expensed as incurred. The amendments also require the entity to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the lesser of the expected term of the hosting arrangement or five years. The Company adopted this guidance on a prospective basis and the adoption did not have a significant impact to its financial statements.

Note 3 – Business Combinations and Goodwill - No change

Note 4 – Discontinued Operations - No change

Note 5 – Investments

- a. Mortgage loans, including mezzanine real estate loans - No change
- b. Debt restructuring - No change
- c. Reverse mortgages - No change
- d. Loan-backed 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 other-than-temporary impairments (OTTI) classified on the following bases for recognizing OTTI:

NOTES TO FINANCIAL STATEMENTS

(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		7,789,431	-	154,795	7,634,636	
c. Total first quarter	\$	7,789,431	\$	-	\$	154,795

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		7,999,887	-	932,709	7,067,178	
f. Total second quarter	\$	7,999,887	\$	-	\$	932,709

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		-	-	-	-	
i. Total third quarter	\$	-	\$	-	\$	-

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		-	-	-	-	
l. Total fourth quarter	\$	-	\$	-	\$	-

m. Annual aggregate total

\$	-	\$	1,087,504
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All impairments were taken due to the present value of cash flows expected to be collected being less than the amortized cost basis.

- (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
61750MAB1	\$ 5,275	\$ 4,933	\$ (341)	\$ 4,933	\$ 4,989	March 31, 2019
65106FAG7	232,843	215,725	(17,118)	215,725	6,315	March 31, 2019
18974BAA7	285,889	270,801	(15,088)	270,801	278,615	March 31, 2019
18974BAN9	149,774	139,333	(10,441)	139,333	148,234	March 31, 2019
32051GCF0	22,786	(6,720)	(29,507)	(6,720)	17,552	March 31, 2019
761118FM5	3,259,303	3,218,368	(40,935)	3,218,368	3,244,153	March 31, 2019
17309FAE8	200,512	200,501	(11)	200,501	208,828	March 31, 2019
466247UG6	467,713	452,358	(15,354)	452,358	459,812	March 31, 2019
57643QAE5	3,114,325	3,109,375	(4,949)	3,109,375	3,256,106	March 31, 2019
US74951PBV94	51,011	29,959	(21,051)	29,959	58,410	March 31, 2019
61750MAB1	5,283	4,899	(383)	4,900	4,344	June 30, 2019
65106FAG7	229,769	212,651	(17,118)	212,651	1,110	June 30, 2019
18974BAN9	154,354	143,911	(10,443)	143,911	141,999	June 30, 2019
32051GCF0	21,220	(8,286)	(29,507)	(8,287)	4,334	June 30, 2019
761118FM5	3,379,906	3,276,459	(103,447)	3,276,459	3,468,888	June 30, 2019
79548KXQ6	335,309	321,863	(13,445)	321,864	218,662	June 30, 2019
17309FAE8	201,350	201,338	(11)	201,339	203,249	June 30, 2019
466247UG6	455,076	439,722	(15,354)	439,722	450,922	June 30, 2019
55274SAM3	114,173	79,608	(34,565)	79,608	119,029	June 30, 2019
57643QAE5	3,047,671	2,360,286	(687,385)	2,360,286	3,180,695	June 30, 2019
US74951PBV94	55,776	34,724	(21,051)	34,725	49,924	June 30, 2019
Totals	\$ 15,789,318	\$ 14,701,808	\$ (1,087,504)	\$ 14,701,811	\$ 15,526,170	

NOTES TO FINANCIAL STATEMENTS

- (4) As of June 30, 2019, 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 \$ (41,211,362)
 2. 12 months or longer \$ (69,953,443)
 - b. The aggregate related fair value of securities with unrealized losses:
 1. Less than 12 months \$ 4,194,679,847
 2. 12 months or longer \$ 3,186,088,794

(5) No change

e. Dollar repurchase agreements and/or securities lending transactions: The Company did not have any dollar repurchase agreements and/or securities lending transactions.

f. Repurchase agreements transactions accounted for as secured borrowing:

- (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 as repurchase agreements approximates the fair value.

(2) Type of Repo Trades Used

	1 FIRST QUARTER	2 SECOND QUARTER	3 THIRD QUARTER	4 FOURTH QUARTER
a. Bilateral (YES/NO)	YES	YES	-	-
b. Tri-Party (YES/NO)	NO	NO	-	-

(3) Original (Flow) & Residual Maturity

	FIRST QUARTER				SECOND QUARTER			
	1 MINIMUM	2 MAXIMUM	3 AVERAGE DAILY BALANCE	4 ENDING BALANCE	5 MINIMUM	6 MAXIMUM	7 AVERAGE DAILY BALANCE	8 ENDING BALANCE
a. Open – No Maturity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Overnight	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
c. 2 Days to 1 Week	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
d. > 1 Week to 1 Month	\$ 25,112,500	\$ 478,331,250	\$ 191,700,481	\$ 478,331,250	\$ -	\$ -	\$ -	\$ -
e. > 1 Month to 3 Months	\$ 1,378,958,732	\$ 2,443,289,210	\$ 1,847,670,788	\$ 1,381,711,232	\$ 634,567,500	\$ 1,289,114,357	\$ 858,482,355	\$ 726,494,338
f. > 3 Months to 1 Year	\$ 2,518,781,700	\$ 4,217,378,750	\$ 3,068,496,660	\$ 3,009,547,950	\$ 3,338,682,975	\$ 3,937,000,995	\$ 3,624,799,097	\$ 3,795,019,538
g. > 1 Year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

	THIRD QUARTER				FOURTH QUARTER			
	9 MINIMUM	10 MAXIMUM	11 AVERAGE DAILY BALANCE	12 ENDING BALANCE	13 MINIMUM	14 MAXIMUM	15 AVERAGE DAILY BALANCE	16 ENDING BALANCE
a. Open – No Maturity	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Overnight	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
c. 2 Days to 1 Week	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
d. > 1 Week to 1 Month	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
e. > 1 Month to 3 Months	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
f. > 3 Months to 1 Year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
g. > 1 Year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(4) The company did not have any repurchase agreements where securities sold and/or acquired resulted in default as of June 30, 2019.

(5) Securities "Sold" Under Repo – Secured Borrowing

	FIRST QUARTER				SECOND QUARTER			
	1 MINIMUM	2 MAXIMUM	3 AVERAGE DAILY BALANCE	4 ENDING BALANCE	5 MINIMUM	6 MAXIMUM	7 AVERAGE DAILY BALANCE	8 ENDING BALANCE
a. BACV	XXX	XXX	XXX	\$ 4,869,590,432	XXX	XXX	XXX	\$ 4,521,513,876
b. Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
c. Fair Value	\$ 4,784,106,400	\$ 6,685,780,461	\$ 5,107,867,929	\$ 4,869,590,432	\$ 4,291,141,966	\$ 5,010,738,932	\$ 4,483,281,452	\$ 4,521,513,876

	THIRD QUARTER				FOURTH QUARTER			
	9 MINIMUM	10 MAXIMUM	11 AVERAGE DAILY BALANCE	12 ENDING BALANCE	13 MINIMUM	14 MAXIMUM	15 AVERAGE DAILY BALANCE	16 ENDING BALANCE
a. BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
b. Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
c. Fair Value	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(6) Securities Sold Under Repo – Secured Borrowing by NAIC Designation

NOTES TO FINANCIAL STATEMENTS

ENDING BALANCE

	1	2	3	4	5	6	7	8
	NONE	NAIC 1	NAIC 2	NAIC 3	NAIC 4	NAIC 5	NAIC 6	NON-ADMITTED
a. Bonds - BACV	\$ -	\$ 4,521,513,876	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Bonds - FV	-	4,521,513,876	-	-	-	-	-	-
c. LB & SS - BACV	-	-	-	-	-	-	-	-
d. LB & SS - FV	-	-	-	-	-	-	-	-
e. Preferred Stock - BACV	-	-	-	-	-	-	-	-
f. Preferred Stock - FV	-	-	-	-	-	-	-	-
g. Common Stock	-	-	-	-	-	-	-	-
h. Mortgage Loans - BACV	-	-	-	-	-	-	-	-
i. Mortgage Loans - FV	-	-	-	-	-	-	-	-
j. Real Estate - BACV	-	-	-	-	-	-	-	-
k. Real Estate - FV	-	-	-	-	-	-	-	-
l. Derivatives - BACV	-	-	-	-	-	-	-	-
m. Derivatives - FV	-	-	-	-	-	-	-	-
n. Other Invested Assets - BACV	-	-	-	-	-	-	-	-
o. Other Invested Assets - FV	-	-	-	-	-	-	-	-
p. Total Assets - BACV	\$ -	\$ 4,521,513,876	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
q. Total Assets - FV	\$ -	\$ 4,521,513,876	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

p=a+c+e+g+h+i+j+l+n

q=b+d+f+g+i+k+m+o

(7) Collateral Received – Secured Borrowing

	FIRST QUARTER				SECOND QUARTER			
	1	2	3	4	5	6	7	8
	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE
a. Cash	\$ 6,100,802	\$ 23,884,197	\$ 12,360,041	\$ 14,619,197	\$ 14,996,687	\$ 15,771,687	\$ 15,231,443	\$ 14,996,687
b. Securities (FV)	\$ 3,568,544,223	\$ 4,903,138,950	\$ 4,655,778,775	\$ 4,407,590,406	\$ 3,705,744,296	\$ 4,562,749,659	\$ 4,269,765,500	\$ 4,562,749,659

	THIRD QUARTER				FOURTH QUARTER			
	9	10	11	12	13	14	15	16
	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE
a. Cash	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Securities (FV)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(8) Cash & Non-Cash Collateral Received – Secured Borrowing by NAIC Designation

ENDING BALANCE

	1	2	3	4	5	6	7	8
	NONE	NAIC 1	NAIC 2	NAIC 3	NAIC 4	NAIC 5	NAIC 6	DOES NOT QUALIFY AS ADMITTED
a. Cash	\$ 14,996,687	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Bonds - FV	-	4,562,749,659	-	-	-	-	-	-
c. LB & SS - FV	-	-	-	-	-	-	-	-
d. Preferred Stock - FV	-	-	-	-	-	-	-	-
e. Common Stock	-	-	-	-	-	-	-	-
f. Mortgage Loans - FV	-	-	-	-	-	-	-	-
g. Real Estate - FV	-	-	-	-	-	-	-	-
h. Derivatives - FV	-	-	-	-	-	-	-	-
i. Other Invested Assets - FV	-	-	-	-	-	-	-	-
j. Total Collateral Assets - FV (Sum of a through i)	\$ 14,996,687	\$ 4,562,749,659	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(9) Allocation of Aggregate Collateral by Remaining Contractual Maturity

	FAIR VALUE
a. Overnight and Continuous	\$ -
b. 30 Days or Less	\$ 2,074,130,895
c. 31 to 90 Days	\$ 2,447,382,981
d. > 90 Days	\$ -

(10) The company did not have any repurchase agreements where cash collateral received was reinvested as of June 30, 2019.

(11) Liability to Return Collateral – Secured Borrowing (Total)

	FIRST QUARTER				SECOND QUARTER			
	1	2	3	4	5	6	7	8
	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE
a. Cash (Collateral – All)	\$ 6,100,802	\$ 23,884,197	\$ 12,360,041	\$ 14,619,197	\$ 14,996,687	\$ 15,771,687	\$ 15,231,443	\$ 14,996,687
b. Securities Collateral (FV)	\$ 3,568,544,223	\$ 4,903,138,950	\$ 4,655,778,775	\$ 4,407,590,406	\$ 3,705,744,296	\$ 4,562,749,659	\$ 4,269,765,500	\$ 4,562,749,659

	THIRD QUARTER				FOURTH QUARTER			
	9	10	11	12	13	14	15	16
	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE	MINIMUM	MAXIMUM	AVERAGE DAILY BALANCE	ENDING BALANCE
a. Cash (Collateral – All)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Securities Collateral (FV)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

g. Reverse repurchase agreements transactions accounted for as secured borrowing: The Company did not have any reverse repurchase

NOTES TO FINANCIAL STATEMENTS

agreements transactions accounted for as secured borrowing.

- h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale.
- i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase agreements transactions accounted for as a sale.
- j. Real estate - No change
- k. Low-Income Housing Tax Credit - No change
- l. Restricted Assets - No change
- m. Working capital finance investments: The Company did not invest in working capital finance investments.
- n. 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.
- o. 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". Structured notes are different than the asset backed structured securities, which are accounted for under SSAP No. 43R, "Revised - Loan-Backed and Structured Securities", 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 June 30, 2019:

CUSIP Identification	Actual Cost	Fair Value	Book / Adjusted Carrying Value	Mortgage-Referenced Security (YES/NO)
30711XDK7	\$ 222,688	\$ 212,104	\$ 219,597	YES
391164AF7	8,467,560	8,137,558	8,024,979	NO
P7794GAH5	1,262,834	1,304,074	1,269,415	NO
912810FR4	4,944,283	6,392,479	5,778,439	NO
912810PS1	1,874,118	2,780,096	2,396,371	NO
059514AC3	9,327,385	10,512,766	9,369,250	NO
Total	\$ 26,098,868	\$ 29,339,077	\$ 27,058,051	XXX

- p. 5GI Securities:

Investment	Number of 5GI Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	81	92	\$623,679,827	\$669,688,836	\$617,084,396	\$651,777,531
(2) LB&SS - AC	-	-	-	-	-	-
(3) Preferred Stock - AC	3	4	14,600,149	15,232,649	21,044,727	19,902,853
(4) Preferred Stock - FV	-	-	-	-	-	-
(5) Total (1+2+3+4)	84	96	\$638,279,976	\$684,921,485	\$638,129,123	\$671,680,384

AC - Amortized Cost FV - Fair Value

- q. Short Sales - The Company does not engage in short sale transactions.
- r. Prepayment Penalty and Acceleration Fees:

	Six Months Ended June 30, 2019	
	General Account	Separate Account
1. Number of CUSIPS	35	11
2. Aggregate Amount of Investment Income	\$ 40,080,907	\$ 514,369

Note 6 – Joint Ventures, Partnerships and Limited Liability Companies - No change

Note 7 – Investment Income – No change

Note 8 – Derivative Instruments - No change

Note 9 – Income Taxes – No change

Note 10 – Information Concerning Parent, Subsidiaries and Affiliates

NOTES TO FINANCIAL STATEMENTS

a-c. MMHLLC paid \$650,000,000 in dividends to MassMutual for the period ended June 30, 2019, which were declared in December 2018, declared \$300,000,000 of dividends in June 2019 to be paid to MassMutual subsequent to June 30, 2019 and declared \$250,000,000 in dividends for the period ended June 30, 2018.

MassMutual contributed additional capital of \$50,140,419 to MMHLLC for the six months ended June 30, 2019 and \$143,806,605 for the six months ended June 30, 2018.

On May 24, 2019, an indirectly wholly owned subsidiary of MassMutual, MM Asset Management Holding LLC (MMAMH) executed the sale of its retail asset management affiliate, OppenheimerFunds, Inc. (OFI), to Invesco Ltd. (Invesco), a global asset manager. Under the terms of the sale, MMAMH and OFI employee shareholders received 81.8 million of Invesco common shares and \$3,948,653,000 in perpetual, non-cumulative preference shares with a fixed cash dividend rate of 5.9%. MMAMH is a directly wholly owned subsidiary of MMHLLC. In turn, MMAMH received 15.7% common equity interest in post transaction Invesco and MMAMH entered into a shareholder rights, including the appointment of a director to Invesco's board of directors. MassMutual's investment in MMHLLC was increased from the impact of this sale through change in unrealized capital gains of \$3,331,000,000, with an approximate net increase to surplus of \$2,500,000,000.

d-f. No change

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 could 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 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.

h-n. No change

Note 11 – Debt

a. No change

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 \$896,212,863 as of June 30, 2019.

(2) FHLB Boston capital stock

a. Aggregate totals:

		June 30, 2019		
		1 Total 2+3	2 General Account	3 Separate Account
1.	Current Year:			
	(a) Membership stock - Class A	\$ -	\$ -	-
	(b) Membership stock - Class B	10,000,000	10,000,000	-
	(c) Activity Stock	49,400,000	49,400,000	-
	(d) Excess Stock	-	-	-
	(e) Aggregate Total	<u>\$ 59,400,000</u>	<u>\$ 59,400,000</u>	<u>\$ -</u>
	(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	48,700,000	48,700,000	-
	(d) Excess Stock	-	-	-
	(e) Aggregate Total	<u>\$ 73,700,000</u>	<u>\$ 73,700,000</u>	<u>\$ -</u>
	(f) Actual or Estimated Borrowing Capacity as determined by the Insurer	\$ 2,000,000,000	\$ 2,000,000,000	\$ -

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

		Six Months Ended June 30, 2019					
Membership Stock	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	10,000,000	10,000,000	-	-	-	-

NOTES TO FINANCIAL STATEMENTS

(3) Collateral pledged to FHLB:

a. Amount pledged as of June 30, 2019:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,600,247,239	\$ 1,226,576,046	\$ 1,103,787,138

2. Current year general account:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,600,247,239	\$ 1,226,576,046	\$ 1,103,787,138

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	\$ 1,585,921,118	\$ 1,217,470,617	\$ 1,103,750,455

b. Maximum amount pledged for the six months ended June 30, 2019:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,640,573,775	\$ 1,249,138,717	\$ 1,108,532,168

2. Current year general account:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,640,573,775	\$ 1,249,138,717	\$ 1,108,532,168

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	\$ 1,635,548,627	\$ 1,246,429,701	\$ 1,103,750,455

NOTES TO FINANCIAL STATEMENTS

(4) Borrowing from FHLB:

a. Amount:

1. Current year:

	June 30, 2019			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,103,787,138	1,103,787,138	-	1,103,787,138
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,103,787,138</u>	<u>\$ 1,103,787,138</u>	<u>\$ -</u>	<u>\$ 1,103,787,138</u>

2. Prior Year-end:

	December 31, 2018			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,103,750,455	1,103,750,455	-	1,103,750,455
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,103,750,455</u>	<u>\$ 1,103,750,455</u>	<u>\$ -</u>	<u>\$ 1,103,750,455</u>

b. Maximum Amount:

	Six Months Ended June 30, 2019		
	1 Total 2+3	2 General Account	3 Separate Account
1. Debt	\$ -	\$ -	\$ -
2. Funding	1,108,532,168	1,108,532,168	-
3. Other	-	-	-
4. Aggregate	<u>\$ 1,108,532,168</u>	<u>\$ 1,108,532,168</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:

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

(2-3) No change

	Six Months Ended June 30,					
	2019	2018	2019	2018	2019	2018
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits per SSAP No 11	
(4) Components of net periodic benefit cost						
a. Service cost	\$ 55,468,982	\$ 56,383,950	\$ 6,600,000	\$ 6,350,000	\$ -	\$ -
b. Interest cost	58,829,924	53,806,753	6,750,000	5,850,000	-	-
c. Expected return on plan assets	(79,753,546)	(85,754,200)	(50,000)	(50,000)	-	-
d. Transition asset or obligation	-	-	-	-	-	-
e. Gains and losses	28,246,736	27,398,535	(100,000)	1,150,000	-	-
f. Prior service cost or (credit)	-	1,561,342	(2,750,000)	(2,750,000)	-	-
g. Gain or loss recognized due to a settlement or curtailment	-	-	-	-	-	-
h. Total net periodic benefit cost	<u>\$ 62,792,096</u>	<u>\$ 53,396,380</u>	<u>\$ 10,450,000</u>	<u>\$ 10,550,000</u>	<u>\$ -</u>	<u>\$ -</u>

(5-21) No change

b-i No change

NOTES TO FINANCIAL STATEMENTS**Note 13 – Capital and Surplus, Shareholders' Dividend Restrictions and Quasi-Reorganizations**

(1-3) No change

(4) The Company is a mutual company, and as such does not pay stockholders' dividends.

(5-13) No change

Note 14 – Liabilities, Contingencies and Assessments

a. Contingent commitments:

In the normal course of business, the Company enters into funding agreements. In March 2019, MassMutual entered into a Contingent Capital Facility Agreement (the Facility) with an unaffiliated entity (the Trust). Under the Facility, subject to regulatory approval in certain circumstances, MassMutual has the right, and upon the occurrence of certain events has an obligation, to issue up to \$800,000,000 of surplus notes to the Trust in exchange for all or a pro rata portion of certain principal and interest strips of U.S. Treasury Securities held by the Trust. MassMutual is required to pay a facility fee of approximately 2.00% per year to the Trust on the undrawn portion of the Facility, totaling approximately \$16,000,000 per year if the Facility remains undrawn, and certain additional administrative fees and expenses.

b. Assessments - No change

c. Gain contingencies - No change

d. Claims related to extra contractual obligations - No change

e. Joint and several liabilities - No change

f. All other contingencies:

In the normal course of business, the Company is involved in disputes, litigation and governmental or regulatory inquiries, administrative proceedings, examinations and investigations, both pending and threatened. These matters, if resolved adversely against the Company or settled, may result in monetary damages, fines and penalties or require changes in the Company's business practices. The resolution or settlement of these matters is inherently difficult to predict. Based upon the Company's assessment of these pending matters, the Company does not believe that the amount of any judgment, settlement or other action arising from any pending matter is likely to have a material adverse effect on the statement of financial position. However, an adverse outcome in certain matters could have a material adverse effect on the results of operations for the period in which such matter is resolved, or an accrual is determined to be required, on the financial statement financial position, or on our reputation.

The Company evaluates the need for accruals of loss contingencies for each matter. When a liability for a matter is probable and can be estimated, the Company accrues an estimate of the loss and any related insurance recoveries, if any. An accrual is subject to subsequent adjustment as a result of additional information and other developments. The resolution of matters are inherently difficult to predict, especially in the early stages of matter. Even if a loss is probable, due to many complex factors, such as speed of discovery and the timing of court decisions or rulings, a loss or range of loss may not be reasonably estimated until the later stages of the matter. For matters where a loss is material and it is either probable or reasonably possible then it is disclosed. For matters where a loss may be reasonably possible, but not probable, or is probable but not reasonably estimated, no accrual is established, but the matter, if material, is disclosed.

Note 15 – Leases - No change**Note 16 – Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk** - No change**Note 17 – Sale, Transfer and Servicing of Financial Assets and Extinguishments of Liabilities**

a. Transfers of receivables reported as sales - No change

b. Transfer and servicing of financial assets:

(1) No change

(2) The Company did not have any servicing assets or liabilities in 2019 or 2018.

(3) No change

(4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2019 or 2018.

(5-7) No change

c. Wash sales:

(1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days 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, or unrated, through the six months ended June 30, 2019 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 - No change**Note 19 – Direct Premium Written/Produced By Managing General Agents/Third Party Administrators** - No change**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.

NOTES TO FINANCIAL STATEMENTS

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.

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 Bloomberg Barclays Global-Aggregate Total Return 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:

	June 30, 2019			Net Asset Value	
	Level 1	Level 2	Level 3	(NAV)	Total
Financial assets:					
Bonds:					
Special revenue	-	49,998	-	-	49,998
Industrial and miscellaneous	\$ 10,058,792	\$ 197,051,557	\$ 76,031,013	\$ -	\$ 283,141,362
Preferred stocks	-	-	10,418,983	-	10,418,983
Common stock - subsidiaries and affiliates	156,539,802	-	117,123,250	-	273,663,052
Common stock - unaffiliated	982,875,518	-	236,372,553	-	1,219,248,071
Derivatives:					
Interest rate swaps	-	9,979,485,296	-	-	9,979,485,296
Options	111,517,132	621,440,737	-	-	732,957,869
Currency swaps	-	1,061,053,513	-	-	1,061,053,513
Forward contracts	-	74,867,860	-	-	74,867,860
Credit default swaps	-	329,956	-	-	329,956
Financial futures	179,994,733	-	-	-	179,994,733
Separate account assets	46,462,106,416	21,841,034,419	992,058,229	-	69,295,199,064
Total financial assets carried at fair value	\$ 47,903,092,394	\$ 33,775,313,335	\$ 1,432,004,028	\$ -	\$ 83,110,409,757
Financial liabilities:					
Interest rate swaps	\$ -	\$ 8,124,268,074	\$ -	\$ -	\$ 8,124,268,074
Options	2,623,529	-	-	-	2,623,529
Currency swaps	-	224,608,847	-	-	224,608,847
Forward contracts	-	36,502,180	-	-	36,502,180
Credit default swaps	-	414,462	-	-	414,462
Financial futures	27,105,407	-	-	-	27,105,407
Total financial liabilities carried at fair value	\$ 29,728,936	\$ 8,385,793,563	\$ -	\$ -	\$ 8,415,522,499

The Company reviews the fair value hierarchy classifications each reporting period. Changes in the observability of the valuation attributes and the level of market activity may result in a reclassification of certain financial assets or liabilities

NOTES TO FINANCIAL STATEMENTS

between fair value hierarchy classifications. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. For the period ended June 30, 2019, there were derivative transfers between Level 2 and Level 1 for options and futures are priced using quoted marks. The Company does not have any financial instruments that were carried at NAV as a practical expedient.

	December 31, 2018				
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Special revenue	\$ -	\$ 50,382	\$ -	\$ -	\$ 50,382
Industrial and miscellaneous	10,043,280	29,538,778	63,859,896	-	103,441,954
Parent, subsidiaries and affiliates	-	81,533,868	65,576,875	-	147,110,743
Preferred stocks	-	-	287,758	-	287,758
Common stock - subsidiaries and affiliates	233,070,805	-	164,920,846	-	397,991,651
Common stock - unaffiliated	194,455,569	-	305,537,860	-	499,993,429
Derivatives:					
Interest rate swaps	-	6,629,062,841	-	-	6,629,062,841
Options	-	910,876,374	-	-	910,876,374
Currency swaps	-	843,350,847	-	-	843,350,847
Forward contracts	-	106,021,420	-	-	106,021,420
Interest rate caps and floors	-	18,142,286	-	-	18,142,286
Financial futures	-	215,810,517	-	-	215,810,517
Separate account assets	41,358,963,395	22,568,484,678	550,652,512	-	64,478,100,585
Total financial assets carried at fair value	\$ 41,796,533,048	\$ 31,402,871,990	\$ 1,150,835,747	\$ -	\$ 74,350,240,785
Financial liabilities:					
Derivatives:					
Interest rate swaps	\$ -	\$ 4,646,939,586	\$ -	\$ -	\$ 4,646,939,586
Options	-	4,556,715	-	-	4,556,715
Currency swaps	-	231,601,523	-	-	231,601,523
Forward contracts	-	12,189,652	-	-	12,189,652
Credit default swaps	-	117,646	-	-	117,646
Financial futures	-	15,090,134	-	-	15,090,134
Total financial liabilities carried at fair value	\$ -	\$ 4,910,495,256	\$ -	\$ -	\$ 4,910,495,256

For the year ended December 31, 2018, \$298,342,115 of unaffiliated common stock were transferred from Level 2 to Level 1.

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

	Balance as of 01/01/2019	Transfers ⁽¹⁾		Gains (Losses) in Net Income	Gains (Losses) in Surplus	Purchases	Issuances	Sales	Settlements	Balance as of 6/30/2019
	In	Out	-	-						
Financial assets:										
Bonds:										
Industrial and miscellaneous	\$ 63,859,896	\$ 30,164,898	\$ -	\$ (19,189,475)	\$ 607,705	\$ 9,236	\$ 581,581	\$ -	\$ (2,828)	\$ 76,031,013
Parent, subsidiaries and affiliates	65,576,875	-	(65,576,875)	-	-	-	-	-	-	-
Preferred stock	287,758	10,000,000	-	-	131,226	-	-	-	-	10,418,984
Common stock - subsidiaries and affiliates	164,920,846	-	-	824,411	(44,222,222)	-	-	-	(4,399,794)	117,123,241
Common stock - unaffiliated	305,537,860	-	(596)	11,348,943	(22,444,473)	3,596,124	-	(60,172,286)	(1,493,019)	236,372,553
Derivatives:										
Separate account assets	550,652,512	-	-	16,984,258	-	779,171,833	-	(354,660,807)	(89,567)	992,058,229
Total financial assets	\$ 1,150,835,747	\$ 40,164,898	\$ (65,577,471)	\$ 9,968,137	\$ (65,927,764)	\$ 782,777,193	\$ 581,581	\$ (414,833,093)	\$ (5,985,208)	\$ 1,432,004,020

⁽¹⁾Level 3 transfers include assets that are consistently carried at fair value but have had a level change, are 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 the lower of cost or market carrying basis. Industrial and miscellaneous bonds in other transfers are assets that are no longer carried at fair value.

NOTES TO FINANCIAL STATEMENTS

	Balance	Transfers ⁽¹⁾		Gains	Gains	Purchases	Issuances	Sales	Settlements	Balance
	as of 01/01/2018	In	Out	(Losses) in Net Income	(Losses) in Surplus					as of 12/31/2018
Financial assets:										
Bonds:										
Industrial and miscellaneous	\$ 55,266,237	\$ 26,264,839	\$ -	\$ (4,286,686)	\$ (5,094,597)	\$ 28,095	\$ 1,149,829	\$ -	\$ (9,467,821)	\$ 63,859,896
Parent, subsidiaries, and affiliates	60,662,659	4,823,319	-	4,095,453	(7,905,019)	9,443,000	-	-	(5,542,537)	65,576,875
Preferred Stock	1,510,480	-	(1,510,480)	-	(258,495)	-	546,253	-	-	287,758
Common stock - subsidiaries and affiliates	109,665,674	13,222,371	-	493,096	19,959,607	15,219,962	6,360,136	-	-	164,920,846
Common stock - unaffiliated	310,576,050	8	-	5,907,774	13,633,102	16,475,759	2,685,166	(133,809)	(43,606,190)	305,537,860
Derivatives:										
Currency swaps	1,255,252	-	(1,255,252)	-	-	-	-	-	-	-
Separate account assets	709,516,352	-	-	7,025,543	-	112,288,189	-	(277,950,548)	(227,024)	550,652,512
Total financial assets	\$ 1,248,452,704	\$ 44,310,537	\$ (2,765,732)	\$ 13,235,180	\$ 20,334,598	\$ 153,455,005	\$ 10,741,384	\$ (278,084,357)	\$ (58,843,572)	\$ 1,150,835,747
Financial liabilities:										
Derivatives:										
Interest rate swaps	\$ 193,806	\$ -	\$ (193,806)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Currency swaps	8,432,028	-	(8,432,028)	-	-	-	-	-	-	-
Total financial liabilities	\$ 8,625,834	\$ -	\$ (8,625,834)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

⁽¹⁾Level 3 transfers include assets that are consistently carried at fair value but have had a level change, are 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 the lower of cost or market carrying basis. The common stock unaffiliated assets were transferred from Level 2 to Level 3 due to a change in the observability of pricing inputs.

- (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:

	June 30, 2019					Net	Not
	Aggregate	Admitted				Asset	Practicable
	Fair Value	Assets	Level 1	Level 2	Level 3	Value	(Carrying
						(NAV)	Value)
Financial assets:							
Bonds:							
U. S. government and agencies	\$ 5,678,278,749	\$ 5,115,856,958	-	\$ 5,677,881,305	\$ 397,444	-	-
All other governments	1,793,793,405	1,663,418,960	-	1,724,389,506	69,403,899	-	-
States, territories and possessions	616,191,562	561,461,877	-	616,191,562	-	-	-
Political subdivisions	598,361,420	544,892,549	-	598,361,420	-	-	-
Special revenue	6,716,597,275	5,921,984,155	-	6,706,758,161	9,839,114	-	-
Industrial and miscellaneous	85,150,343,448	80,850,240,876	10,058,792	48,938,309,877	36,201,974,779	-	-
Parent, subsidiaries and affiliates	6,707,099,306	6,571,635,638	-	322,471,688	6,384,627,618	-	-
Preferred stocks	768,783,205	746,026,422	11,323,983	-	757,459,222	-	-
Common stocks - subsidiaries and affiliates ⁽¹⁾	1,989,539,968	1,989,539,968	156,539,801	-	1,833,000,167	-	-
Common stocks - unaffiliated	1,219,248,071	1,219,248,071	982,875,518	-	236,372,553	-	-
Mortgage loans - commercial	23,885,727,016	22,760,450,618	-	-	23,885,727,016	-	-
Mortgage loans - residential	1,492,013,893	1,513,206,320	-	-	1,492,013,893	-	-
Cash, cash equivalents and short-term investments	2,502,020,579	2,502,020,579	112,095,660	2,389,924,919	-	-	-
Derivatives:							
Interest rate swaps	11,115,460,798	9,979,485,296	-	11,115,460,798	-	-	-
Options	732,957,869	732,957,869	-	732,957,869	-	-	-
Currency swaps	1,061,053,513	1,061,053,513	-	1,061,053,513	-	-	-
Forward contracts	74,867,860	74,867,860	-	74,867,860	-	-	-
Credit default swaps	24,638,472	17,943,358	-	24,638,472	-	-	-
Financial futures	179,994,733	179,994,733	-	179,994,733	-	-	-
Separate account assets	69,295,199,064	69,295,199,064	46,462,106,416	21,841,034,419	992,058,229	-	-
Financial liabilities:							
Repurchase agreements	4,544,326,376	4,544,326,376	-	4,544,326,376	-	-	-
Commercial paper	249,749,431	249,749,431	-	249,749,431	-	-	-
Guaranteed interest contracts	9,261,271,543	9,115,327,605	-	-	9,261,271,543	-	-
Group annuity contracts and other deposits	17,907,009,317	17,824,176,931	-	-	17,907,009,317	-	-
Individual annuity contracts	9,482,600,407	8,251,593,663	-	-	9,482,600,407	-	-
Supplementary contracts	1,172,943,243	1,171,853,499	-	-	1,172,943,243	-	-
Derivatives:							
Interest rate swaps	8,744,935,822	8,124,268,074	-	8,744,935,822	-	-	-
Options	2,623,529	2,623,529	-	2,623,529	-	-	-
Currency swaps	224,608,847	224,608,847	-	224,608,847	-	-	-
Forward contracts	36,502,180	36,502,180	-	36,502,180	-	-	-
Credit default swaps	635,633	854,500	-	635,633	-	-	-
Financial futures	27,105,407	27,105,407	-	27,105,407	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$13,895,764,782.

NOTES TO FINANCIAL STATEMENTS

December 31, 2018

	Aggregate	Admitted				Net	Not
	Fair Value	Assets	Level 1	Level 2	Level 3	Asset	Practicable
						Value	(Carrying
						(NAV)	Value)
Financial assets:							
Bonds:							
U. S. government and agencies	\$ 6,193,428,890	\$ 5,854,233,662	\$ -	\$ 6,192,947,715	\$ 481,174	\$ -	\$ -
All other governments	1,480,982,279	1,486,656,995	-	1,414,689,011	66,293,268	-	-
States, territories and possessions	646,576,736	613,530,541	-	646,576,736	-	-	-
Political subdivisions	571,557,366	547,158,039	-	571,557,366	-	-	-
Special revenue	6,420,868,430	5,927,223,715	-	6,411,389,089	9,479,341	-	-
Industrial and miscellaneous	74,537,526,494	75,125,303,136	10,043,280	42,694,321,928	31,833,161,285	-	-
Parent, subsidiaries and affiliates	7,570,106,836	7,526,017,122	-	1,171,337,829	6,398,769,007	-	-
Preferred stocks	733,775,843	744,092,065	11,668,660	-	722,107,184	-	-
Common stock - subsidiaries and affiliates ⁽¹⁾	397,991,651	397,991,651	233,070,805	-	164,920,846	-	-
Common stock - unaffiliated	499,993,428	499,993,428	194,455,569	-	305,537,860	-	-
Mortgage loans - commercial	22,793,945,324	22,357,118,876	-	-	22,793,945,324	-	-
Mortgage loans - residential	1,210,675,405	1,266,688,652	-	-	1,210,675,405	-	-
Cash, cash equivalents and short-term investments	4,318,003,746	4,318,003,746	175,136,350	4,142,867,396	-	-	-
Derivatives:							
Interest rate swaps	6,858,304,938	6,629,062,841	-	6,858,304,938	-	-	-
Options	910,876,374	910,876,374	-	910,876,374	-	-	-
Currency swaps	843,350,847	843,350,847	-	843,350,847	-	-	-
Forward contracts	113,066,759	106,021,420	-	113,066,759	-	-	-
Credit default swaps	6,238,219	18,044,346	-	6,238,219	-	-	-
Financial futures	215,810,517	215,810,517	-	215,810,517	-	-	-
Separate account assets	64,478,100,587	64,478,100,587	41,358,963,394	22,568,484,678	550,652,512	-	-
Financial liabilities:							
Repurchase agreements	4,768,493,900	4,768,493,900	-	4,768,493,900	-	-	-
Commercial paper	249,786,188	249,786,188	-	249,786,188	-	-	-
Guaranteed investment contracts	8,728,933,859	8,824,880,908	-	-	8,728,933,859	-	-
Group annuity contracts and other deposits	17,950,757,186	17,863,326,686	-	-	17,950,757,186	-	-
Individual annuity contracts	8,925,311,575	8,130,925,014	-	-	8,925,311,575	-	-
Supplementary contracts	1,179,488,114	1,178,326,789	-	-	1,179,488,114	-	-
Derivatives:							
Interest rate swaps	5,111,389,729	4,646,939,586	-	5,111,389,729	-	-	-
Options	4,556,715	4,556,715	-	4,556,715	-	-	-
Currency swaps	231,601,523	231,601,523	-	231,601,523	-	-	-
Forward contracts	27,811,672	12,189,652	-	27,811,672	-	-	-
Credit default swaps	1,957,447	1,605,508	-	1,957,447	-	-	-
Financial futures	15,090,134	15,090,134	-	15,090,134	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had statutory carrying values of \$10,347,741,501.

d. As of June 30, 2019 and December 31, 2018, the Company had no investments where it was not practicable to estimate fair value.

Note 21 – Other Items

- Unusual or infrequent items - No change
- Troubled debt restructuring - No change
- Other disclosures and unusual items:

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. The combined impact of these risks could have a material, adverse effect on the Company's financial statements or result in operating losses in future periods. The Company employs the use of reinsurance, portfolio diversification, asset/liability management processes and other risk management techniques to mitigate the impact of these risks. This condensed risks and uncertainties disclosure should be read in conjunction with the disclosure in the Company's 2018 Annual Statement.

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 denominated investments and medium-term notes along with its indirect international operations. The Company mitigates a portion of its 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, 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.

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.

Political Uncertainties

Political events, domestically or internationally, may directly or indirectly 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 management to utilize the mitigating actions described above to attempt to reduce the potential impact of each underlying risk factor on the Company.

- d. Business interruption insurance recoveries - No change
- e. State transferrable tax credits - No change
- f. Subprime mortgage related risk exposure:
 - (1) No change
 - (2) No change

NOTES TO FINANCIAL STATEMENTS

(3) Direct exposure through other investments.

Alt-A:	June 30, 2019			Six Months Ended June 30, 2019
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 219,979,577	\$ 257,853,603	\$ 286,958,355	\$ 151,068
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	15,096,784	17,509,617	19,232,202	12,694
f. Other assets	-	-	-	-
g. Total	<u>\$ 235,076,361</u>	<u>\$ 275,363,220</u>	<u>\$ 306,190,557</u>	<u>\$ 163,762</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.

Alt-A:	December 31, 2018			Year Ended December 31, 2018
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 219,822,592	\$ 256,906,006	\$ 296,513,786	\$ 800,251
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	16,095,268	18,430,722	20,861,741	76,979
f. Other assets	-	-	-	-
g. Total	<u>\$ 235,917,860</u>	<u>\$ 275,336,728</u>	<u>\$ 317,375,527</u>	<u>\$ 877,230</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.

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

g. Retained asset accounts - No change

Note 22 – Events Subsequent

Management of the Company has evaluated subsequent events through August 12, 2019, the date the financial statements were available to be issued to state regulators and subsequently on the Company's website. No events have occurred subsequent to the date of the Statements of Financial Position and before the date of evaluation that would require disclosure.

Note 23 – Reinsurance - No change**Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination**

a – d. No change

e. The Company does not write any accident and health insurance premium that is subject to the Affordable Care Act risk-sharing provisions.

Note 25 – Change in Incurred Losses and Loss Adjustment Expenses

There was no increase to reserves in 2019 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which considered corrections of prior year errors.

Note 26 – Intercompany Pooling Arrangements - No change**Note 27 – Structured Settlements** - No change**Note 28 – Health Care Receivables** - No change**Note 29 – Participating Policies** - No change**Note 30 – Premium Deficiency Reserves** - No change**Note 31 – Reserves for Life Contracts and Annuity Contracts** - No change**Note 32 – Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics** - No change**Note 33 – Premium and Annuity Considerations Deferred and Uncollected** - No change**Note 34 – Separate Accounts** - No change**Note 35 – Loss/Claim Adjustment Expenses** - No change

GENERAL INTERROGATORIES

PART 1 - COMMON INTERROGATORIES

GENERAL

- 1.1 Did the reporting entity experience any material transactions requiring the filing of Disclosure of Material Transactions with the State of Domicile, as required by the Model Act? Yes No
- 1.2 If yes, has the report been filed with the domiciliary state? Yes No
- 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
- 2.2 If yes, date of change:
- 3.1 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 No
If yes, complete Schedule Y, Parts 1 and 1A.
- 3.2 Have there been any substantial changes in the organizational chart since the prior quarter end? Yes No
- 3.3 If the response to 3.2 is yes, provide a brief description of those changes.
MM Asset Management Holding LLC, an indirect wholly owned subsidiary of Massachusetts Mutual Life Insurance Company, sold its retail asset management affiliate, OppenheimerFunds Inc.
- 3.4 Is the reporting entity publicly traded or a member of a publicly traded group? Yes No
- 3.5 If the response to 3.4 is yes, provide the CIK (Central Index Key) code issued by the SEC for the entity/group.
- 4.1 Has the reporting entity been a party to a merger or consolidation during the period covered by this statement? Yes No
If yes, complete and file the merger history data file with the NAIC for the annual filing corresponding to this period.
- 4.2 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 Name of Entity	2 NAIC Company Code	3 State of Domicile

5. If the reporting entity is subject to a management agreement, including third-party administrator(s), managing general agent(s), attorney-in-fact, or similar agreement, have there been any significant changes regarding the terms of the agreement or principals involved? Yes No N/A
If yes, attach an explanation.
- 6.1 State as of what date the latest financial examination of the reporting entity was made or is being made. 12/31/2014
- 6.2 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
- 6.3 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
- 6.4 By what department or departments?
Commonwealth of Massachusetts Division of Insurance
- 6.5 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
- 6.6 Have all of the recommendations within the latest financial examination report been complied with? Yes No N/A
- 7.1 Has this 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
- 7.2 If yes, give full information:
- 8.1 Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board? Yes No
- 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 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 Global Advisers Limited	London, UK				YES
Barings Securities, LLC	Charlotte, NC				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
The MassMutual Trust Company, FSB	Enfield, CT		YES		

GENERAL INTERROGATORIES

- 9.1 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.
- 9.11 If the response to 9.1 is No, please explain:
- 9.2 Has the code of ethics for senior managers been amended? Yes [] No [X]
- 9.21 If the response to 9.2 is Yes, provide information related to amendment(s).
- 9.3 Have any provisions of the code of ethics been waived for any of the specified officers? Yes [] No [X]
- 9.31 If the response to 9.3 is Yes, provide the nature of any waiver(s).

FINANCIAL

- 10.1 Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? Yes [X] No []
- 10.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: \$0

INVESTMENT

- 11.1 Were any of the stocks, bonds, or other assets of the reporting entity loaned, placed under option agreement, or otherwise made available for use by another person? (Exclude securities under securities lending agreements.) Yes [X] No []
- 11.2 If yes, give full and complete information relating thereto:
 Repurchase agreements, Letter stock or securities restricted as to sale - excluding FHLB Capital Stock, FHLB Capital Stock, On deposit with states, pledged as collateral - excluding collateral pledged to an FHLB and Pledged as collateral to FHLB - including assets backing funding agreements
12. Amount of real estate and mortgages held in other invested assets in Schedule BA: \$1,922,676,875
13. Amount of real estate and mortgages held in short-term investments: \$
- 14.1 Does the reporting entity have any investments in parent, subsidiaries and affiliates? Yes [X] No []
- 14.2 If yes, please complete the following:
- | | 1 | 2 |
|---|---|--|
| | Prior Year-End
Book/Adjusted
Carrying Value | Current Quarter
Book/Adjusted
Carrying Value |
| 14.21 Bonds | \$ 7,526,017,124 | \$ 6,451,448,491 |
| 14.22 Preferred Stock | \$ | \$ |
| 14.23 Common Stock | \$ 12,013,931,427 | \$ 15,885,304,751 |
| 14.24 Short-Term Investments | \$ | \$ |
| 14.25 Mortgage Loans on Real Estate | \$ | \$ |
| 14.26 All Other | \$ 5,685,872,120 | \$ 5,880,464,131 |
| 14.27 Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26) | \$ 25,225,820,671 | \$ 28,217,217,373 |
| 14.28 Total Investment in Parent included in Lines 14.21 to 14.26 above | \$ | \$ |
- 15.1 Has the reporting entity entered into any hedging transactions reported on Schedule DB? Yes [X] No []
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? Yes [X] No []
 If no, attach a description with this statement.
16. For the reporting entity's security lending program, state the amount of the following as of the current statement date:
- 16.1 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 16.2 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2 \$
- 16.3 Total payable for securities lending reported on the liability page. \$

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company
GENERAL INTERROGATORIES

17. 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 [X] No []
- 17.1 For all agreements that comply with the requirements of the NAIC Financial Condition Examiners Handbook, complete the following:

1 Name of Custodian(s)	2 Custodian 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

- 17.2 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)

- 17.3 Have there been any changes, including name changes, in the custodian(s) identified in 17.1 during the current quarter? Yes [] No [X]

- 17.4 If yes, give full information relating thereto:

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

- 17.5 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
Apollo Aviation Group Capital Markets LLC	U.....
Invesco Ltd.	U.....
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.....

- 17.5097 For those firms/individuals listed in the table for Question 17.5, 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]

- 17.5098 For firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") listed in the table for Question 17.5, does the total assets under management aggregate to more than 50% of the reporting entity's assets? Yes [] No [X]

- 17.6 For those firms or individuals listed in the table for 17.5 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
168456	Apollo Aviation Group Capital Markets LLC		SEC	NO.....
110363	Invesco Ltd.		SEC	DS.....
106006	Barings LLC	R6ZXK5P01NP6HXS1S07	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	R6ZXK5P01NP6HXS1S07	SEC	NO.....
162264	Jefferies Finance LLC		SEC	DS.....
155480	20 Gates Management, LLC		SEC	NO.....

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

- 18.2 If no, list exceptions:

At 6/30/2019, 107 issues 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 \$1,733,578,833 or 1.44% of all assets.

19. By self-designating 5GI securities, the reporting entity is certifying the following elements for each self-designated 5GI security:
- Documentation necessary to permit a full credit analysis of the security does not exist or an NAIC CRP credit rating for an FE or PL security is not available.
 - Issuer or obligor is current on all contracted interest and principal payments.
 - The insurer has an actual expectation of ultimate payment of all contracted interest and principal.

Has the reporting entity self-designated 5GI securities? Yes [X] No []

20. By self-designating PLGI securities, the reporting entity is certifying the following elements of each self-designated PLGI security:

- The security was purchased prior to January 1, 2018.
- The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
- The NAIC Designation was derived from the credit rating assigned by an NAIC CRP in its legal capacity as a NRSRO which is shown on a current private letter rating held by the insurer and available for examination by state insurance regulators.
- The reporting entity is not permitted to share this credit rating of the PL security with the SVO.

Has the reporting entity self-designated PLGI securities? Yes [] No [X]

GENERAL INTERROGATORIES

PART 2 - LIFE AND ACCIDENT AND HEALTH COMPANIES/FRATERNAL BENEFIT SOCIETIES

Life and Accident Health Companies/Fraternal Benefit Societies:

1. Report the statement value of mortgage loans at the end of this reporting period for the following categories:
- | | 1
Amount |
|---|------------------------|
| 1.1 Long-Term Mortgages In Good Standing | |
| 1.11 Farm Mortgages | \$ |
| 1.12 Residential Mortgages | \$1,513,206,319 |
| 1.13 Commercial Mortgages | \$22,760,450,619 |
| 1.14 Total Mortgages in Good Standing | \$24,273,656,938 |
| 1.2 Long-Term Mortgages In Good Standing with Restructured Terms | |
| 1.21 Total Mortgages in Good Standing with Restructured Terms | \$ |
| 1.3 Long-Term Mortgage Loans Upon which Interest is Overdue more than Three Months | |
| 1.31 Farm Mortgages | \$ |
| 1.32 Residential Mortgages | \$ |
| 1.33 Commercial Mortgages | \$ |
| 1.34 Total Mortgages with Interest Overdue more than Three Months | \$ |
| 1.4 Long-Term Mortgage Loans in Process of Foreclosure | |
| 1.41 Farm Mortgages | \$ |
| 1.42 Residential Mortgages | \$ |
| 1.43 Commercial Mortgages | \$ |
| 1.44 Total Mortgages in Process of Foreclosure | \$ |
| 1.5 Total Mortgage Loans (Lines 1.14 + 1.21 + 1.34 + 1.44) (Page 2, Column 3, Lines 3.1 + 3.2) | \$24,273,656,938 |
| 1.6 Long-Term Mortgages Foreclosed, Properties Transferred to Real Estate in Current Quarter | |
| 1.61 Farm Mortgages | \$ |
| 1.62 Residential Mortgages | \$ |
| 1.63 Commercial Mortgages | \$ |
| 1.64 Total Mortgages Foreclosed and Transferred to Real Estate | \$ |
| 2. Operating Percentages: | |
| 2.1 A&H loss percent | 60.931 % |
| 2.2 A&H cost containment percent | 1.000 % |
| 2.3 A&H expense percent excluding cost containment expenses | 45.005 % |
| 3.1 Do you act as a custodian for health savings accounts? | Yes [] No [X] |
| 3.2 If yes, please provide the amount of custodial funds held as of the reporting date | \$ |
| 3.3 Do you act as an administrator for health savings accounts? | Yes [] No [X] |
| 3.4 If yes, please provide the balance of the funds administered as of the reporting date | \$ |
| 4. Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states? | Yes [X] No [] |
| 4.1 If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of domicile of the reporting entity? | Yes [] No [] |

Fraternal Benefit Societies Only:

- 5.1 In all cases where the reporting entity has assumed accident and health risks from another company, provisions should be made in this statement on account of such reinsurances for reserve equal to that which the original company would have been required to establish had it retained the risks. Has this been done?
- Yes [] No [] N/A []
- 5.2 If no, explain:
.....
- 6.1 Does the reporting entity have outstanding assessments in the form of liens against policy benefits that have increased surplus?
- Yes [] No []
- 6.2 If yes, what is the date(s) of the original lien and the total outstanding balance of liens that remain in surplus?

Date	Outstanding Lien Amount
.....

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - CEDED REINSURANCE

Showing All New Reinsurance Treaties - Current Year to Date

1	2	3	4	5	6	7	8	9
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Domiciliary Jurisdiction	Type of Reinsurance Ceded	Type of Reinsurer	Certified Reinsurer Rating (1 through 6)	Effective Date of Certified Reinsurer Rating
.66346	58-0828824	.01/23/2019	Munich American Reassurance (MUV5)	GA	CO/I	Authorized		
.66346	58-0828824	.01/23/2019	Munich American Reassurance (MUV6)	GA	CO/I	Authorized		
.66346	58-0828824	.01/23/2019	Munich American Reassurance (MUV7)	GA	CO/I	Authorized		
.66346	58-0828824	.01/23/2019	Munich American Reassurance (MUV8)	GA	CO/I	Authorized		
.74900	63-0483783	.12/05/2018	Partner Re (PRPK)	AR	YRT/I	Authorized		
.97071	13-3126819	.01/01/2018	SCOR Global Life USA Reins Co (SUE9)	DE	YRT/G	Authorized		
.97071	13-3126819	.01/23/2019	SCOR Global Life USA Reins Co (SUV5)	DE	CO/I	Authorized		
.97071	13-3126819	.01/23/2019	SCOR Global Life USA Reins Co (SUV6)	DE	CO/I	Authorized		
.97071	13-3126819	.01/23/2019	SCOR Global Life USA Reins Co (SUV7)	DE	CO/I	Authorized		
.97071	13-3126819	.01/23/2019	SCOR Global Life USA Reins Co (SUV8)	DE	CO/I	Authorized		
.82627	06-0839705	.01/01/2018	Swiss Re Life & Health America (SRE9)	MO	YRT/G	Authorized		
.82627	06-0839705	.01/23/2019	Swiss Re Life & Health America (SRV5)	MO	CO/I	Authorized		
.82627	06-0839705	.01/23/2019	Swiss Re Life & Health America (SRV6)	MO	CO/I	Authorized		
.82627	06-0839705	.01/23/2019	Swiss Re Life & Health America (SRV7)	MO	CO/I	Authorized		
.82627	06-0839705	.01/23/2019	Swiss Re Life & Health America (SRV8)	MO	CO/I	Authorized		

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company
SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

1	Life Contracts		Direct Business Only					
	2	3	4	5	6	7		
States, Etc.	Active Status (a)	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	19,686,393	16,406,858	3,465,455	25,958,861	65,517,567	21,234,060
2. Alaska	AK	L	1,312,319	1,945,597	171,776	2,715,133	6,144,825	366,888
3. Arizona	AZ	L	36,973,257	66,377,168	5,112,663	10,624,923	119,088,011	20,877,964
4. Arkansas	AR	L	11,298,064	16,035,725	1,208,734	842,435	29,384,958	4,234,305
5. California	CA	L	532,976,741	219,452,214	31,567,947	246,789,147	1,030,786,049	208,117,872
6. Colorado	CO	L	44,184,649	50,725,209	5,250,543	6,326,478	106,486,879	17,258,914
7. Connecticut	CT	L	91,814,646	55,387,062	9,942,880	65,795,674	222,940,262	24,374,252
8. Delaware	DE	L	21,831,939	8,357,420	902,311	4,879,244	35,970,914	853,591,600
9. District of Columbia	DC	L	11,382,181	3,910,024	2,054,296	26,450,698	43,797,199	2,826,612
10. Florida	FL	L	250,721,386	148,302,951	16,089,747	134,379,560	549,493,644	148,639,412
11. Georgia	GA	L	92,402,979	84,123,878	11,740,911	76,373,949	264,641,717	56,602,533
12. Hawaii	HI	L	11,786,386	7,728,755	1,494,618	3,057,352	24,067,111	22,629,116
13. Idaho	ID	L	14,307,452	2,394,424	753,620	4,871,315	22,326,811	6,980,449
14. Illinois	IL	L	311,743,734	88,566,139	12,461,136	271,072,908	683,843,917	48,835,551
15. Indiana	IN	L	51,973,703	26,538,910	4,720,963	31,577,728	114,811,304	31,284,653
16. Iowa	IA	L	21,022,459	11,907,862	1,900,061	108,040,218	142,870,600	12,284,905
17. Kansas	KS	L	21,359,719	9,512,708	2,779,153	22,566,028	56,217,608	3,115,381
18. Kentucky	KY	L	12,917,435	19,447,125	2,511,525	29,916,742	64,792,827	17,550,947
19. Louisiana	LA	L	21,326,317	22,676,958	3,171,705	19,740,313	66,915,293	24,173,529
20. Maine	ME	L	13,915,959	9,910,350	1,292,598	3,339,006	28,457,913	2,897,325
21. Maryland	MD	L	81,115,673	29,363,515	13,833,858	122,682,088	226,995,134	36,902,971
22. Massachusetts	MA	L	100,551,068	277,844,485	16,177,798	390,000,610	784,573,961	38,890,888
23. Michigan	MI	L	64,739,717	76,624,921	7,363,720	125,290,055	274,018,413	42,157,508
24. Minnesota	MN	L	28,420,842	27,167,888	4,600,276	154,639,690	214,828,696	55,798,016
25. Mississippi	MS	L	34,427,961	15,634,271	5,125,284	1,811,024	56,998,540	9,873,236
26. Missouri	MO	L	34,532,590	20,756,442	5,298,634	58,051,114	118,638,780	19,919,167
27. Montana	MT	L	8,659,798	4,673,257	760,752	4,069,493	18,163,300	7,973,148
28. Nebraska	NE	L	18,272,221	21,732,407	2,944,813	66,497,393	109,446,834	12,434,277
29. Nevada	NV	L	22,342,810	10,057,694	1,680,195	34,052,400	68,133,099	8,867,594
30. New Hampshire	NH	L	14,760,919	17,536,050	2,095,728	9,809,779	44,202,476	10,853,775
31. New Jersey	NJ	L	203,492,616	85,450,229	19,794,513	528,514,702	837,252,060	58,945,464
32. New Mexico	NM	L	10,343,753	15,131,941	1,220,295	527,694	27,223,683	4,318,752
33. New York	NY	L	600,177,828	246,825,763	43,414,267	412,351,454	1,302,769,312	134,139,998
34. North Carolina	NC	L	76,069,024	80,736,964	15,269,374	36,769,138	208,844,500	67,994,053
35. North Dakota	ND	L	7,761,725	2,793,903	313,495	3,801,242	14,670,365	6,507,850
36. Ohio	OH	L	70,681,966	80,548,723	8,272,049	163,175,343	322,678,081	54,935,251
37. Oklahoma	OK	L	40,491,316	12,193,869	3,855,558	35,147,134	91,687,877	20,215,066
38. Oregon	OR	L	16,749,286	16,602,038	2,505,901	10,710,934	46,568,159	13,434,331
39. Pennsylvania	PA	L	149,685,093	103,529,108	19,394,472	207,767,468	480,376,141	18,178,795
40. Rhode Island	RI	L	9,650,554	67,162,185	1,601,555	26,077,295	104,491,589	8,881,301
41. South Carolina	SC	L	38,714,437	26,467,002	7,566,091	8,913,256	81,660,786	32,602,030
42. South Dakota	SD	L	3,286,729	(248,427)	358,797	1,030,280	4,427,379	1,543,590
43. Tennessee	TN	L	56,096,264	38,421,102	8,784,813	103,477,033	206,779,212	19,048,186
44. Texas	TX	L	206,310,352	148,182,210	23,802,151	111,717,940	490,012,653	162,322,149
45. Utah	UT	L	20,909,181	14,195,095	1,964,162	4,075,054	41,143,492	17,336,338
46. Vermont	VT	L	5,859,540	9,605,727	745,549	8,872,417	25,083,233	1,119,482
47. Virginia	VA	L	102,517,942	88,988,073	15,024,106	98,100,478	304,630,599	43,929,538
48. Washington	WA	L	41,251,878	39,424,906	5,613,487	38,718,946	125,009,217	5,877,763
49. West Virginia	WV	L	7,285,168	6,893,309	691,107	18,500,321	33,369,905	36,520,757
50. Wisconsin	WI	L	25,816,959	27,409,758	3,305,849	37,714,655	94,247,221	4,788,352
51. Wyoming	WY	L	3,138,860	2,371,512	280,912	(41,749)	5,749,535	1,695,790
52. American Samoa	AS	N						
53. Guam	GU	N	750	750	2,616		4,116	34,780
54. Puerto Rico	PR	L	33,108,669	2,237,598	4,523,999	9,892,708	49,762,974	755,763
55. U.S. Virgin Islands	VI	N	5,125	19,714	10,221		35,060	18,300
56. Northern Mariana Islands	MP	N						
57. Canada	CAN	N	617,369	183,859	49,794	414	851,436	61,937
58. Aggregate Other Aliens	OT	XXX	7,741,340	68,862	270,123		8,080,325	
59. Subtotal	XXX	3,720,525,041	2,486,294,040	367,108,956	3,928,035,515	10,501,963,552	2,486,752,464	
90. Reporting entity contributions for employee benefits plans	XXX							
91. Dividends or refunds applied to purchase paid-up additions and annuities	XXX	650,087,441	866,086			650,953,527		
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	13,820,038		6,060,221		19,880,259		
94. Aggregate or other amounts not allocable by State	XXX	25,457,535				25,457,535		
95. Totals (Direct Business)	XXX	4,409,890,055	2,487,160,126	373,169,177	3,928,035,515	11,198,254,873	2,486,752,464	
96. Plus Reinsurance Assumed	XXX	24,782,560	9,811,422		683,705,771	718,299,753	674,124,918	
97. Totals (All Business)	XXX	4,434,672,615	2,496,971,548	373,169,177	4,611,741,286	11,916,554,626	3,160,877,382	
98. Less Reinsurance Ceded	XXX	505,544,648	899,136,084	44,776,443		1,449,457,175		
99. Totals (All Business) less Reinsurance Ceded	XXX	3,929,127,967	1,597,835,464	328,392,734	4,611,741,286	10,467,097,451	3,160,877,382	
DETAILS OF WRITE-INS								
58001. ZZZ Other Alien	XXX	7,741,340	68,862	270,123		8,080,325		
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	7,741,340	68,862	270,123		8,080,325		
9401. Reinvested Net Nonforfeiture Option Proceeds	XXX	25,457,535				25,457,535		
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	25,457,535				25,457,535		

(a) Active Status Counts:

L - Licensed or Chartered - Licensed Insurance carrier or domiciled RRG.....52
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.....5

R - Registered - Non-domiciled RRGs.....
Q - Qualified - Qualified or accredited reinsurer.....

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>
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY	04-1590850	65935	Massachusetts
Direct & Indirect Owned Subsidiaries:			
C.M. Life Insurance Company	06-1041383	93432	Connecticut
MML Bay State Life Insurance Company	43-0581430	70416	Connecticut
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		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
MSP-SC, LLC	04-1590850		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity LLC	04-1590850		Delaware
MassMutual Intellectual Property LLC	04-1590850		Delaware
Trad Investments I LLC	None		Delaware
EM Opportunities LLC	None		Delaware
MassMutual MCAM Insurance Company, Inc.	None		Vermont
Jefferies Finance LLC	27-0105644		Delaware
APEX Credit Partners LLC	None		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Fund III LLC	None		Delaware
JFIN Asset Management LLC	None		Delaware
JFAM GP LLC	None		Delaware
JFAM GP LP	None		Delaware
JFAM Loan Fund, LP	None		Delaware
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II 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 Revolver Fund, L.P.	None		Delaware
JFIN CLO 2007 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 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
JFIN CLO 2015 Ltd.*	None		Cayman Islands
Apex Credit CLO 2015-II Ltd.*	None		Cayman Islands
JFIN Revolver CLO 2015 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2018 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019 Ltd.	None		Cayman Islands
JFIN Revolver Fund, L.P.	None		Delaware
Apex Credit CLO 2016 Ltd.	None		Cayman Islands
Apex Credit CLO 2017 Ltd.	None		Cayman Islands
Apex Credit CLO 2017-II Ltd.	None		Cayman Islands
MassMutual Mortgage Lending LLC	None		Delaware
MassMutual Retirement Services, LLC	04-1590850		Delaware
MM Copper Hill Road LLC	04-1590850		Delaware
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2013-A	90-1005837		Delaware
MMAF Equipment Finance LLC 2014-A	36-4785301		Delaware
MMAF Equipment Finance LLC 2015-A	38-3969560		Delaware
MMAF Equipment Finance LLC 2016-A	32-0489588		Delaware
MMAF Equipment Finance LLC 2017-A	35-2590691		Delaware
MMAF Equipment Finance LLC 2017-B	32-0546197		Delaware
MMAF Equipment Finance LLC 2018-A	82-5335801		Delaware
MMAF Equipment Finance LLC 2019-A	83-3722640		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
MassMutual Holding LLC	04-2854319		Delaware
Fern Street LLC	37-1732913		Delaware
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina

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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 Capital Partners LLC	04-1590850		Delaware
MassMutual Ventures Holding LLC	None		Delaware
Crane Venture Partners LLP	None		United Kingdom
MassMutual Ventures Management LLC	None		Delaware
MassMutual Ventures SEA Management Private Limited	None		Singapore
MassMutual Ventures Southeast Asia I LLC	None		Delaware
MassMutual Ventures UK LLC	None		Delaware
MassMutual Ventures US I LLC	47-1296410		Delaware
MassMutual Ventures US II LLC	None		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
LifeScore Labs, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
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
Barings Investment Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Barings Overseas Investment Fund Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC
Barings Japan Limited	98-0236449		Japan
Baring Asset Management (Australia) Pty Limited	98-0457456		Australia
Barings Investment Advisors (Hong Kong) Limited	None		Hong Kong, Special Administrative Region of China
Barings Australia Holding Company Pty Ltd	None		Australia
Barings Australia Pty Ltd	98-0457456		Australia
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
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings Europe Limited	None		United Kingdom
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 GmbH	98-1194368		Germany

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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 Asset Management Limited	98-0241935		United Kingdom
Barings Global Advisors Limited	98-1012393		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Barings European Direct Lending 1 GP LLP	None		United Kingdom
Baring International Investment Limited	98-0457328		United Kingdom
Baring International Investment Management Holdings	98-0457587		United Kingdom
Baring Asset Management UK Holdings Limited	98-0457576		United Kingdom
Baring Asset Management GmbH	98-0465031		Germany
Baring International Fund Managers (Ireland) Limited	98-0524272		Ireland
Baring Asset Management Switzerland Sàrl	None		Switzerland
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 Investment Fund (LUX) GP S.à. r.l.	None		Luxembourg
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 (U.K.) Limited	98-0432153		United Kingdom
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
Chassis Acquisition Holding LLC	81-2244465		Delaware
CRA Aircraft Holding LLC*	81-4258759		Delaware
Aland Royalty Holdings LP	None		Delaware
Intermodal Holding II LLC	46-2344300		Delaware
Milestone Acquisition Holding, LLC.	47-3055009		Delaware
Novation Companies, Inc.	None		Maryland
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
EIP Holdings I, LLC	None		Delaware
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
U.S. Pharmaceuticals Holdings I, LLC	46-0687392		Delaware
U.S. Pharmaceuticals Holdings II, LLC	47-5436800		Delaware
Validus Pharmaceuticals LLC	None		Delaware
VGS Acquisition Holding, LLC	None		Delaware
Aland Royalty GP, LLC	None		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>
BAI Funds SLP, LLC	None		Delaware
BAI GP, LLC	None		Delaware
Barings Alternative Investments SLP, LLC	None		Delaware
Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware
Barings Global Investment Funds (U.S.) Management LLC	04-1590850		Delaware
Babson Global Loan Feeder Management, LLC	None		Delaware
Barings ABIF SLP, LLC	None		Delaware
Barings CLO Investment Partners GP, LLC	None		Delaware
Barings Core Property Fund GP LLC	None		Delaware
Barings Direct Lending GP Ltd.	None		Cayman Islands
Barings Global Energy Infrastructure Advisors, LLC	None		Delaware
Barings Global Real Assets Fund GP, LLC	None		Delaware
Barings Multi Asset Income Fund	None		Hong Kong
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings/LAZ Parking Fund GP LLC	None		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands
BRECS VII GP LLC	None		Delaware
CCM Fund I REIT Manager LLC	None		Delaware
CEMF I GP LLC	None		Delaware
CHY Venture GP LLC	None		Delaware
Cornerstone Hotel Fund GP, LLC	None		Delaware
CREF X GP LLC	None		Delaware
CREF VIII GP, LLC	None		Delaware
Great Lakes III GP, LLC	04-1590850		Delaware
Lake Jackson LLC	None		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 II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
SBNP SIA II LLC	None		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware
Invesco Ltd.	None		Bermuda
MassMutual International LLC	04-3313782		Delaware
MassMutual Solution LLC	None		Delaware
Yunfeng Financial Group Limited	None		Hong Kong
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MassMutual Holding MSC, Inc.	04-3341767		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>
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
Other Affiliates & Funds:			
100 w. 3 rd Street LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	82-2432216		Delaware
300 South Tryon LLC	04-1590850		Delaware
54 West Capital LLC	20-3887968		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 Asset-Based Income Fund (US) LP	36-4868350		Delaware
Barings Emerging Markets Corporate Bond Fund	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. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	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
Barings CLO Ltd. 2017-I	None		Cayman Islands
Barings CLO 2018-III	None		Cayman Islands
Barings CLO 2018-IV	None		Cayman Islands
Barings CLO 2019-I	None		Cayman Islands
Barings CLO 2019-II	98-1473665		Cayman Islands
Barings CLO 2019-III	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
Barings Global Em. Markets Equity Fund	82-5330194		North Carolina
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Global Inv. Grade Strat Fund	None		Ireland
Barings Global Private Loan Fund	None		Luxembourg
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings Middle Market CLO 2017-I Ltd & LLC	None		Cayman Islands
Barings Middle Market CLO 2018-I	None		Cayman Islands

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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 North American Private Loan Fund LP	38-4010344		Delaware
Barings RE Credit Strategies VII LP	98-1332384		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
Braemar Energy Ventures I, L.P. *	None		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg
Benchmark 2018-B2 Mortgage Trust	38-4059932		New York
Benchmark 2018-B4	None		New York
Benchmark 2018-B8	38-4096530		New York
Cornerstone High Yield Venture LP	36-4770946		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
Cornerstone Permanent Mortgage Fund III LLC	35-2531693		Massachusetts
Duchess VII CLO B.V.	None		United Kingdom
E-Wise Land Venture LLC	20-3887968		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012		New York
JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059		New York
Kazwell Realty Partners LLC	20-3887968		Delaware
KKR-MM Vector LP	82-1512591		Delaware
Marco Hotel LLC	46-4255307		Delaware
HB Naples Golf Owner LLC	45-3623262		Delaware
MM Debt Participations LLC	81-3000420		Delaware
Oakley Grove Development LLC	20-3887968		Delaware
Old Pasco Properties LLC	20-3887968		Delaware
RB Apartments LLC	82-4411267		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
Somerset Special Opportunities Fund L.P.*	20-8856877		Delaware
South Pasco Properties LLC	20-3887968		Delaware
Ten Fan Pier Boulevard LLC	35-2553915		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

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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>
Tower Square Capital Partners IV-A, L.P.	80-0920367		Delaware
Trailside MM Member LLC*	04-1590850		Delaware
Washington Gateway Two LLC*	83-1325764		Delaware
Washington Gateway Three LLC*	32-0574045		Delaware
West 46 th Street Hotel LLC	05-1590850		Delaware
Barings Affiliates & Funds:			
Barings Emerging Markets Debt Blended Total Return Fund	None		Ireland
Barings Emerging Markets Debt Short Duration Fund	None		Ireland
Barings Emerging Markets Sovereign Debt 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 Global High Yield Fund	47-3790192		Massachusetts
Barings Total Return Bond Fund	47-3734770		Massachusetts
Barings U.S. High Yield Fund	47-3801860		Massachusetts
Great Lakes II LLC*	71-1018134		Delaware
Barings Real Estate Affiliates & Funds:			
Wood Creek Venture Fund LLC	04-1590850		Delaware
50 Liberty LLC*	36-4823011		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
Budapester Strasse LLC	81-4382111		Delaware
Calgary Railway Holding LLC*	82-2285211		Delaware
Combrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone California Mortgage Fund III 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
Cornerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA Madison Member LLC	81-0890084		Delaware
CCB Montford Park LLC*	82-1563809		Delaware
Danville Riverwalk Venture, LLC	82-2783393		Delaware
Fan Pier Development LLC*	20-3347091		Delaware
Farringdon London Holdings LLC*	46-3880526		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
MM Island Member LLC	04-1590850		Delaware
NoHo West Venture LLC	83-0881588		Delaware
PACO France Logistics LLC	04-1590850		Delaware
PACO France Logistics 2 LLC	04-1590850		Delaware
PACO France Logistics 3 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>
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
Sawgrass Village Shopping Center LLC*	27-2977720		Delaware
Spain Avalon Holding LLC	04-1590850		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Twenty Two Liberty LLC*	35-2484550		Massachusetts
UK LIW Manager LLC	45-4606547		Delaware
UK LIW Member LLC	45-4606547		Delaware
Unna, Dortmund Holding LLC	82-3250684		Delaware
Via Ceresio Milan LLC	82-3281588		Delaware
Washington Gateway Apartments Venture LLC*	45-5401109		Delaware
Waterloo London Holdings LLC	47-1993493		Delaware
WeHo Domain LLC*	46-3122029		Delaware
Ygnatio Valley Funding	20-5481477		Delaware
MassMutual Premier Funds:			
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
MassMutual Select Funds:			
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
MassMutual Select T. Rowe Price Retirement 2005 Fund	82-3347422		Massachusetts
MassMutual Select T. Rowe Price Retirement 2010 Fund	82-3355639		Massachusetts
MassMutual Select T. Rowe Price Retirement 2015 Fund	82-3382389		Massachusetts
MassMutual Select T. Rowe Price Retirement 2020 Fund	82-3396442		Massachusetts
MassMutual Select T. Rowe Price Retirement 2025 Fund	82-3417420		Massachusetts
MassMutual Select T. Rowe Price Retirement 2030 Fund	82-3430358		Massachusetts
MassMutual Select T. Rowe Price Retirement 2035 Fund	82-3439837		Massachusetts
MassMutual Select T. Rowe Price Retirement 2040 Fund	82-3451779		Massachusetts
MassMutual Select T. Rowe Price Retirement 2045 Fund	82-3472295		Massachusetts
MassMutual Select T. Rowe Price Retirement 2050 Fund	82-3481715		Massachusetts
MassMutual Select T. Rowe Price Retirement 2055 Fund	82-3502011		Massachusetts
MassMutual Select T. Rowe Price Retirement 2060 Fund	82-3525148		Massachusetts
MassMutual Select T. Rowe Price Retirement Balanced Fund	82-3533944		Massachusetts

*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>
MML Series Investment Funds:			
MML Series International Equity Fund	46-4257056		Massachusetts
MML Series Investment Funds II:			
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
MassMutual RetireSMART Funds:			
MassMutual RetireSMART 2055 Fund	46-3289207		Massachusetts
MassMutual RetireSMART 2060 Fund	47-5326235		Massachusetts
MassMutual RetireSMART Conservative Fund	45-1618155		Massachusetts
MassMutual RetireSMART Growth Fund	45-1618222		Massachusetts
MassMutual RetireSMART In Retirement Fund	03-0532464		Massachusetts
MassMutual RetireSMART Moderate Fund	45-1618262		Massachusetts
MassMutual RetireSMART Moderate Growth Fund	45-1618046		Massachusetts

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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			Massachusetts Mutual Life Insurance Company (MMLIC)	MA	RE	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	GM 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				MML Bay State Life Insurance Company	CT	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							CML Special Situations Investor LLC	DE	DS	C.M. 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	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	C.M. Life Insurance Company	Ownership	0.000	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			04-1590850				MSP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							EM Opportunities LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual MCAM Insurance Company, Inc.	VT	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Insurance Road LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Trad Private Equity LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Intellectual Property LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000							Trad Investments I LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			27-0105644				Jefferies Finance LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		1
.0000							MassMutual Mortgage Lending LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Apex Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN GP Adviser LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Fund, L.P.	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							JFAM GP LLC	DE	NIA	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
.0000							JFAM GP LP	DE	NIA	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
.0000							JFAM Loan Fund, LP	DE	NIA	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings II 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 Fund, L.P.	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		

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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							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-II Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.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 Revolver Fund, L.P.	.DE	NIA	Jefferies Finance LLC	Ownership	58.000	MMLIC		
.0000							Apex Credit CLO 2015-II Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	33.000	MMLIC		
.0000							Apex Credit CLO 2015-II Ltd.	.CYM	NIA	Apex Credit Partners LLC	Ownership	53.000	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 2017 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-II Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-III Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2018 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2019 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit CLO 2016 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit CLO 2017 Ltd.	.CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit CLO 2017-II 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			04-1590850				MM Copper Hill Road LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3356880				MML Distributors LLC	.MA	.DS	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLIC		
.0000			04-3356880				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			46-3238013				MML Strategic Distributors, LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1563535	2881445			The MassMutual Trust Company, FSB	.CT	.DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	.DS	Massachusetts Mutual Life Insurance Company	Ownership	99.600	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	.DS	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			90-1005837				MMAF Equipment Finance LLC 2013-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0001			36-4785301				MMAF Equipment Finance LLC 2014-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0002			38-3969560				MMAF Equipment Finance LLC 2015-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0003			32-0489588				MMAF Equipment Finance LLC 2016-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0004			35-2590691				MMAF Equipment Finance LLC 2017-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0005			32-0546197				MMAF Equipment Finance LLC 2017-B	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0006			82-5335801				MMAF Equipment Finance LLC 2018-A	.DE	.DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0007			83-3722640				MMAF Equipment Finance LLC 2019-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				MML Private Equity Fund Investor LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Private Equity Fund Investor LLC	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			04-1590850				MM Private Equity Intercontinental LLC	.DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			45-2738137				Pioneers Gate LLC	.DE	.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		

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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			37-1732913				Fern Street LLC	DE	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				MassMutual Capital Partners LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Holding LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Crane Venture Partners LLP	GBR	DS	MassMutual Holding LLC	Ownership	33.000	MMLIC		
.0000							MassMutual Ventures Management LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures SEA Management Private Limited	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia I LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures UK LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1296410				MassMutual Ventures US I LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US II 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				LifeScore Labs, LLC	MA	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				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				MMLISI Financial Alliances, LLC	DE	DS	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			45-4000072				MM Asset Management Holding LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			51-0504477				Barings LLC	DE	DS	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0524271				Baring Asset Management (Asia) Holdings Limited	HKG	DS	Barings LLC	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							Barings Investment Management (Shanghai) Limited	HKG	DS	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Overseas Investment Fund Management (Shanghai) Limited	HKG	DS	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000			98-0457707				Baring SICE (Taiwan) Limited	TWN	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0236449				Barings 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							Barings Investment Advisors (Hong Kong) Limited	HKG	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Australia Holding Company Pty Ltd	AUS	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457456				Barings Australia Pty Ltd	AUS	DS	Baring Australia Holding Company Pty Ltd	Ownership	100.000	MMLIC		
.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				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							Barings Europe Limited	GBR	DS	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							Barings Real Estate UK Holdings Limited	DE	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							BREAIE AIFM LLP	GBR	DS	Barings Real Estate UK Holdings Limited	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		

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.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 GmbH	.DEU	.DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0241935				Baring Asset Management Limited	.GBR	.DS	MassMutual Holdings (Bermuda) Limited	Ownership	100.000	MMLIC		
.0000			98-1012393				Barings Global Advisors Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							BCGSS 2 GP LLP	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings European Direct Lending 1 GP LLP	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457328				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			98-0524272				Baring International Fund Managers (Ireland) Limited	.IRL	.DS	Baring Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000							Baring Asset Management Switzerland Sarl	.CHE	.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							Barings GPC GP S.à. r.l	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Fund (LUX) GP S.à. r.l	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine GP III Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Almack Holding Partnership GP Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund II Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0432153				Barings (U.K.) Limited	.GBR	.DS	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital Holdings LLC	.DE	.DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital LLC	.MI	.DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multifamily Capital Corporation	.DE	.DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	.CA	.DS	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	30.000	MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	.DE	.NIA	Barings 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	Barings LLC	Influence		MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.700	MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	.DE	.NIA	Barings LLC	Management		MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.000	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	Barings LLC	Influence		MMLIC		
.0000							Novation Companies, Inc.	.MD	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	19.400	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	31.500	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	.DE	.NIA	Barings LLC	Influence		MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	.CT	.NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	66.700	MMLIC		

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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			81-4065378				Remington L & W Holdings LLC	CT	NIA	Barings LLC	Influence		MMLIC		
.0000							Tamiami Citurus, 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	Barings LLC	Influence		MMLIC		
.0000			46-0687392				US Pharmaceutical Holdings I, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			20-2970495				US Pharmaceutical Holdings II, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.400	MMLIC		
.0000			20-2970495				US Pharmaceutical Holdings II, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							EIP Holdings I, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	28.900	MMLIC		
.0000							EIP Holdings I, LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Validus Pharmaceuticals LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Aland Royalty GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI Funds SLP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Alternative Investments SLP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Asset-Based Income Fund (US) GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Barings Global Investment Funds (U.S.) 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 ABIF SLP, 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 Core Property Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Direct Lending GP Ltd.	CYM	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Energy Infrastructure Advisors, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Multi Asset Income Fund	HKG	DS	Barings LLC	Management		MMLIC		
.0000							Barings North American Private Loan Fund Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Real Assets Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings/LAZ Parking Fund GP 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							BRECS VII GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CCM Fund I REIT Manager LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CEMF I GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CHY Venture GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Cornerstone Hotel Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CREF X GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CREF VIII GP, 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							Lake Jackson 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							Mezzco Australia II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							RECSA-NY GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				SBNP SIA II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			04-1590850				Somerset Special Opportunities Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Invesco Ltd.	BMJ	DS	Massachusetts Mutual Life Insurance Company	Ownership	15.700	MMLIC	Y	
.0000			04-3313782				MassMutual International LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000							MassMutual Solution LLC	DE	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							Yunfeng Financial Group Limited	HKG	DS	MassMutual International LLC	Ownership	24.800	MMLIC		
.0000			04-2443240				MML Management Corporation	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000			04-3548444				MassMutual International Holding MSC, Inc.	MA	DS	MML Management Corporation	Ownership	100.000	MMLIC		
.0000			04-3341767				MassMutual 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			04-1590850				100 w. 3rd Street LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-2432216				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							Almack Mezzanine Fund I LP	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.400	MMLIC		
.0000							Almack Mezzanine Fund I LP	GBR	NIA	C.M. Life Insurance Company	Ownership	4.600	MMLIC		
.0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	72.900	MMLIC		
.0000							Almack Mezzanine Fund III LP	GBR	NIA	Massachusetts Mutual Life Insurance 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			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	12.000	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	C.M. Life Insurance Company	Ownership/Influence	1.200	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund			Massachusetts Mutual Life Insurance Company	Ownership/Influence	95.900	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	95.900	MMLIC		
.0000							Barings LLC	IRL	NIA	Massachusetts Mutual Life Insurance Company	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							Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	75.800	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.800	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Barings LLC	Management		MMLIC		

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.0000							Barings US High Yield Bond Fund	.JRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	44.500	MMLIC		
.0000							Barings US High Yield Bond Fund	.JRL	NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2013-I	.CYM	NIA	Barings LLC	Influence		MMLIC		3
.0000							Babson CLO Ltd. 2014-I	.CYM	NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2015-I	.CYM	NIA	Barings LLC	Influence		MMLIC		4
.0000							Babson CLO Ltd. 2015-II	.CYM	NIA	Barings LLC	Influence		MMLIC		5
.0000							Babson CLO Ltd. 2016-I	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2016-II	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO Ltd. 2017-I	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-III	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-IV	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-I	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1473665				Barings CLO 2019-II	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-III	.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							Massachusetts Mutual Life Insurance Company								
.0000			81-0841854				Barings CLO Investment Partners LP	.DE	NIA	Barings LLC	Ownership/Influence	99.300	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	58.900	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	.GBR	NIA	C.M. Life Insurance Company	Ownership	6.500	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	.GBR	NIA	Barings LLC	Management		MMLIC		
.0000			82-5330194				Barings Global Em. Markets Equity Fund	.NC	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Energy Infrastructure Fund I LP	.CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	95.300	MMLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	.CYM	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000							Barings Global Inv. Grade Strat Fund	.JRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Private Loan Fund	.LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	12.400	MMLIC		
.0000							Barings Global Private Loan Fund	.LUX	NIA	Barings LLC	Management		MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	Barings LLC	Ownership/Influence	40.900	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	C.M. Life Insurance Company	Ownership	7.200	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	.JRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	21.400	MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	.JRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Middle Market CLO 2017-I Ltd & LLC	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Middle Market CLO 2018-I	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Barings LLC	Ownership/Influence	47.900	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Barings LLC	Ownership/Influence	34.400	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Barings Asset Management Limited	Management		MMLIC		

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.0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	10.200	MMLIC		
.0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	89.300	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	1.300	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	MassMutual Holding LLC	Ownership/Influence	13.500	MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	C.M. Life Insurance Company	Ownership	0.900	MMLIC		
.0000							Barings European Core Property Fund SCSp	LUX	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			38-4059932				Benchmark 2018-B2 Mortgage Trust	NY	NIA	Barings LLC	Influence		MMLIC		
.0000							Benchmark 2018-B4	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4096530				Benchmark 2018-B8	NY	NIA	Barings LLC	Influence		MMLIC		
.0000							Cornerstone High Yield Venture LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	49.600	MMLIC		
.0000			36-4770946				Cornerstone High Yield Venture 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	13.300	MMLIC		
.0000			20-5578089				Barings Core Property Fund 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	24.200	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.700	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.800	MMLIC		
.0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NIA	Barings Real Estate Advisers LLC	Management		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			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	35.600	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Ownership	5.300	MMLIC		
.0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.300	MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			38-4041011				JPMCC Commercial Mortgage Securities Trust 2017-JP7	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4032059				JPMDB Commercial Mortgage Securities Trust 2017-C5	NY	NIA	Barings LLC	Influence		MMLIC		
.0000			20-3887968				Kazwell Realty Partners LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-1512591				KKR-MM Vector LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	62.100	MMLIC		
.0000			46-4255307				Marco Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-3623262				HB Naples Golf Owner 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			20-3887968				Oakley Grove Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		

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.0000			20-3887968				Old Pasco Properties LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-4411267				RB Apartments 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 CLO 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			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	59.000	MMLIC		
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	2.900	MMLIC		
.0000			20-3887968				South Pasco Properties LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			30-0336246				Tower Square Capital Partners II, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	22.400	MMLIC		
.0000			30-0336246				Tower Square Capital Partners II, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.900	MMLIC		
.0000			32-0160190				Tower Square Capital Partners II-A, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	85.000	MMLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	15.100	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	94.200	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			80-0920367				Tower Square Capital Partners IV-A, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	21.300	MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.600	MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.400	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	88.300	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.700	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.600	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	C.M. Life Insurance Company	Ownership	11.400	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							Babson Capital Loan Strategies Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		
.0000			47-3758432				Barings Emerging Markets Debt Blended Total Return Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	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		

STATEMENT AS OF JUNE 30, 2019 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			71-1018134				Great Lakes II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.200	MLLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	C.M. Life Insurance Company	Ownership	1.000	MLLIC		
.0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	MLLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.100	MLLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.800	MLLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.000	MLLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership	3.000	MLLIC		
.0000			81-4382111				Budapester Strasse LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MLLIC		
.0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund I LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund II LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund III LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.400	MLLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.600	MLLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	98.700	MLLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Barings LLC	Management		MLLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.800	MLLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Barings LLC	Management		MLLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	90.000	MLLIC		
.0000			82-1563809				CCB Montford Park LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.000	MLLIC		
.0000			82-1563809				CCB Montford Park LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.000	MLLIC		
.0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	60.000	MLLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.000	MLLIC		
.0000			46-3880526				Farrington London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.500	MLLIC		
.0000			46-3880526				Farrington London Holdings LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.500	MLLIC		
.0000			81-5360103				Landmark Manchester Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				MM Island Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	49.000	MLLIC		
.0000			83-0881588				NoHo West Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MLLIC		

STATEMENT AS OF JUNE 30, 2019 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			04-1590850				PACO France Logistics LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				PACO France Logistics 2 LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				PACO France Logistics 3 LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			82-3393166				Portland 400 Sixth Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MLLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence		MLLIC		
.0000			27-2977720				Savgrass Village Shopping Center LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.200	MLLIC		
.0000			27-2977720				Savgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MLLIC		
.0000			04-1590850				Spain Avalon Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			81-5273574				Three PW Office Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MLLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	65.000	MLLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	35.000	MLLIC		
.0000			45-4606547				UK LIW Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			45-4606547				UK LIW Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			82-3281588				Via Ceresio Milan LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	91.500	MLLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MLLIC		
.0000			47-1993493				Waterloo London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	77.400	MLLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	C.M. Life Insurance Company	Ownership	12.600	MLLIC		
.0000			20-5481477				Ygnatio Valley Funding	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			45-3168892				MassMutual Barings Dynamic Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MLLIC		
.0000			51-0529328		0000927972	0Q	MassMutual Premier Main Street Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	17.700	MLLIC		
.0000			26-3229251		0000927972	0Q	MassMutual Premier Strategic Emerging Markets Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.300	MLLIC		
.0000			04-3277550		0000927972	0Q	MassMutual Premier Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MLLIC		
.0000			14-1980900		0000916053	0Q	MassMutual Select Diversified International Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MLLIC		
.0000			01-0821120		0000916053	0Q	MassMutual Select Diversified Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	1.300	MLLIC		
.0000			04-3512593		0000916053	0Q	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MLLIC		
.0000			04-3513019		0000916053	0Q	MassMutual Select Large Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MLLIC		

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			42-1710935		0000916053	Q0	MassMutual Select Mid-Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.800	MMLIC		
.0000			02-0769954		0000916053	Q0	MassMutual Select Small Capital Value Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			04-3584140		0000916053	Q0	MassMutual Select Small Company Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.300	MMLIC		
.0000			82-3347422		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2005 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	7.700	MMLIC		
.0000			82-3355639		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2010 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3382389		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2015 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3396442		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2020 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3417420		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2025 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3430358		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2030 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3439837		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3451779		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2040 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3472295		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3481715		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2050 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3502011		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3525148		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			82-3533944		0000916053	Q0	MassMutual Select T. Rowe Price Retirement Balanced Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			46-4257056				MML Series International Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3517233				MML Series II Asset Momentum Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-3529636				MML Series II Dynamic Bond Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3544629				MML Series II Equity Rotation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.900	MMLIC		
.0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.100	MMLIC		
.0000			27-1933828		0000916053	Q0	MassMutual RetireSMART 2015 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			27-1933389		0000916053	Q0	MassMutual RetireSMART 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.200	MMLIC		
.0000			27-1932769		0000916053	Q0	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	12.800	MMLIC		
.0000			46-3289207		0000916053	Q0	MassMutual RetireSMART 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.700	MMLIC		
.0000			47-5326235		0000916053	Q0	MassMutual RetireSMART 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	71.600	MMLIC		
.0000			45-1618155		0000916053	Q0	MassMutual RetireSMART Conservative Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			45-1618222		0000916053	OQ	MassMutual RetireSMART Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			03-0532464		0000916053		MassMutual RetireSMART In Retirement Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	1.200	MMLIC		
.0000			45-1618262		0000916053	OQ	MassMutual RetireSMART Moderate Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			45-1618046		0000916053	OQ	MassMutual RetireSMART Moderate Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns 4.01% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own .6% and includes only Great Lakes III, L.P.
3	Debt investors own 9.6% and includes only Babson Capital Loan Strategies Fund, L.P.
4	Debt investors own .5% and includes only Great Lakes III, L.P.
5	Debt investors own .2% and includes only Great Lakes III, L.P.

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

The following supplemental reports are required to be filed as part of your 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.

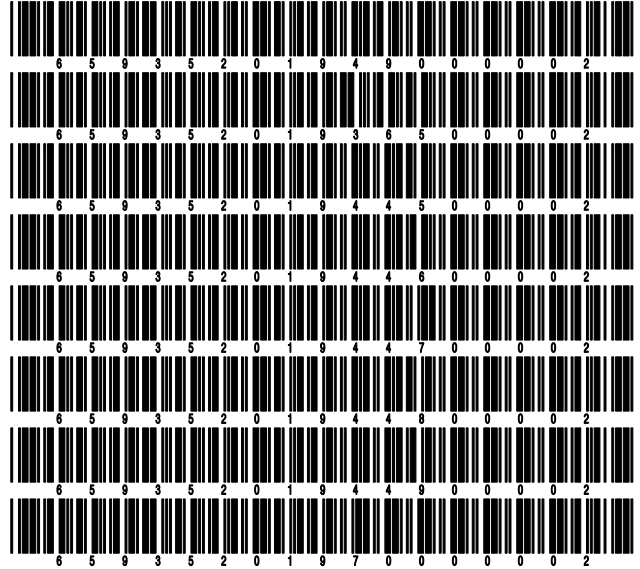
	Response
1. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	NO
2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement?	NO
3. Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC?	NO
4. 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?	NO
5. 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?	NO
6. 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?	NO
7. 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?	NO
8. Will the Life PBR Statement of Exemption be filed with the state of domicile by July 1st and electronically with the NAIC with the second quarterly filing per the Valuation Manual (by August 15)? (2nd Quarter Only) The response for 1st and 3rd quarters should be N/A. A NO response resulting with a bar code is only appropriate in the 2nd quarter.	NO

Explanation:

1. Not required
2. This line of business is not written by the company,
3. Not required
4. Not required
5. Not required
6. Not required
7. Not required
8. Not required

Bar Code:

1. Trusteed Surplus Statement [Document Identifier 490]
2. Medicare Part D Coverage Supplement [Document Identifier 365]
3. Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 445]
4. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 446]
5. Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI [Document Identifier 447]
6. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI [Document Identifier 448]
7. Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) [Document Identifier 449]
8. Life PBR Statement of Exemption (2nd Quarter Only) [Document Identifier 700]



OVERFLOW PAGE FOR WRITE-INS

Additional Write-ins for Assets Line 25

	Current Statement Date			4 December 31 Prior Year Net Admitted Assets
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	
2504. Cash advances to agents	224,342,476	224,270,097	72,379	
2505. Fully refundable deposits, prepayments and miscellaneous assets	139,742,773	140,647,376	(904,603)	22,091,419
2506. Pension plan asset	684,757,496	684,757,496		
2507. Disallowed interest maintenance reserve	240,400,492	240,400,492		
2508. Intangible assets	85,075,298	85,075,298		
2509. Commissions and expenses on long-term lease	58,845,012	58,845,012		
2510. Bills receivable	403,322	403,322		
2597. Summary of remaining write-ins for Line 25 from overflow page	1,433,566,869	1,434,399,093	(832,224)	22,091,419

Additional Write-ins for Liabilities Line 25

	1 Current Statement Date	2 December 31 Prior Year
2504. Funds awaiting escheat and other miscellaneous	87,216,297	78,826,501
2505. Deferred income liability	14,782,959	15,151,127
2597. Summary of remaining write-ins for Line 25 from overflow page	101,999,256	93,977,628

Additional Write-ins for Summary of Operations Line 8.3

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
08.304. Revenue sharing	34,604,884	63,651,994	118,220,703
08.305. Miscellaneous income	17,093,952	5,121,247	15,704,499
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	51,698,836	68,773,241	133,925,202

Additional Write-ins for Summary of Operations Line 27

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
2704. Ceded income on funds withheld	102,433,965	98,670,404	200,347,847
2705. Change in liability for employee/agent benefit plans	47,363,315	10,783,480	(8,510,950)
2706. Miscellaneous charges to operations	16,018,049	13,963,750	15,536,263
2797. Summary of remaining write-ins for Line 27 from overflow page	165,815,329	123,417,634	207,373,160

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE A - VERIFICATION

Real Estate

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year	488,306,553	857,001,296
2. Cost of acquired:		
2.1 Actual cost at time of acquisition		57,671,139
2.2 Additional investment made after acquisition	46,890,285	152,570,868
3. Current year change in encumbrances	(3,118,031)	(386,999,179)
4. Total gain (loss) on disposals	20,433,718	170,141,914
5. Deduct amounts received on disposals	55,530,458	275,807,610
6. Total foreign exchange change in book/adjusted carrying value		
7. Deduct current year's other than temporary impairment recognized	40,793,428	2,208,173
8. Deduct current year's depreciation	45,879,698	84,063,702
9. Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8)	410,308,941	488,306,553
10. Deduct total nonadmitted amounts		
11. Statement value at end of current period (Line 9 minus Line 10)	410,308,941	488,306,553

SCHEDULE B - VERIFICATION

Mortgage Loans

	1 Year to Date	2 Prior Year Ended December 31
1. Book value/recorded investment excluding accrued interest, December 31 of prior year	23,623,807,529	22,579,846,619
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	1,820,574,289	3,229,830,662
2.2 Additional investment made after acquisition	231,988,606	468,570,683
3. Capitalized deferred interest and other	22,867,630	39,017,050
4. Accrual of discount	1,797,119	4,764,878
5. Unrealized valuation increase (decrease)		
6. Total gain (loss) on disposals	1,361,260	(1,214,062)
7. Deduct amounts received on disposals	1,423,240,045	2,574,815,338
8. Deduct amortization of premium and mortgage interest points and commitment fees	(5,935,716)	(2,704,349)
9. Total foreign exchange change in book value/recorded investment excluding accrued interest	(11,435,165)	(124,897,312)
10. Deduct current year's other than temporary impairment recognized		
11. Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	24,273,656,939	23,623,807,529
12. Total valuation allowance		
13. Subtotal (Line 11 plus Line 12)	24,273,656,939	23,623,807,529
14. Deduct total nonadmitted amounts		
15. Statement value at end of current period (Line 13 minus Line 14)	24,273,656,939	23,623,807,529

SCHEDULE BA - VERIFICATION

Other Long-Term Invested Assets

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year	8,643,322,029	7,722,717,021
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	147,008,898	1,841,133,266
2.2 Additional investment made after acquisition	491,768,254	2,020,426,390
3. Capitalized deferred interest and other		
4. Accrual of discount		
5. Unrealized valuation increase (decrease)	338,091,723	652,916,795
6. Total gain (loss) on disposals	4,808,423	5,542,359
7. Deduct amounts received on disposals	707,465,237	3,509,181,095
8. Deduct amortization of premium and depreciation	338,744	567,724
9. Total foreign exchange change in book/adjusted carrying value	16,890,417	(60,633,528)
10. Deduct current year's other than temporary impairment recognized	12,998,367	29,031,457
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	8,921,087,396	8,643,322,029
12. Deduct total nonadmitted amounts	30,721,841	43,866,156
13. Statement value at end of current period (Line 11 minus Line 12)	8,890,365,555	8,599,455,873

SCHEDULE D - VERIFICATION

Bonds and Stocks

	1 Year to Date	2 Prior Year Ended December 31
1. Book/adjusted carrying value of bonds and stocks, December 31 of prior year	110,650,590,353	106,837,837,246
2. Cost of bonds and stocks acquired	16,199,886,383	28,933,190,148
3. Accrual of discount	130,193,786	277,958,552
4. Unrealized valuation increase (decrease)	3,673,301,457	1,440,127,883
5. Total gain (loss) on disposals	46,469,664	72,777,254
6. Deduct consideration for bonds and stocks disposed of	11,477,388,000	24,859,504,095
7. Deduct amortization of premium	71,299,639	134,973,241
8. Total foreign exchange change in book/adjusted carrying value	(44,726,865)	(573,657,471)
9. Deduct current year's other than temporary impairment recognized	67,037,789	1,392,111,397
10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees	40,080,907	48,945,474
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	119,080,070,257	110,650,590,353
12. Deduct total nonadmitted amounts		
13. Statement value at end of current period (Line 11 minus Line 12)	119,080,070,257	110,650,590,353

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE D - PART 1B

Showing the Acquisitions, Dispositions and Non-Trading Activity
During the Current Quarter for all Bonds and Preferred Stock by NAIC Designation

NAIC Designation	1 Book/Adjusted Carrying Value Beginning of Current Quarter	2 Acquisitions During Current Quarter	3 Dispositions During Current Quarter	4 Non-Trading Activity During Current Quarter	5 Book/Adjusted Carrying Value End of First Quarter	6 Book/Adjusted Carrying Value End of Second Quarter	7 Book/Adjusted Carrying Value End of Third Quarter	8 Book/Adjusted Carrying Value December 31 Prior Year
BONDS								
1. NAIC 1 (a)	54,836,066,772	7,380,953,368	5,823,193,621	(2,645,524,012)	54,836,066,772	53,748,302,507		54,426,947,350
2. NAIC 2 (a)	39,707,523,629	15,866,963,463	16,365,644,155	(88,476,719)	39,707,523,629	39,120,366,218		39,721,923,702
3. NAIC 3 (a)	2,792,333,508	772,004,598	932,346,084	7,070,514	2,792,333,508	2,639,062,536		2,851,626,812
4. NAIC 4 (a)	1,897,127,773	1,219,387,532	155,395,655	2,602,324,596	1,897,127,773	5,563,444,246		2,004,562,945
5. NAIC 5 (a)	1,509,117,188	24,281,447	72,523,697	61,772,246	1,509,117,188	1,522,647,184		1,496,376,273
6. NAIC 6 (a)	408,052,066	1,599,749	4,568,199	70,872,013	408,052,066	475,955,629		350,616,700
7. Total Bonds	101,150,220,936	25,265,190,157	23,353,671,411	8,038,638	101,150,220,936	103,069,778,320		100,852,053,782
PREFERRED STOCK								
8. NAIC 1	443,850,000				443,850,000	443,850,000		443,850,000
9. NAIC 2	127,805,688			(2,622,400)	127,805,688	125,183,288		125,632,088
10. NAIC 3	141,021,927				141,021,927	141,021,927		140,943,708
11. NAIC 4	669,179				669,179	669,179		669,179
12. NAIC 5	23,053,631			161,971	23,053,631	23,215,602		16,697,090
13. NAIC 6	11,399,453	740,857		(53,884)	11,399,453	12,086,426		16,300,001
14. Total Preferred Stock	747,799,878	740,857		(2,514,313)	747,799,878	746,026,422		744,092,066
15. Total Bonds and Preferred Stock	101,898,020,814	25,265,931,014	23,353,671,411	5,524,325	101,898,020,814	103,815,804,742		101,596,145,848

(a) Book/Adjusted Carrying Value column for the end of the current reporting period includes the following amount of short-term and cash equivalent bonds by NAIC designation:

NAIC 1 \$ 1,046,070,660 ; NAIC 2 \$ 794,216,647 ; NAIC 3 \$; NAIC 4 \$; NAIC 5 \$; NAIC 6 \$.

SCHEDULE DA - PART 1

Short-Term Investments

	1	2	3	4	5
	Book/Adjusted Carrying Value	Par Value	Actual Cost	Interest Collected Year-to-Date	Paid for Accrued Interest Year-to-Date
9199999 Totals	893,368,663	XXX	890,437,211	382,111	358

SCHEDULE DA - VERIFICATION

Short-Term Investments

	1	2
	Year To Date	Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year	447,734,452	508,320,258
2. Cost of short-term investments acquired	1,574,709,094	2,219,939,077
3. Accrual of discount	9,307,571	9,958,973
4. Unrealized valuation increase (decrease)		
5. Total gain (loss) on disposals	70,052	89,026
6. Deduct consideration received on disposals	1,138,452,507	2,290,572,883
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)	893,368,663	447,734,452
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	893,368,663	447,734,452

SCHEDULE DB - PART A - VERIFICATION

Options, Caps, Floors, Collars, Swaps and Forwards

1. Book/Adjusted Carrying Value, December 31, prior year (Line 9, prior year)	3,628,605,132
2. Cost Paid/(Consideration Received) on additions	174,501,842
3. Unrealized Valuation increase/(decrease)	(95,915,096)
4. Total gain (loss) on termination recognized	100,875,453
5. Considerations received/(paid) on terminations	329,522,533
6. Amortization	(1,094,033)
7. Adjustment to the Book/Adjusted Carrying Value of hedged item	
8. Total foreign exchange change in Book/Adjusted Carrying Value	
9. Book/Adjusted Carrying Value at End of Current Period (Lines 1+2+3+4-5+6+7+8)	3,477,450,765
10. Deduct nonadmitted assets	
11. Statement value at end of current period (Line 9 minus Line 10)	3,477,450,765

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 to date 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 to date minus	152,889,326
3.14 Section 1, Column 18, prior year	200,720,383 (47,831,057) (47,831,057)
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	152,889,326
3.24 Section 1, Column 19, prior year	200,720,383 (47,831,057) (47,831,057)
3.3 Subtotal (Line 3.1 minus Line 3.2)	
4.1 Cumulative variation margin on terminated contracts during the year	265,858,790
4.2 Less:	
4.21 Amount used to adjust basis of hedged item	
4.22 Amount recognized	65,138,407 65,138,407
4.3 Subtotal (Line 4.1 minus Line 4.2)	200,720,383
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	
6. Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)	(200,720,383)
7. Deduct total nonadmitted amounts	
8. Statement value at end of current period (Line 6 minus Line 7)	(200,720,383)

STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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	13,095,487	16,472,173	10/01/2012	10/01/2042	Interest Rate Swap		3,444,144	42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	13,095,487	13,028,029
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		11,512,278	11,914,045	10/01/2012	10/01/2042	Interest Rate Swap			320808-AD-0	FIRST MARYLAND CAP I-LIMITED GUARANTEE NOTE	2	11,512,278	11,914,045
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		17,957,792	18,022,519	10/01/2012	10/01/2042	Interest Rate Swap			38136M-AC-2	Goldentree Loan Management US Clo 2 Ltd	1	17,957,792	18,022,519
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		10,000,000	9,933,170	10/01/2012	10/01/2042	Interest Rate Swap			09629L-AE-5	BLUEMOUNTAIN CLO XXIII L-BLUEM 2018-23A B	1	10,000,000	9,933,170
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		5,000,000	4,816,175	10/01/2012	10/01/2042	Interest Rate Swap			03328Y-AG-9	Anchorage Capital CLO Lt-ANCHC 2018-1RA C	1	5,000,000	4,816,175
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3	50,000,000	2,483,711	5,871,552	10/01/2012	10/01/2042	Interest Rate Swap		3,387,841	77277L-A7-2	ROCKALL CLO BV Variable Funding Note- USD	1	2,483,711	2,483,711
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		4,283,133	4,369,353	10/01/2012	10/01/2042	Interest Rate Swap			83149E-AG-2	SLM STUDENT LN TR 2006-5-NOTE CL B	1	4,283,133	4,369,353
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		5,470,000	5,460,127	10/01/2012	10/01/2042	Interest Rate Swap			883310-AE-4	THAYER PARK CLO LTD.-THAYR 2017-1A B	1	5,470,000	5,460,127
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		6,430,000	6,410,781	10/01/2012	10/01/2042	Interest Rate Swap			77342K-AA-8	ROCKFORD TOWER CLO 2018-ROCKT 2018-2A A	1	6,430,000	6,410,781
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		8,000,000	7,863,720	10/01/2012	10/01/2042	Interest Rate Swap			09628F-AE-9	BlueMountain Fuji US Clo-SERIES 2017-3A CLASS B	1	8,000,000	7,863,720
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		4,000,000	3,964,672	10/01/2012	10/01/2042	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	4,000,000	3,964,672
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		15,000,000	14,758,530	10/01/2012	10/01/2042	Interest Rate Swap			88432U-AC-0	Wind River CLO Ltd-SERIES 18-3A CLASS A2	1	15,000,000	14,758,530
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		6,800,000	6,753,610	10/01/2012	10/01/2042	Interest Rate Swap			03762Y-AH-0	Apidos Clo XXV-APID 2016-25A A2R	1	6,800,000	6,753,610
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	264,000,000	19,165,000	36,101,849	11/29/2012	11/29/2042	Interest Rate Swap		17,078,670	14316R-ZZ-6	Carlyle US CLO 2017-5 Re Term Loan	1	19,165,000	19,023,179
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,357,507	6,590,138	11/29/2012	11/29/2042	Interest Rate Swap			83149F-AD-6	SLM Student Loan Trust 2006-6	1	6,357,507	6,590,138
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,500,000	15,475,572	11/29/2012	11/29/2042	Interest Rate Swap			375415-AA-4	GILBERT PARK CLO LTD-SERIES 17-1A CLASS A	1	15,500,000	15,475,572
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,091,288	11/29/2012	11/29/2042	Interest Rate Swap			14310D-AY-3	CARLYLE GLOBAL MKT STRATEGIES CLO 2013-2 LTD MEZZ SECD DEF NT	1	13,500,000	13,091,288
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,100,000	12,825,673	11/29/2012	11/29/2042	Interest Rate Swap			67097Q-AC-9	COP CLO 2017-14 Ltd-SERIES 17-14A CLASS A1B	1	13,100,000	12,825,673
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,761,873	28,473,922	11/29/2012	11/29/2042	Interest Rate Swap			57542Z-AO-7	MASSMUTUAL ASSET FIN LLC SR SECD REV NT	4	27,761,873	28,473,922
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		140,613,316	140,622,737	11/29/2012	11/29/2042	Interest Rate Swap			126611-AL-6	CVP CASCADE CLO LTD-CVPC 2014-2A A1R	1	140,613,316	140,622,737
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,200,000	6,176,924	11/29/2012	11/29/2042	Interest Rate Swap			94950G-AE-7	WELLFLEET CLO LTD-WELF 2017-1A B	1	6,200,000	6,176,924
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,525,000	5,458,496	11/29/2012	11/29/2042	Interest Rate Swap			01748R-AE-5	ALLEGRO CLO V LTD-SERIES 17-1A CLASS MEZ, FLT	1	5,525,000	5,458,496
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,767,260	11/29/2012	11/29/2042	Interest Rate Swap			38137M-AK-3	Goldentree Loan Oppor tun-GLD12 2016-12A AJR	1	15,000,000	14,767,260
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,366,895	11/29/2012	11/29/2042	Interest Rate Swap			03767M-AJ-7	Apidos CLO-APID 2018-29A B	1	4,500,000	4,366,895
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,970,055	11/29/2012	11/29/2042	Interest Rate Swap			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	5,000,000	4,970,055
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	12,000,000	21,879,184	12/27/2012	12/27/2042	Interest Rate Swap		9,996,232	67112K-AC-3	COP CLO Ltd-SERIES 18-15A CLASS A3	1	12,000,000	11,882,952
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	4,000,424	12/27/2012	12/27/2042	Interest Rate Swap			83609R-AE-1	SOUND POINT CLO LTD-SNDPT 2017-1A C	1	4,000,000	4,000,424
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,800,000	22,747,560	12/27/2012	12/27/2042	Interest Rate Swap			14315J-YY-9	Carlyle US CLO 2017-3 Ri Term Loan	1	22,800,000	22,747,560
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,169,962	12/27/2012	12/27/2042	Interest Rate Swap			03330A-AC-6	Anchorage Capital CLO 3-ANCHC 2014-3RA B	1	3,200,000	3,169,962
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		33,000,000	32,864,502	12/27/2012	12/27/2042	Interest Rate Swap			87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	33,000,000	32,864,502
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,800,000	8,665,378	12/27/2012	12/27/2042	Interest Rate Swap			14310D-AW-7	Carlyle Global Market St-SERIES 2013-2A CLASS BR	1	8,800,000	8,665,378

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,903,385	16,274,120	12/27/2012	12/27/2042	Interest Rate Swap			24820R-AA-6	Statoil ASA-SENIOR UNSECURED NOTE	1	13,903,385	16,274,120
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,965,201	4,951,840	12/27/2012	12/27/2042	Interest Rate Swap			12551J-AG-1	CIFC Funding 2017-IV Ltd-SERIES 17-4A CLASS B	1	4,965,201	4,951,840
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	13,907,388	23,513,716	12/27/2012	12/27/2042	Interest Rate Swap		9,996,232	92977H-AG-3	WACHOVIA STUDENT LOAN TR-WSLT 2005-1 B	1	13,907,388	13,517,484
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,990,000	18,978,587	12/27/2012	12/27/2042	Interest Rate Swap			04964K-AN-1	TRIUM CDO CORP-SERIES 9A CLASS BR	1	18,990,000	18,978,587
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,810,000	18,648,855	12/27/2012	12/27/2042	Interest Rate Swap			92912V-AQ-8	VOYA CLO LTD-VOYA 2014-2A A2AR	1	18,810,000	18,648,855
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,374,236	5,372,274	12/27/2012	12/27/2042	Interest Rate Swap			24823B-AK-6	Denali Capital CLO X LLC-DEN10 2013-1A A1LR	1	5,374,236	5,372,274
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,000,000	22,721,746	12/27/2012	12/27/2042	Interest Rate Swap			06760P-AE-1	Babson CLO Ltd/Cayman Is-BABSN 2018-3A A2	1	23,000,000	22,721,746
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,500,000	9,408,335	12/27/2012	12/27/2042	Interest Rate Swap			55821A-AE-8	Madison Park Funding Ltd-SERIES 18-28A CLASS B	1	9,500,000	9,408,335
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,948,072	12/27/2012	12/27/2042	Interest Rate Swap			81883A-AC-3	Shackleton 2015-VII-R CL-SERIES 2015-7RA CLASS B	1	8,000,000	7,948,072
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,450,000	3,451,866	12/27/2012	12/27/2042	Interest Rate Swap			14311D-BC-9	CARLYLE GLOBAL MARKET ST-SERIES 15-1A CLASS BR	2	3,450,000	3,451,866
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,953,496	12/27/2012	12/27/2042	Interest Rate Swap			28622J-AB-3	ARROWMARK COLORADO HOLDI-SERIES 17-7A CLASS B	1	4,000,000	3,953,496
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	6,000,000	16,544,402	12/28/2012	12/28/2042	Interest Rate Swap		10,619,648	38138B-AG-5	Goldentree Loan Managem-GLM 2018-3A B1	1	6,000,000	5,924,754
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		29,970,648	29,999,400	12/28/2012	12/28/2042	Interest Rate Swap			56608K-AA-1	Marble Point CLO XIV Ltd-HP14 2018-2A A	1	29,970,648	29,999,400
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,993,330	12/28/2012	12/28/2042	Interest Rate Swap			87246M-AJ-1	TICP CLO VI 2016-2 Ltd-SERIES 2016-6A CLASS BR	1	10,000,000	9,993,330
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,993,014	12/28/2012	12/28/2042	Interest Rate Swap			55818X-BA-0	MADISON PARK FUNDING LTD-SERIES 2015-16A CLASS BR	1	7,000,000	6,993,014
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,050,000	10,983,811	12/28/2012	12/28/2042	Interest Rate Swap			88432M-AC-8	WIND RIVER CLO LTD-WINDR 2017-1A B	1	11,050,000	10,983,811
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,000,000	22,987,465	12/28/2012	12/28/2042	Interest Rate Swap			22615M-AL-6	Crestline Denali CLO XIV-SERIES16-1A CLASS A1R	1	23,000,000	22,987,465
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,885,336	12/28/2012	12/28/2042	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	8,000,000	7,885,336
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	2,962,038	12/28/2012	12/28/2042	Interest Rate Swap			87248K-AS-3	TICP CLO VI 2016-5 LTD-TICP 2016-5A A2R	1	3,000,000	2,962,038
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	990,303	12/28/2012	12/28/2042	Interest Rate Swap			94950J-AA-9	Wellfleet CLO Ltd-SERIES 18-1A CLASS A	1	1,000,000	990,303
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,987,428	12/28/2012	12/28/2042	Interest Rate Swap			40437L-AE-2	HPS LOAN MANAGEMENT 13-2-HLM 13A-18 A2	1	4,000,000	3,987,428
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,060,000	4,895,079	12/28/2012	12/28/2042	Interest Rate Swap			92917A-AE-6	Voya CLO Ltd-SERIES 18-1A CLASS B	1	5,060,000	4,895,079
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	59,000,000	69,047,525	12/28/2012	12/28/2042	Interest Rate Swap		10,619,648	94950J-AA-9	Wellfleet CLO Ltd-SERIES 18-1A CLASS A	1	59,000,000	58,427,877
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,200,000	14,200,639	12/28/2012	12/28/2042	Interest Rate Swap			06759F-AB-2	BABSON CLO LTD 2015-II-SERIES 15-2A CLASS AR	1	14,200,000	14,200,639
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,739,640	12/28/2012	12/28/2042	Interest Rate Swap			04017T-AE-9	Ares XXXIR CLO Ltd-SERIES 14-31RA CLASS B	1	20,000,000	19,739,640
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,700,000	12,677,153	12/28/2012	12/28/2042	Interest Rate Swap			55818Y-BE-0	MADISON PARK FUNDING LTD-SERIES 15-17A CLASS B1R	1	12,700,000	12,677,153
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,200,000	4,053,298	12/28/2012	12/28/2042	Interest Rate Swap			12551R-AE-8	CIFC Funding 2018-I Ltd-SERIES 18-1A CLASS C	1	4,200,000	4,053,298
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,089,336	12/28/2012	12/28/2042	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,089,336
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	20,000,000	30,315,928	12/28/2012	12/28/2042	Interest Rate Swap		10,619,648	09628N-AQ-5	BlueMountain CLO 2015-4 -SERIES 15-4A CLASS A2R	1	20,000,000	19,696,280
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,991,968	12/28/2012	12/28/2042	Interest Rate Swap			83609G-AN-5	SOUND POINT CLO IX LTD-SERIES 2015-2A CLASS B1R	1	8,000,000	7,991,968
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,818,930	3,856,229	12/28/2012	12/28/2042	Interest Rate Swap			38141G-VV-1	GOLDMAN SACHS GROUP INC-SENIOR UNSECURED	1	3,818,930	3,856,229

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,265,166	12,185,977	12/28/2012	12/28/2042	Interest Rate Swap			63939F-AC-4	Navigent Student Loan Tru-SERIES 15-1 CLASS B	1	12,265,166	12,185,977
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,913,000	8,905,345	12/28/2012	12/28/2042	Interest Rate Swap			78447Y-AD-4	SLM STUDENT LOAN TRUST-SLMA 2013-3	1	8,913,000	8,905,345
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,902,235	12/28/2012	12/28/2042	Interest Rate Swap			12550G-AE-3	CIFC Funding Ltd-CIFC 2018-5A B	1	5,000,000	4,902,235
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,900,000	8,874,279	12/28/2012	12/28/2042	Interest Rate Swap			55820T-AC-2	MADISON PARK FUNDING LTD-SERIES 2017-23A CLASS B	1	8,900,000	8,874,279
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,650,000	8,595,358	12/28/2012	12/28/2042	Interest Rate Swap			33882G-AC-2	FLATIRON CLO LTD-FLAT 2017-1A C	1	8,650,000	8,595,358
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	993,419	12/28/2012	12/28/2042	Interest Rate Swap			48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2	1	1,000,000	993,419
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,256,707	12/28/2012	12/28/2042	Interest Rate Swap			09626U-AQ-1	BLUEMOUNTAIN CLO LTD-BLUEM 2013-1A BR	1	4,250,000	4,256,707
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,800,561	16,071,786	12/28/2012	12/28/2042	Interest Rate Swap			78447M-AD-0	SLM STUDENT LOAN TRUST-SERIES 2013-1 CLASS B	1	15,800,561	16,071,786
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,249,885	12/28/2012	12/28/2042	Interest Rate Swap			75888M-AG-5	Regatta XIV Funding Ltd-SERIES 18-3A CLASS B	1	4,250,000	4,249,885
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	9,550,000	14,806,277	12/28/2012	12/28/2042	Interest Rate Swap		5,309,824	04965F-AG-6	Atrium XV-SERIES 15A CLASS B	1	9,550,000	9,496,453
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,993,150	12/28/2012	12/28/2042	Interest Rate Swap			55819B-AL-4	MADISON PARK FUNDING XVI-SERIES 15-18A CLASS A1R	1	10,000,000	9,993,150
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,557,589	9,781,459	12/28/2012	12/28/2042	Interest Rate Swap			63940A-AD-0	NAVIGENT STUDENT LOAN TRU-SERIES 17-4A CLASS B	1	9,557,589	9,781,459
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,200,000	9,199,991	12/28/2012	12/28/2042	Interest Rate Swap			03328W-AN-8	Anchorage Capital CLO 9-SERIES 16-9A CLASS CR	1	9,200,000	9,199,991
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,503,840	12/28/2012	12/28/2042	Interest Rate Swap			26245C-AE-3	DRYDEN SENIOR LOAN FUND-SERIES 2016-43A CLASS B	1	7,500,000	7,503,840
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,089,336	12/28/2012	12/28/2042	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,089,336
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,477,920	12/28/2012	12/28/2042	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-18A B	1	2,500,000	2,477,920
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,400,000	6,349,050	12/28/2012	12/28/2042	Interest Rate Swap			77342K-AC-4	Rockford Tower CLO 2018-2 Ltd	1	6,400,000	6,349,050
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,000,000	15,190,614	12/28/2012	12/28/2042	Interest Rate Swap		5,309,824	24380L-AE-3	DEER CREEK CLO LTD 2017-SERIES 17-1A CLASS B	1	10,000,000	9,880,790
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,000,000	29,872,710	12/28/2012	12/28/2042	Interest Rate Swap			04624W-AC-1	ASSURANT CLO III LTD-SERIES 2018-2A CLASS A	1	30,000,000	29,872,710
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,438,534	12/28/2012	12/28/2042	Interest Rate Swap			48249V-AQ-4	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A2R	1	13,570,000	13,438,534
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,850,000	4,814,774	12/28/2012	12/28/2042	Interest Rate Swap			08179H-AB-6	BENEFIT STREET PARTNERS -SERIES 2017-12A CLASS A2	1	4,850,000	4,814,774
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,000,000	15,295,294	12/28/2012	12/28/2042	Interest Rate Swap		5,309,824	87232A-AE-4	TFLAT 2018-1A B	1	10,000,000	9,985,470
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,412,644	10,405,790	12/28/2012	12/28/2042	Interest Rate Swap			78442G-PL-4	SLM STUDENT LOAN TRUST-SERIES 2005-4 CLASS B	1	10,412,644	10,405,790
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,920,000	8,919,938	12/28/2012	12/28/2042	Interest Rate Swap			10302V-BC-8	BOWMAN PARK CLO LTD-BOWPK 2014-1A B1R	1	8,920,000	8,919,938
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,850,000	6,854,446	12/28/2012	12/28/2042	Interest Rate Swap			674000-AQ-7	OAKTREE CLO LTD-SERIES 14-1A CLASS A2R	1	6,850,000	6,854,446
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,840,000	6,801,983	12/28/2012	12/28/2042	Interest Rate Swap			88433R-AE-2	WIND RIVER CLO LTD-SERIES 17-2A CLASS B	1	6,840,000	6,801,983
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,970,765	12/28/2012	12/28/2042	Interest Rate Swap			50188Y-AB-0	LOM LTD PARTNERSHIP-LOM 24A B	1	5,000,000	4,970,765
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,089,336	12/28/2012	12/28/2042	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,089,336
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,600,000	4,469,144	12/28/2012	12/28/2042	Interest Rate Swap			05875H-AE-3	Ballyrock CLO 2018-1 Ltd-SERIES 2018-1A CLASS B	1	4,600,000	4,469,144
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	5,400,000	10,677,883	12/28/2012	12/28/2042	Interest Rate Swap		5,309,824	12548J-AE-2	CIFC FUNDING LTD-SERIES 17-3A CLASS A2	1	5,400,000	5,368,059
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,717,109	12/28/2012	12/28/2042	Interest Rate Swap			74988L-AC-8	ALM XIV Ltd-SERIES 14-14A CLASS A2R2	1	11,900,000	11,717,109

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,650,000	4,661,639	12/28/2012	12/28/2042	Interest Rate Swap			29001L-AG-6	Elmwood CLO II Ltd-ELMW2 2019-2A C	1	4,650,000	4,661,639
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,500,252	12/28/2012	12/28/2042	Interest Rate Swap			50184K-AW-8	LCM LTD PARTNERSHIP-SERIES 13A CLASS CR	1	4,500,000	4,500,252
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,000,130	12/28/2012	12/28/2042	Interest Rate Swap			08181L-AA-5	BENEFIT STREET PARTNERS -BSP 2016-10A A1	1	5,000,000	5,000,130
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,076,072	12/28/2012	12/28/2042	Interest Rate Swap			08181B-AS-8	Benefit Street Partners -SERIES 16-9A CLASS BR	1	11,200,000	11,076,072
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,844,000	12/28/2012	12/28/2042	Interest Rate Swap			94951D-AC-7	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A1B	1	8,000,000	7,844,000
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	20,000,000	24,551,171	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	36248M-AJ-6	GT Loan Financing I Ltd -SERIES 2013-1A CLASS AR	1	20,000,000	19,896,780
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,932,568	20,792,320	12/31/2012	12/31/2042	Interest Rate Swap			14315J-MM-8	Carlyle US CLO 2013-2 Re Term Loan	1	20,932,568	20,792,320
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,550,000	7,504,972	12/31/2012	12/31/2042	Interest Rate Swap			74982L-AS-9	RACE POINT CLO LTD-SERIES 13-8A CLASS CR	1	7,550,000	7,504,972
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,850,000	5,746,537	12/31/2012	12/31/2042	Interest Rate Swap			64131Q-AC-4	NEUBERGER BERMAN LOAN AD-SERIES 2017-26A CLASS B	1	5,850,000	5,746,537
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	9,900,000	14,491,387	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	67707C-AE-8	Oak Hill Credit Partners-OAKC 2014-10RA A2A	1	9,900,000	9,836,996
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,000,000	24,685,775	12/31/2012	12/31/2042	Interest Rate Swap			67104L-AF-4	CHA Loan Funding 2013-2 -OHALF 2013-2A BR	1	25,000,000	24,685,775
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,850,000	13,732,815	12/31/2012	12/31/2042	Interest Rate Swap			38137P-AU-4	Goldentree Loan Opportun-SERIES 2015-10A CLASS BR	1	13,850,000	13,732,815
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,000,000	2,000,000	12/31/2012	12/31/2042	Interest Rate Swap			94184B-D8-9	Waters Corporation Gtd Senior Note Series H	2	2,000,000	2,000,000
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,800,000	3,644,835	12/31/2012	12/31/2042	Interest Rate Swap			74988L-AJ-3	ALM XIV Ltd-SERIES 14-14A CLASS BR2	1	3,800,000	3,644,835
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	14,300,000	18,957,222	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	55820J-AC-4	MADISON PARK FUNDING LTD-SERIES 2016-21A CLASS A2	1	14,300,000	14,302,831
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,947,560	12/31/2012	12/31/2042	Interest Rate Swap			48250W-AJ-4	KKR CLO 14 Ltd-KKR 14 BR TICP CLO VI 2016-5 LTD-TICP 2016-5A	1	15,000,000	14,947,560
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,936,730	12/31/2012	12/31/2042	Interest Rate Swap			87248K-AS-3	A2R ALM LOAN FUNDING-SERIES 13-8A CLASS A1R	1	5,000,000	4,936,730
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,350,000	4,353,062	12/31/2012	12/31/2042	Interest Rate Swap			020053-AS-3	Navient Student Loan Tru-SERIES 15-1 CLASS B	1	4,350,000	4,353,062
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,022,097	1,015,498	12/31/2012	12/31/2042	Interest Rate Swap			63939F-AC-4	Ballyrock CLO 2019-1 Ltd-BALLY 2019-1A A2	1	1,022,097	1,015,498
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,800,000	7,799,984	12/31/2012	12/31/2042	Interest Rate Swap			05875J-AB-5	ARROWMARK COLORADO HOLDI-SERIES 17-7A CLASS B	1	7,800,000	7,799,984
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,953,496	12/31/2012	12/31/2042	Interest Rate Swap			28622J-AB-3	Goldentree Loan Opportun-SERIES 2015-10A CLASS AJR	1	4,000,000	3,953,496
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	8,800,000	13,345,077	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	38137P-AS-9	VOYA CLO LTD-VOYA 2017-1A B	1	8,800,000	8,690,686
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,400,000	7,377,600	12/31/2012	12/31/2042	Interest Rate Swap			92916M-AC-5	Madison Park Funding Ltd-MDPK 2019-35A B	1	7,400,000	7,377,600
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,450,000	5,449,733	12/31/2012	12/31/2042	Interest Rate Swap			55819M-AE-6	Madison Park Funding XX -SERIES 2016-20A CLASS CR	1	5,450,000	5,449,733
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,297,800	12/31/2012	12/31/2042	Interest Rate Swap			55819T-AU-5	Anchorage Capital CLO Lt-ANOC 2018-1RA B	1	7,500,000	7,297,800
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,602,429	12/31/2012	12/31/2042	Interest Rate Swap			03328Y-AE-4	Nelnet Student Loan Tru-NSLT 2019-1A B	1	13,900,000	13,602,429
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,457,038	7,450,696	12/31/2012	12/31/2042	Interest Rate Swap			64034C-AB-5	JFIN CLO 2013 LTD SR SEC2 DEF NT CL B	1	7,457,038	7,450,696
57629*ASO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	9,997,251	14,559,321	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	46616K-AE-4	Sound Point CLO II Ltd-SNDPT 2013-1A A2R	1	9,997,251	9,904,930
57629*ASO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,826,544	12/31/2012	12/31/2042	Interest Rate Swap			83608G-AQ-9	Bain Capital Credit CLO -SERIES 18-2A CLASS A2	1	8,000,000	7,826,544
57629*ASO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,776,500	12/31/2012	12/31/2042	Interest Rate Swap			05682V-AC-9	LCM XIX LTD PARTNERSHIP DEF MEZZ NT CL C	1	15,000,000	14,776,500
57629*ASO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,006,910	12/31/2012	12/31/2042	Interest Rate Swap			50188Q-AE-1		1	10,000,000	10,006,910

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,300,000	8,270,826	12/31/2012	12/31/2042	Interest Rate Swap			00900P-AE-5	AIMCO CLO Series 2018-B-SERIES 18-BA CLASS B	1	8,300,000	8,270,826
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,089,336	12/31/2012	12/31/2042	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,089,336
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,000,000	14,535,351	12/31/2012	12/31/2042	Interest Rate Swap		4,654,391	87248W-AC-2	TICP CLO VIII LTD-SERIES 2017-8A CLASS A2	1	10,000,000	9,880,960
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,430,000	3,430,415	12/31/2012	12/31/2042	Interest Rate Swap			674000-AS-3	OAKTREE CLO LTD-SERIES 14-1A CLASS BR	1	3,430,000	3,430,415
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,900,000	5,870,229	12/31/2012	12/31/2042	Interest Rate Swap			48251F-AB-7	KKR FINANCIAL CLO LTD-SERIES 17 CLASS B	1	5,900,000	5,870,229
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,000,000	11,805,768	12/31/2012	12/31/2042	Interest Rate Swap			92917J-AE-7	Voya CLO 2018-2 Ltd-VOYA 2018-2A B1	1	12,000,000	11,805,768
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,650,000	22,532,220	12/31/2012	12/31/2042	Interest Rate Swap			14315C-ZZ-0	Carlyle US CLO 2017-4 Ri Term Loan	1	22,650,000	22,532,220
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	7,400,000	13,488,585	04/09/2013	04/09/2043	Interest Rate Swap		6,089,081	55954H-AE-2	Magnetite CLO Ltd-SERIES 19-22A CLASS B	1	7,400,000	7,399,504
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,600,000	5,579,683	04/09/2013	04/09/2043	Interest Rate Swap			12550Y-AG-9	CIFC FUNDING LTD-CIFC 2017-2A CLASS B	1	5,600,000	5,579,683
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,280,000	4,242,169	04/09/2013	04/09/2043	Interest Rate Swap			09629C-AE-5	BLUEMOUNTAIN CLO LTD-SERIES 17-1A CLASS B	1	4,280,000	4,242,169
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,250,213	04/09/2013	04/09/2043	Interest Rate Swap			00163K-AS-7	ALM LOAN FUNDING-ALM 2013-7RA A2R Shackleton 2015-VII-R CL-SERIES 2015-7RA CLASS B	1	4,250,000	4,250,213
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,000,000	5,961,054	04/09/2013	04/09/2043	Interest Rate Swap			81883A-AC-3	Rockford Tower CLO 2018-SERIES 18-1A CLASS B	1	6,000,000	5,961,054
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,415,363	04/09/2013	04/09/2043	Interest Rate Swap			77342J-AC-7	WELLFLEET CLO 2017-2 LTD-SERIES 17-2A CLASS A2	1	7,500,000	7,415,363
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,100,000	6,034,956	04/09/2013	04/09/2043	Interest Rate Swap			94951M-AC-7	NEUBERGER BERMAN CLO LTD-NEUB 2017-24A C	1	6,100,000	6,034,956
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,330,000	4,330,000	04/09/2013	04/09/2043	Interest Rate Swap			64130H-AE-1	NEUBERGER BERMAN CLO LTD-NEUB 2013-14A A1R	1	4,330,000	4,330,000
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,560,163	04/09/2013	04/09/2043	Interest Rate Swap			64129J-AQ-3	RXR Realty LLC Sr Secured Series D	1	13,560,000	13,560,163
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,000,000	17,970,000	24,792,334	04/09/2013	04/09/2043	Interest Rate Swap		6,642,634	74992*-AD-7	LMI XVIII LP-LMI 18A A2R	2	17,970,000	18,149,700
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,500,000	18,077,590	04/09/2013	04/09/2043	Interest Rate Swap			501886-AX-1	EATON VANCE CDO LTD-SERIES 2013-1A CLAS A2R	1	18,500,000	18,077,590
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,750,204	04/09/2013	04/09/2043	Interest Rate Swap			27830B-AQ-7	OHA CREDIT PARTNERS LTD-SERIES 2012-7A CLASS B1R	1	12,750,000	12,750,204
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,800,000	12,787,264	04/09/2013	04/09/2043	Interest Rate Swap			67102Q-AK-4	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	12,800,000	12,787,264
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,000,000	1,975,044	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS A	1	2,000,000	1,975,044
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	26,000,000	31,891,449	04/09/2013	04/09/2043	Interest Rate Swap		6,050,257	83609Y-AC-0	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	26,000,000	25,841,192
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,623,139	5,517,426	04/09/2013	04/09/2043	Interest Rate Swap			78442G-OA-7	RACE POINT CLO LTD-SERIES 13-8A CLASS BR	1	5,623,139	5,517,426
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,775,000	10,731,523	04/09/2013	04/09/2043	Interest Rate Swap			74982L-AQ-3	Carlyle US CLO 2013-4 Re Term Loan	1	10,775,000	10,731,523
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,350,000	15,198,035	04/09/2013	04/09/2043	Interest Rate Swap			14315J-RR-2	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS C	2	15,350,000	15,198,035
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	4,450,000	10,500,622	04/09/2013	04/09/2043	Interest Rate Swap		6,050,257	55820R-AG-7	MAGNETITE CLO LTD-SERIES 2017-19A CLASS C	1	4,450,000	4,450,365
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,950,000	1,940,379	04/09/2013	04/09/2043	Interest Rate Swap			55954K-AE-5	Carlyle US CLO 2017-1 Ri Term Loan	1	1,950,000	1,940,379
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,850,000	22,822,580	04/09/2013	04/09/2043	Interest Rate Swap			14311C-RR-1	ANCHORAGE CAPITAL CLO 20-SERIES 13-1A CLASS A2R	1	22,850,000	22,822,580
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,910,480	04/09/2013	04/09/2043	Interest Rate Swap			033292-AS-2	OHA Credit Funding 3 LTD-OAKC 2019-3A B1	1	10,000,000	9,910,480
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,400,000	6,399,994	04/09/2013	04/09/2043	Interest Rate Swap			67112R-AG-9	Bluemountain CLO Ltd-SERIES 2019-25A CLASS B	1	6,400,000	6,399,994
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,800,000	4,799,995	04/09/2013	04/09/2043	Interest Rate Swap			09627F-AE-0		1	4,800,000	4,799,995

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,300,000	3,292,110	04/09/2013	04/09/2043	Interest Rate Swap			06761C-AC-3	Babson CLO Ltd 2016-11-BABSN 2016-2A BR	1	3,300,000	3,292,110
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	985,667	04/09/2013	04/09/2043	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	1,000,000	985,667
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	991,168	04/09/2013	04/09/2043	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	1,000,000	991,168
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	28,800,000	34,642,534	04/09/2013	04/09/2043	Interest Rate Swap		5,836,313	67110H-AA-6	QZLM XIV LTD SR SEC NT CL A-1A	1	28,800,000	28,806,221
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,961,225	04/09/2013	04/09/2043	Interest Rate Swap			08179C-AE-1	BENEFIT STREET PARTNERS -BSP 2017-11A A2A	1	15,000,000	14,961,225
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,722,469	04/09/2013	04/09/2043	Interest Rate Swap			05875H-AC-7	BALLYROCK CLO 2018-1 LTD-SERIES 2018-1A CLASS A2	1	13,900,000	13,722,469
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	987,522	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	1,000,000	987,522
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,000,000	21,900,000	28,153,401	04/09/2013	04/09/2043	Interest Rate Swap		6,366,887	56607F-AA-3	Marble Point CLO XI Ltd-MP11 2017-2A A	1	21,900,000	21,786,514
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,239,441	17,221,811	04/09/2013	04/09/2043	Interest Rate Swap			66704J-BD-9	NORTHSTAR EDUCATION FINA-SERIES 04-2 CLASS B	1	19,239,441	17,221,811
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,715,625	15,977,780	04/09/2013	04/09/2043	Interest Rate Swap			66704J-BK-3	NORTHSTAR EDUCATION FINA-SERIES 05-1 CLASS B	1	16,715,625	15,977,780
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,500,000	3,454,994	04/09/2013	04/09/2043	Interest Rate Swap			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	3,500,000	3,454,994
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,040,406	04/09/2013	04/09/2043	Interest Rate Swap			22615E-AE-0	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,200,000	3,040,406
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	987,522	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	1,000,000	987,522
57629*BB6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	34,500,000	39,601,501	04/09/2013	04/09/2043	Interest Rate Swap		5,314,331	01750C-AA-1	Allegro CLO VII Ltd-ALLEG 2018-1A A	1	34,500,000	34,287,170
57629*BB6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,962,935	04/09/2013	04/09/2043	Interest Rate Swap			48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	7,000,000	6,962,935
57629*BB6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,100,000	7,100,000	04/09/2013	04/09/2043	Interest Rate Swap			941848-D8-9	Waters Corporation Gtd Senior Note Series H	2	7,100,000	7,100,000
57629*BB6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,898,895	04/09/2013	04/09/2043	Interest Rate Swap			14314L-AE-5	Carlyle Global Market St-CGMS 2014-2RA A2	1	5,000,000	4,898,895
57629*AZ4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	17,425,811	22,742,338	04/09/2013	04/09/2043	Interest Rate Swap		5,314,331	126612-AJ-9	CVP CASCADE CLO LTD-CVPC 2013-CLO1 A1R	1	17,425,811	17,428,007
57629*AZ4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,850,000	22,690,484	04/09/2013	04/09/2043	Interest Rate Swap			26251L-AC-8	DRYDEN 64 CLO LTD-DRSLF 2018-64A A	1	22,850,000	22,690,484
57629*AZ4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,400,000	3,391,871	04/09/2013	04/09/2043	Interest Rate Swap			06761C-AC-3	Babson CLO Ltd 2016-11-BABSN 2016-2A BR	1	3,400,000	3,391,871
57629*AZ4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,479,383	04/09/2013	04/09/2043	Interest Rate Swap			64132D-AC-2	Neuberger Berman CLO Ltd-NEUB 2019-32A B	1	7,500,000	7,479,383
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	6,800,000	23,358,182	03/05/2014	03/05/2034	Interest Rate Swap		16,688,171	92915Q-AE-3	VOYA CLO LTD-SERIES 2017-3A CLASS A1B	1	6,800,000	6,670,011
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,780,000	6,735,957	03/05/2014	03/05/2034	Interest Rate Swap			88434G-AC-9	THL CREDIT WIND RIVER 20-SERIES 2017-3A CLASS B	1	6,780,000	6,735,957
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,920,000	4,890,711	03/05/2014	03/05/2034	Interest Rate Swap			48249V-AS-0	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS BR	1	4,920,000	4,890,711
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,100,000	21,099,979	03/05/2014	03/05/2034	Interest Rate Swap			55818Y-BA-8	MADISON PARK FUNDING LTD-SERIES 15-17A CLASS AR	1	21,100,000	21,099,979
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,015,000	21,010,082	03/05/2014	03/05/2034	Interest Rate Swap			48249V-AN-1	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A1R	1	21,015,000	21,010,082
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,800,000	20,800,582	03/05/2014	03/05/2034	Interest Rate Swap			22616C-AA-1	CRESTLINE DENALI CLO XV -SERIES 17-1A CLASS A	1	20,800,000	20,800,582
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,962,935	03/05/2014	03/05/2034	Interest Rate Swap			48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	7,000,000	6,962,935
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,200,000	12,222,424	03/05/2014	03/05/2034	Interest Rate Swap			55818P-AS-9	MADISON PARK FUNDING LTD-MDPK 2014-12A CR	1	12,200,000	12,222,424
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	20,075,279	38,576,909	03/05/2014	03/05/2034	Interest Rate Swap		16,713,971	346845-AC-4	FORT BENNING FAM-UNSECURED CARLYLE GLOBAL MARKET ST-SERIES 15-1A CLASS BR	1	20,075,279	21,862,938
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,800,000	11,799,752	03/05/2014	03/05/2034	Interest Rate Swap			14311D-AY-2		1	11,800,000	11,799,752

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,978,160	03/05/2014	03/05/2034	Interest Rate Swap			38137Y-AG-6	Goldentree Loan Managem-GLM 2019-4A B	1	15,000,000	14,978,160
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		44,780,573	46,276,245	03/05/2014	03/05/2034	Interest Rate Swap			16892D-AC-2	CHINA SOUTHERN POWER GRI-SENIOR UNSECURED	1	44,780,573	46,276,245
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,850,000	10,760,249	03/05/2014	03/05/2034	Interest Rate Swap			883310-AC-8	THAYER PARK CLO LTD.-THAYR 2017-1A A2	1	10,850,000	10,760,249
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	2,800,000	34,505,831	05/19/2014	05/19/2044	Interest Rate Swap		31,706,192	48661Y-AA-2	Kayne CLO 4 Ltd-SERIES 19-4A CLASS B1	1	2,800,000	2,799,639
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		45,000,000	44,901,675	05/19/2014	05/19/2044	Interest Rate Swap			13876J-AC-6	Canyon Capital CLO Ltd-CANYC 2012-1RA A	1	45,000,000	44,901,675
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,100,000	9,099,645	05/19/2014	05/19/2044	Interest Rate Swap			40436V-AC-5	HIGHBRIDGE LOAN MANAGEM-HLM 11A-17 C	1	9,100,000	9,099,645
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,950,000	8,933,085	05/19/2014	05/19/2044	Interest Rate Swap			50184N-AP-7	LOM LTD PARTNERSHIP-SERIES 15A CLASS CR	1	8,950,000	8,933,085
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,000,000	6,000,546	05/19/2014	05/19/2044	Interest Rate Swap			06761K-AG-6	Babson CLO Ltd/Cayman Is-SERIES 19-3A CLASS C	1	6,000,000	6,000,546
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,100,000	12,859,798	05/19/2014	05/19/2044	Interest Rate Swap			75884B-AC-2	Regatta X Funding Ltd-SERIES 2017-3A CLASS B	1	13,100,000	12,859,798
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		44,984,499	44,752,770	05/19/2014	05/19/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	44,984,499	44,752,770
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,935,714	22,917,366	05/19/2014	05/19/2044	Interest Rate Swap			14315J-ZZ-5	Carlyle US CLO 2017-2 Ri Term Loan	1	22,935,714	22,917,366
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	20,000,000	37,227,058	05/19/2014	05/19/2034	Interest Rate Swap		17,208,118	67105V-AW-4	QHA CREDIT PARTNERS LTD-QAKC 2013-9A B1R	1	20,000,000	20,018,940
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	49,527,000	05/19/2014	05/19/2034	Interest Rate Swap			77342J-AA-1	Rockford Tower CLO 2018--SERIES 18-1A CLASS A	1	50,000,000	49,527,000
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,911,100	05/19/2014	05/19/2034	Interest Rate Swap			64130P-AE-3	Neuberger Berman CLO Ltd-NEUB 2018-28A B	1	7,000,000	6,911,100
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	165,000,000	20,000,000	19,987,780	05/19/2014	05/19/2034	Interest Rate Swap			13080B-AB-7	SYMPHONY CLO LTD-SERIES 13-12A CLASS B1R	1	20,000,000	19,987,780
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,900,000	19,776,859	05/19/2014	05/19/2034	Interest Rate Swap			39808P-AL-0	Greywolf CLO V Ltd-GIOLF 2015-1A A1R	1	19,900,000	19,776,859
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,000,000	8,920,215	05/19/2014	05/19/2034	Interest Rate Swap			04017Q-AE-5	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	9,000,000	8,920,215
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	28,890,045	60,736,741	05/19/2014	05/19/2044	Interest Rate Swap		31,995,518	42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	28,890,045	28,741,223
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,081,449	17,301,177	05/19/2014	05/19/2044	Interest Rate Swap			83715R-AG-7	SOUTH CAROLINA STUDENT L-SERIES 2014-1 CLASS B	1	17,081,449	17,301,177
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,976,044	05/19/2014	05/19/2044	Interest Rate Swap			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	4,000,000	3,976,044
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,159,753	6,033,661	05/19/2014	05/19/2044	Interest Rate Swap			38021B-AG-5	GOAL CAPITAL FUNDING TRU-SERIES 2006-1 CLASS B	1	6,159,753	6,033,661
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,181,435	4,451,423	05/19/2014	05/19/2044	Interest Rate Swap			429827-AS-7	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	4,181,435	4,451,423
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,780,790	05/19/2014	05/19/2044	Interest Rate Swap			69703P-AC-3	Palmer Square CLO 2018-1-PLMRS 2018-1A A2	1	10,000,000	9,780,790
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,050,000	8,855,896	05/19/2014	05/19/2044	Interest Rate Swap			06760E-AE-6	Babson CLO Ltd 2013-I-SERIES 2013-1A CLASS CR	1	9,050,000	8,855,896
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,500,000	9,457,260	05/19/2014	05/19/2044	Interest Rate Swap			63940D-AD-4	Navient Student Loan Tru-SERIES 18-1A CLASS B	1	9,500,000	9,457,260
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,750,000	7,552,367	05/19/2014	05/19/2044	Interest Rate Swap			64131T-AG-9	Neuberger Berman CLO XVI-SERIES 17-16SA CLASS C	1	7,750,000	7,552,367
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,262,640	05/19/2014	05/19/2044	Interest Rate Swap			03330A-AE-2	Anchorage Capital CLO 3--ANCHC 2014-3RA C	1	7,500,000	7,262,640
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,853,352	05/19/2014	05/19/2044	Interest Rate Swap			38137H-BW-7	Goldentree Loan Opportun-SERIES 2015-11A CLASS BR2	1	8,000,000	7,853,352
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,926,472	05/19/2014	05/19/2044	Interest Rate Swap			39808P-AN-6	Greywolf CLO V Ltd-GIOLF 2015-1A A2R	1	8,000,000	7,926,472
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,050,000	7,772,734	05/19/2014	05/19/2044	Interest Rate Swap			06760G-AC-5	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS B	1	8,050,000	7,772,734
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,800,000	5,611,297	05/19/2014	05/19/2044	Interest Rate Swap			01749B-AC-3	Alllegro CLO VI Ltd-ALLEG 2017-2A C	1	5,800,000	5,611,297

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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		16,000,000	15,798,496	05/19/2014	05/19/2044	Interest Rate Swap			06760X-AC-8	BARINGS CLO LTD 2018-IV-SERIES 18-4A CLASS A2	1	16,000,000	15,798,496
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,700,000	3,699,993	05/19/2014	05/19/2044	Interest Rate Swap			05875J-AC-3	Ballyrock CLO 2019-1 Ltd	1	3,700,000	3,699,993
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	8,650,000	40,464,970	05/19/2014	05/19/2044	Interest Rate Swap		31,943,587	55818R-BC-9	Madison Park Funding XIV-MDPK 2014-14A CRR	1	8,650,000	8,521,383
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,371,191	2,258,467	05/19/2014	05/19/2044	Interest Rate Swap			78442A-AE-3	SLC STUDENT LOAN TRUST 2-SERIES 07-1 CLASS B	1	2,371,191	2,258,467
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,400,000	10,399,334	05/19/2014	05/19/2044	Interest Rate Swap			64132J-AG-0	NEUB 2019-31A B	1	10,400,000	10,399,334
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	2,999,706	05/19/2014	05/19/2044	Interest Rate Swap			27830X-AG-1	EATON 2019-1A C	1	3,000,000	2,999,706
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,600,000	14,612,746	05/19/2014	05/19/2044	Interest Rate Swap			09628W-AC-6	BLLEMOUNTAIN CLO LTD-SERIES 16-2A CLASS A2	1	14,600,000	14,612,746
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,000,000	15,940,992	05/19/2014	05/19/2044	Interest Rate Swap			69688A-AA-9	Palmer Square CLO 2013-2-SERIES 13-2A CLASS AARR	1	16,000,000	15,940,992
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,850,000	13,852,161	05/19/2014	05/19/2044	Interest Rate Swap			11014P-AB-1	BRISTOL PARK CLO LTD-SERIES 2016-1A CLASS B	1	13,850,000	13,852,161
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,150,000	12,131,787	05/19/2014	05/19/2044	Interest Rate Swap			05682B-AC-0	BAIN CAPITAL CREDIT CLO -SERIES BCC 2016-2A CLASS B	1	12,150,000	12,131,787
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,634,571	2,663,387	05/19/2014	05/19/2044	Interest Rate Swap			23340L-AA-2	DRB PRIME STUDENT LOAN T-SERIES 2015-B CLASS A1	1	2,634,571	2,663,387
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		67,094,223	68,167,731	05/19/2014	05/19/2044	Interest Rate Swap			22101F-AA-6	CORVIAS CAMPUS LIVING - HU, LLC - Sr Secd Note	2	67,094,223	68,167,731
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	133,500,000	163,814,306	05/19/2014	05/19/2044	Interest Rate Swap		31,587,495	858102-AX-4	Steele Creek CLO 2016-1 -SERIES 2016-1A CLASS AR	1	133,500,000	132,226,811
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,949,920	05/19/2014	05/19/2044	Interest Rate Swap			04625A-AC-8	ASSURANT CLO I LTD-SERIES 17-1A CLASS B	1	10,000,000	9,949,920
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,962,935	05/19/2014	05/19/2044	Interest Rate Swap			48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	7,000,000	6,962,935
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	130,000,000	160,556,465	05/19/2014	05/19/2044	Interest Rate Swap		31,587,495	85816W-AC-8	Steele Creek CLO 2014-1 -SERIES 14-1A CLASS A	1	130,000,000	128,968,970
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,999,670	05/19/2014	05/19/2044	Interest Rate Swap			88322U-AM-1	THACHER PARK CLO-THRPK 2014-1A BR Harbor Park CLO, Ltd-HAR-HARB 2018-1A B1	1	15,000,000	14,999,670
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,200,000	5,174,447	05/19/2014	05/19/2044	Interest Rate Swap			41154X-AG-0	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	5,200,000	5,174,447
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	5,000,000	36,616,898	05/19/2014	05/19/2044	Interest Rate Swap		31,646,843	04943A-AC-3	ATLAS SENIOR LOAN FUND L-SERIES 2017-8A CLASS B	1	5,000,000	4,970,055
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,300,000	25,279,988	05/19/2014	05/19/2044	Interest Rate Swap			87159Q-BG-2	SYMPHONY CLO LTD-SYMP 2014-14A B1R	1	25,300,000	25,279,988
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,800,000	12,800,358	05/19/2014	05/19/2044	Interest Rate Swap			84301U-AH-7	Harbour Aircraft Investm Series 2017-1 C	1	12,800,000	12,800,358
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,709,161	22,270,919	05/19/2014	05/19/2044	Interest Rate Swap			67104L-AE-7	OHA Loan Funding 2013-2 -OHALF 2013-2A AR	1	21,709,161	22,270,919
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		79,100,000	78,631,965	05/19/2014	05/19/2044	Interest Rate Swap			94949R-AW-7	Wellfleet CLO 2016-1 Ltd-WELF 2016-1A CR	1	79,100,000	78,631,965
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,950,532	05/19/2014	05/19/2044	Interest Rate Swap			50200Y-AG-3	LCM 30A B	1	4,000,000	3,950,532
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,199,875	05/19/2014	05/19/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	3,200,000	3,199,875
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	44,984,499	76,414,451	05/19/2014	05/19/2044	Interest Rate Swap		31,661,681	27830X-AE-6	EATON 2019-1A B	1	44,984,499	44,752,770
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,100,000	11,099,179	05/19/2014	05/19/2044	Interest Rate Swap			01750F-AC-0	Alllegro CLO Ltd-ALLEG 2019-1A B	1	11,100,000	11,099,179
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,700,000	2,699,887	05/19/2014	05/19/2044	Interest Rate Swap			00764M-GG-6	AEGIS ASSET BACKED SECUR-SERIES 2005-4 CLASS M1	1	2,700,000	2,699,887
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,377,592	5,481,498	05/19/2014	05/19/2044	Interest Rate Swap			247358-CC-6	EAI V Delta MSN 15181	1	5,377,592	5,481,498
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,724,821	3,565,082	05/19/2014	05/19/2044	Interest Rate Swap			67707C-AJ-7	Oak Hill Credit Partners-OAKC 2014-10A B	1	3,724,821	3,565,082
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,867,475	05/19/2014	05/19/2044	Interest Rate Swap					1	15,000,000	14,867,475

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,548,772	05/19/2014	05/19/2044	Interest Rate Swap			64130H-AA-9	NEUBERGER BERMAN CLO LTD-NEUB 2017-24A A	1	13,560,000	13,548,772
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,600,000	13,485,406	05/19/2014	05/19/2044	Interest Rate Swap			64130H-AC-5	NEUBERGER BERMAN CLO LTD-NEUB 2017-24A B1	1	13,600,000	13,485,406
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,999,730	05/19/2014	05/19/2044	Interest Rate Swap			817176-AN-0	SENECA PARK CLO LTD-SPARK 2014-1A B1R	1	15,000,000	14,999,730
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,800,000	15,958,000	05/19/2014	05/19/2044	Interest Rate Swap			50512#-AE-2	LA Stadium Finance Co Sr Secured Series C	2	15,800,000	15,958,000
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,916,772	4,976,173	05/19/2014	05/19/2044	Interest Rate Swap			64033L-AD-2	NELNET STUDENT LOAN TRUS-SERIES 2014-2A CLASS B	1	4,916,772	4,976,173
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,400,000	5,399,590	05/19/2014	05/19/2044	Interest Rate Swap			48252U-AC-1	KKR CLO 25 Ltd	1	5,400,000	5,399,590
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	135,000,000	72,500,000	101,404,540	05/19/2014	05/19/2044	Interest Rate Swap		28,909,470	29001L-AA-9	ELMWOOD CLO II LTD NT CL A	1	72,500,000	72,495,070
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,800,000	23,804,665	05/19/2014	05/19/2044	Interest Rate Swap			42086V-AC-4	Hayfin Kingsland X Ltd-SERIES 2019-1A CLASS B1	1	23,800,000	23,804,665
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,600,000	7,600,000	05/19/2014	05/19/2044	Interest Rate Swap			00901A-AC-1	Aimco CDO	1	7,600,000	7,600,000
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,600,000	5,566,462	05/19/2014	05/19/2044	Interest Rate Swap			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	5,600,000	5,566,462
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,700,000	26,970,631	05/19/2014	05/19/2044	Interest Rate Swap			38176D-AJ-8	GoLub Capital Partners C-GOCAP 2015-26A A2R	1	27,700,000	26,970,631
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	85,000,000	27,719,664	37,514,882	05/09/2014	05/09/2034	Interest Rate Swap		12,901,099	77277L-B8-9	ROCKALL CLO BV Variable Funding Note - GBP	1	27,719,664	24,613,783
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,850,075	05/09/2014	05/09/2034	Interest Rate Swap			03765W-BC-1	Apollo Credit Funding IV-SERIES 4A CLASS A1BR	1	15,000,000	14,850,075
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,530,606	05/09/2014	05/09/2034	Interest Rate Swap			04016P-AC-2	ARES CLO LTD-SERIES 17-43A CLASS B	1	13,570,000	13,530,606
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,416,442	05/09/2014	05/09/2034	Interest Rate Swap			22616C-AC-7	CRESTLINE DENALI CLO XV -SERIES 17-1A CLASS B	1	13,570,000	13,416,442
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,529,439	05/09/2014	05/09/2034	Interest Rate Swap			77342K-AA-8	ROCKFORD TOWER CLO 2018-ROCKT 2018-2A A	1	13,570,000	13,529,439
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,740,701	05/09/2014	05/09/2034	Interest Rate Swap			05683L-AG-1	Bain Capital Credit CLO -SERIES 1A CLASS C	1	3,900,000	3,740,701
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	13,100,000	38,755,526	07/22/2014	07/22/2044	Interest Rate Swap		25,882,536	67707B-AB-6	OH Credit Partners XV L-SERIES 17-15A CLASS B	1	13,100,000	12,872,990
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,300,000	13,239,192	07/22/2014	07/22/2044	Interest Rate Swap			75888F-AE-5	Regatta XIII Funding LLC-SERIES 18-2A CLASS A2	1	13,300,000	13,239,192
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,919,600	07/22/2014	07/22/2044	Interest Rate Swap			67115W-AG-5	OH Credit Funding 1 LTD-SERIES 18-1A CLASS B	1	8,000,000	7,919,600
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,810,070	07/22/2014	07/22/2044	Interest Rate Swap			17180W-AC-9	CIFC Funding 2018-II Ltd-CIFC 2018-2A A2	1	15,000,000	14,810,070
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,311,810	07/22/2014	07/22/2044	Interest Rate Swap			03329A-AE-5	Anchorage Capital CLO Lt-SERIES 2014-SRA CLASS B	1	13,500,000	13,311,810
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,305,642	8,344,062	07/22/2014	07/22/2044	Interest Rate Swap			247361-PP-9	DELTA AIR LINES INC AIRBUS A330-200 N856NW	1	8,305,642	8,344,062
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		35,000,000	34,930,140	07/22/2014	07/22/2044	Interest Rate Swap			14315J-AL-3	CARLYLE GLOBAL MARKET ST-SERIES 17-2A CLASS A1B	1	35,000,000	34,930,140
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,900,000	5,863,402	07/22/2014	07/22/2044	Interest Rate Swap			40436X-AG-2	HIGHBRIDGE LOAN MANAGEMIE-SERIES 2014 CLASS BR	1	5,900,000	5,863,402
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,500,000	14,446,858	07/22/2014	07/22/2044	Interest Rate Swap			553205-AC-9	MP CLO III LTD-MP3 2013-1A AR GT Loan Financing I Ltd -SERIES 2013-1A CLASS AR	1	14,500,000	14,446,858
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	20,000,000	45,791,747	07/22/2014	07/22/2044	Interest Rate Swap		25,894,967	36248M-AJ-6		1	20,000,000	19,896,780
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,889,720	07/22/2014	07/22/2044	Interest Rate Swap			48251M-AS-5	KKR CLO 15 Ltd-KKR 15 A2R	1	15,000,000	14,889,720
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,590,000	19,520,083	07/22/2014	07/22/2044	Interest Rate Swap			88433R-AC-6	WIND RIVER CLO LTD-SERIES 17-2A CLASS A	1	19,590,000	19,520,083
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,500,000	19,498,635	07/22/2014	07/22/2044	Interest Rate Swap			04016P-AA-6	ARES CLO LTD-ARES 2017-43A A CEDAR FUNDING LTD-SERIES 13-1A CLASS BR	1	19,500,000	19,498,635
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,478,019	07/22/2014	07/22/2044	Interest Rate Swap			15032T-AW-6		1	8,500,000	8,478,019

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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		8,000,000	7,951,512	07/22/2014	07/22/2044	Interest Rate Swap			12551J-AE-6	CIFC FUNDING LTD-SERIES 17-4A CLASS A2	1	8,000,000	7,951,512
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,100,000	5,100,056	07/22/2014	07/22/2044	Interest Rate Swap			06760B-AJ-1	BABSON CLO LTD-SERIES 17-1A CLASS C	1	5,100,000	5,100,056
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,100,000	5,084,736	07/22/2014	07/22/2044	Interest Rate Swap			566061-AE-7	MARBLE POINT CLO X LTD-SERIES 2017-1A CLASS B	1	5,100,000	5,084,736
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,400,000	3,400,646	04/09/2013	04/09/2043	Interest Rate Swap			55818Y-BG-5	MADISON PARK FUNDING LTD-SERIES 15-17A CLASS CR	1	3,400,000	3,400,646
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,975,000	2,975,833	04/09/2013	04/09/2043	Interest Rate Swap			67102Q-AP-3	OHA CREDIT PARTNERS LTD-SERIES 2012-7A CLASS CR	1	2,975,000	2,975,833
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,600,000	5,599,765	04/09/2013	04/09/2043	Interest Rate Swap			01750F-AC-0	Alligro CLO Ltd-ALLEG 2019-1A B	1	5,600,000	5,599,765
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,250,000	9,250,379	04/09/2013	04/09/2043	Interest Rate Swap			94950G-AA-5	WELLFLEET CLO LTD-WELF 2017-1A A1	1	9,250,000	9,250,379
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,921,064	04/09/2013	04/09/2043	Interest Rate Swap			41154X-AL-9	Harbor Park CLO, Ltd-HARB 2018-1A C	1	4,000,000	3,921,064
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	17,000,000	42,881,622	07/22/2014	07/22/2044	Interest Rate Swap		25,894,967	04014W-AL-9	ARES CLO LTD-ARES 2014-1A A2R	1	17,000,000	16,986,655
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,991,295	15,884,864	07/22/2014	07/22/2044	Interest Rate Swap			85816L-AA-6	Steele Creek Clo 2018-2 -SERIES 2018-2A CLASS A	1	15,991,295	15,884,864
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,550,000	22,498,135	07/22/2014	07/22/2044	Interest Rate Swap			14315J-SS-9	Carlyle US CLO 2013-1 Re Term Loan	1	22,550,000	22,498,135
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,000,000	17,014,875	07/22/2014	07/22/2044	Interest Rate Swap			55818P-AN-0	MADISON PARK FUNDING LTD-MDPK 2014-12A B1R	1	17,000,000	17,014,875
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,125,000	8,125,268	07/22/2014	07/22/2044	Interest Rate Swap			55820N-AE-1	MADISON PARK FUNDING LTD-MDPK 2016-24A C1	1	8,125,000	8,125,268
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,900,000	6,892,362	07/22/2014	07/22/2044	Interest Rate Swap			38136F-AL-7	GoldenTree Loan Managem-GLM 2017-1A C	1	6,900,000	6,892,362
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,650,000	5,617,083	07/22/2014	07/22/2044	Interest Rate Swap			50184N-AN-2	LOM LTD PARTNERSHIP-SERIES 15A CLASS BR	1	5,650,000	5,617,083
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,051,579	9,150,021	07/22/2014	07/22/2044	Interest Rate Swap			61945C-AA-1	MOSAIC CO/THE-SENIOR UNSECURED NOTE	2	9,051,579	9,150,021
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,000,000	22,563,138	07/22/2014	07/22/2044	Interest Rate Swap			67332F-AG-8	RRPF Engine Leasing Ltd Senior Secured	1	23,000,000	22,563,138
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	7,000,000	32,783,190	07/22/2014	07/22/2044	Interest Rate Swap		25,845,245	04017Q-AE-5	ARES CLO Ltd-SERIES 18-2BRA CLASS B	1	7,000,000	6,937,945
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,600,000	7,554,476	07/22/2014	07/22/2044	Interest Rate Swap			75888K-AC-8	REGATTA VIII FUNDING LTD-SERIES 2017-1A CLASS B	1	7,600,000	7,554,476
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,460,000	7,462,917	07/22/2014	07/22/2044	Interest Rate Swap			00900C-AA-2	AIMCO-AIMCO 2017-AA A	1	7,460,000	7,462,917
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,400,000	27,861,110	07/22/2014	07/22/2044	Interest Rate Swap			04017T-AC-3	Ares XXXIR CLO Ltd-SERIES 14-31RA CLASS A2	1	28,400,000	27,861,110
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,805,763	11,740,552	07/22/2014	07/22/2044	Interest Rate Swap			26244Q-AB-9	DRYDEN SENIOR LOAN FUND-SERIES 17-49A CLASS B	1	11,805,763	11,740,552
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		41,985,532	41,769,252	07/22/2014	07/22/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	41,985,532	41,769,252
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,500,000	12,475,163	07/22/2014	07/22/2044	Interest Rate Swap			05683H-AC-9	BAIN CAPITAL CREDIT CLO -SERIES 2017-2A CLASS AR	1	12,500,000	12,475,163
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,500,000	9,401,457	07/22/2014	07/22/2044	Interest Rate Swap			88432U-AE-6	Wind River CLO Ltd-SERIES 18-3A CLASS B	1	9,500,000	9,401,457
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	3,655,383	29,359,741	07/22/2014	07/22/2044	Interest Rate Swap		25,857,676	247358-XT-6	EAIV Delta MSN 15166	1	3,655,383	3,502,065
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,982,863	6,891,369	07/22/2014	07/22/2044	Interest Rate Swap			91754R-ZG-5	STATE BOARD OF REGENTS 0-SERIES JSBR 2017-1 CLASS B	2	6,982,863	6,891,369
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,164,170	4,995,998	07/22/2014	07/22/2044	Interest Rate Swap			78443K-AK-2	SLM STUDENT LOAN TRUST 2-SERIES 06-9 CLASS B	1	5,164,170	4,995,998
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,200,000	15,100,121	07/22/2014	07/22/2044	Interest Rate Swap			87248K-AL-8	TICP CLO VI 2016-5 Ltd-TICP 2016-5A BR	1	15,200,000	15,100,121
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,353,615	4,170,457	07/22/2014	07/22/2044	Interest Rate Swap			57643L-FG-6	MASTR ASSET BACKED SECUR-SERIES 2004-OPT2 CLASS A1	1	4,353,615	4,170,457
57629*B1W0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,295,000	5,295,058	07/22/2014	07/22/2044	Interest Rate Swap			03766G-AG-7	APIDOS CLO-SERIES 17-26A CLASS B	1	5,295,000	5,295,058

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,988,504	12,000,144	07/22/2014	07/22/2044	Interest Rate Swap			55819X-AC-6	Madison Park Funding XXI-MDPK 2016-22A B	1	11,988,504	12,000,144
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,300,000	16,293,464	07/22/2014	07/22/2044	Interest Rate Swap			33882G-AA-6	FLATIRON CLO LTD-FLAT 2017-1A A CEDAR FUNDING LTD-SERIES 14-4A	1	16,300,000	16,293,464
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,280,000	16,231,209	07/22/2014	07/22/2044	Interest Rate Swap			150323-AQ-6	ATLAS SENIOR LOAN FUND L-SERIES 17-8A CLASS C	1	16,280,000	16,231,209
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,410,000	9,378,919	07/22/2014	07/22/2044	Interest Rate Swap			04943A-AE-9	Highbridge Loan Managem-SERIES 4A-2014 CLASS A2R	1	9,410,000	9,378,919
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,721,119	07/22/2014	07/22/2044	Interest Rate Swap			44330G-AE-3	TICP CLO XIII Ltd-TICP 2019-13A B	1	11,900,000	11,721,119
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,999,776	07/22/2014	07/22/2044	Interest Rate Swap			87250A-AC-5	PHEAA Student Loan Trust 2014 MYERS PARK CLO LTD-MYERS 2018-1A A2	1	8,000,000	7,999,776
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,148,000	5,123,856	07/22/2014	07/22/2044	Interest Rate Swap			69340J-AB-8	AIMCO CLO Series 2018-B-SERIES 18-BA CLASS C	1	5,148,000	5,123,856
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	987,522	07/22/2014	07/22/2044	Interest Rate Swap			62848F-AC-6	SLM STUDENT LOAN TRUST 2-SERIES 06-7 CLASS B	1	1,000,000	987,522
57629*BWO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,890,780	07/22/2014	07/22/2044	Interest Rate Swap			00900P-AG-0	VOYA CLO 2017-4 LTD-SERIES 17-4A CLASS B	1	5,000,000	4,890,780
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,880,684	20,040,396	08/27/2014	08/27/2044	Interest Rate Swap		9,390,890	78443G-AJ-4	CARLYLE GLOBAL MARKET ST-CGMS 2017-1A A2	1	10,880,684	10,649,506
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,900,000	7,735,174	08/27/2014	08/27/2044	Interest Rate Swap			92916Q-AC-6	STEELE CREEK CLO LTD-SERIES 15-1A CLASS BR	1	7,900,000	7,735,174
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,875,620	08/27/2014	08/27/2044	Interest Rate Swap			14314B-AC-1	VOYA CLO LTD-VOYA 2014-2A A1R CVP CASCADE CLO LTD-CVPC 2013-CLO1 A1R	1	15,000,000	14,875,620
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,560,000	8,507,647	08/27/2014	08/27/2044	Interest Rate Swap			85816B-CQ-1	Babson CLO Ltd/Cayman Is-SERIES 19-3A CLASS B	1	8,560,000	8,507,647
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,050,000	9,045,575	08/27/2014	08/27/2044	Interest Rate Swap			92912V-AN-5	Palmer Square CLO 2015-1-PLMRS 2015-1A A2R2	1	9,050,000	9,045,575
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	60,500,000	69,918,464	08/27/2014	08/27/2044	Interest Rate Swap		9,410,841	126612-AJ-9	OCF CLO Ltd-SERIES 18-15A CLASS A2	1	60,500,000	60,507,623
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	17,400,000	26,759,884	08/27/2014	08/27/2044	Interest Rate Swap		9,360,963	06761K-AE-1	Babson CLO Ltd 2016-II-BABSN 2016-2A BR	1	17,400,000	17,398,921
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,999,880	08/27/2014	08/27/2044	Interest Rate Swap			69689A-AW-0	ASSOC BANC-CORP-SR UNSECURED Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	2	15,000,000	14,999,880
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,250,000	14,030,678	08/27/2014	08/27/2044	Interest Rate Swap			67112K-AB-5	ALM XIV Ltd-SERIES 14-14A CLASS A1R2	1	14,250,000	14,030,678
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,300,000	3,292,110	08/27/2014	08/27/2044	Interest Rate Swap			06761C-AC-3	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A1	1	3,300,000	3,292,110
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,652,258	2,655,087	08/27/2014	08/27/2044	Interest Rate Swap			045487-AA-3	Kingsland VI Ltd-KING 2013-6A AR AUST & NZ BANKING GROUP-SUBORDINATED NOTE	2	2,652,258	2,655,087
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	22,493,047	31,658,874	08/27/2014	08/27/2044	Interest Rate Swap		9,326,049	94949J-AA-3	YKR CLO 23 Ltd-KKR 23 B Ares XXXVIII CLO Ltd-SERIES 2015-38A CLASS CR	1	22,493,047	22,332,825
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,900,000	15,784,280	08/27/2014	08/27/2044	Interest Rate Swap			74988L-AA-2	WIND RIVER CLO LTD-SERIES 17-2A CLASS C1	1	15,900,000	15,784,280
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,475,000	16,263,988	08/27/2014	08/27/2044	Interest Rate Swap			06760G-AA-9	AIMCO CLO Series 2015-A-SERIES 15-AA CLASS CR	1	16,475,000	16,263,988
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	100,000,000	127,362,121	09/08/2014	09/08/2044	Interest Rate Swap		28,058,721	42086Q-AA-9	Carlyle Global Market St-SERIES 14-38A CLASS A1B	1	100,000,000	99,303,400
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,465,000	26,932,500	09/08/2014	09/08/2044	Interest Rate Swap			Z22066-36-8	KREF 2018-FL1 Ltd-KREF 2018-FL1 C	1	21,465,000	26,932,500
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,400,000	8,354,909	09/08/2014	09/08/2044	Interest Rate Swap			48252Y-AE-9		1	8,400,000	8,354,909
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,750,000	2,629,253	09/08/2014	09/08/2044	Interest Rate Swap			04015U-AK-4		1	2,750,000	2,629,253
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,590,000	2,590,039	09/08/2014	09/08/2044	Interest Rate Swap			88433R-AG-7		1	2,590,000	2,590,039
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,444,323	09/08/2014	09/08/2044	Interest Rate Swap			00900L-AJ-3		1	2,500,000	2,444,323
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,500,000	10,367,070	09/08/2014	09/08/2044	Interest Rate Swap			14315L-AC-8		1	10,500,000	10,367,070
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,770,000	4,773,194	09/08/2014	09/08/2044	Interest Rate Swap			48275P-AG-6		1	4,770,000	4,773,194

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	9,838,702	16,469,359	10/06/2014	10/06/2034	Interest Rate Swap	6,559,289	6,559,289	55819B-AN-0	Madison Park Funding XVI-MDPK 2015-18A BR	1	9,838,702	9,910,070
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	20,100,000	20,100,000	19,710,221	10/06/2014	10/06/2034	Interest Rate Swap			06760G-AB-7	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A2	1	20,100,000	19,710,221
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	20,100,000	20,100,000	20,078,131	10/06/2014	10/06/2034	Interest Rate Swap			77341D-AA-5	Rockford Tower CLO 2017-ROCKT 2017-3A A	1	20,100,000	20,078,131
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	5,000,000	5,000,000	5,003,545	10/06/2014	10/06/2034	Interest Rate Swap			817176-AS-9	SENECA PARK CLO LTD-SPARK 2014-1A CR	1	5,000,000	5,003,545
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	39,639,492	57,991,494	10/06/2014	10/06/2044	Interest Rate Swap	18,158,510	18,158,510	28108R-AA-0	EdLinc Student Loan Fund-ESLFT 2017-A A	1	39,639,492	39,832,984
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	5,780,384	5,780,384	5,689,112	10/06/2014	10/06/2044	Interest Rate Swap			61744C-NB-8	MORGAN STANLEY CAPITAL I-SERIES 2005-HE2 CLASS M1	1	5,780,384	5,689,112
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	4,900,000	4,900,000	4,890,195	10/06/2014	10/06/2044	Interest Rate Swap			12481K-AC-2	CBAM 2017-2 LTD-SERIES 17-2A CLASS B1	1	4,900,000	4,890,195
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	2,950,000	2,950,000	2,947,793	10/06/2014	10/06/2044	Interest Rate Swap			13080B-AD-3	SYMPHONY CLO LTD-SERIES 13-12A CLASS CR	1	2,950,000	2,947,793
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	20,000,000	20,000,000	19,878,640	10/06/2014	10/06/2044	Interest Rate Swap			94950G-AC-1	WELFLEET CLO LTD-WELF 2017-1A A2	1	20,000,000	19,878,640
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	15,000,000	15,000,000	14,786,115	10/06/2014	10/06/2044	Interest Rate Swap			55952Y-AR-8	Magnetite VIII Ltd-MAGNE 2014-8A BR2	1	15,000,000	14,786,115
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	4,400,000	4,400,000	4,346,320	10/06/2014	10/06/2044	Interest Rate Swap			88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	4,400,000	4,346,320
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	3,600,000	3,600,000	3,498,437	10/06/2014	10/06/2044	Interest Rate Swap			87249C-AE-1	TICP CLO X LTD-SERIES 18-10A CLASS C	1	3,600,000	3,498,437
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	3,700,000	3,700,000	3,699,723	10/06/2014	10/06/2044	Interest Rate Swap			04009G-AE-7	ARES L CLO Ltd-SERIES 19-53A CLASS B	1	3,700,000	3,699,723
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	5,000,000	5,000,000	5,000,000	10/06/2014	10/06/2044	Interest Rate Swap			03328W-AL-2	Anchorage Capital CLO 9 -SERIES 16-9A CLASS BR	1	5,000,000	5,000,000
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	175,000,000	60,000,000	89,908,838	10/10/2014	10/10/2044	Interest Rate Swap	29,124,638	29,124,638	67332F-AD-5	PRPF Engine Leasing Ltd Senior Secured	1	60,000,000	60,784,200
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	27,559,648	27,559,648	27,965,870	10/10/2014	10/10/2044	Interest Rate Swap			629394-AA-5	NTC CAPITAL I-UNSECURED BOND CULLEN/FROST CAP TR II-SUBORDINATED	2	27,559,648	27,965,870
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	21,063,949	21,063,949	20,983,557	10/10/2014	10/10/2044	Interest Rate Swap			230000-AB-7	NOTE BLUEMOUNTAIN CLO LTD-SERIES 2015-1A CLASS A2R	1	21,063,949	20,983,557
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	20,500,000	20,500,000	20,492,702	10/10/2014	10/10/2044	Interest Rate Swap			09627X-AW-1	CHENANGO PARK CLO LTD-SERIES 18-1A CLASS A1B	1	20,500,000	20,492,702
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	16,200,000	16,200,000	15,854,956	10/10/2014	10/10/2044	Interest Rate Swap			16409T-AC-3	Taconic Park CLO Ltd 201-SERIES 2016-1A CLASS A2	1	16,200,000	15,854,956
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	16,100,000	16,100,000	16,099,807	10/10/2014	10/10/2044	Interest Rate Swap			873549-AC-3	GRIPPEN PARK CLO LTD-SERIES 17-1A CLASS B	1	16,100,000	16,099,807
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	7,000,000	7,000,000	6,960,870	10/10/2014	10/10/2044	Interest Rate Swap			39862E-AB-0	Dryden XXVIII Senior Loa-DRSLF	1	7,000,000	6,960,870
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	3,555,179	3,555,179	3,521,884	10/10/2014	10/10/2044	Interest Rate Swap			26251B-AN-6	2013-28A A2LR	1	3,555,179	3,521,884
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	5,683,189	5,683,189	6,215,681	10/10/2014	10/10/2044	Interest Rate Swap			78442G-RC-2	SLMA 2005-9 STUDENT LN-BKD NT CL B	1	5,683,189	6,215,681
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	80,000,000	100,466,176	11/04/2014	11/04/2044	Interest Rate Swap	20,794,656	20,794,656	87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	80,000,000	79,671,520
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	20,000,000	20,000,000	19,807,900	11/04/2014	11/04/2044	Interest Rate Swap			55819D-AE-6	Madison Park Funding XIX-MDPK 2018-31A A2A	1	20,000,000	19,807,900
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	35,000,000	35,000,000	34,871,340	11/04/2014	11/04/2044	Interest Rate Swap			22616T-AA-4	Crestline Denali CLO XVI-DEN17 2018-1A A	1	35,000,000	34,871,340
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	110,000,000	125,510,314	11/04/2014	11/04/2044	Interest Rate Swap	20,819,728	20,819,728	06761N-AE-5	Barings Middle Market CL-BMI 2018-11 COM	2	110,000,000	104,690,586
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	22,445,000	22,445,000	22,284,249	11/04/2014	11/04/2044	Interest Rate Swap			08181J-AA-0	Benefit Street Partners -SERIES 18-5BA CLASS A1A	1	22,445,000	22,284,249
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	1,000,000	1,000,000	993,419	11/04/2014	11/04/2044	Interest Rate Swap			48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2	1	1,000,000	993,419
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	34,529,446	55,775,764	11/04/2014	11/04/2044	Interest Rate Swap	21,020,309	21,020,309	50188G-AT-0	LCM XVIII LP-LCM 18A A1R	1	34,529,446	34,755,455
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	45,984,154	45,984,154	45,747,276	11/04/2014	11/04/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	45,984,154	45,747,276

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,000,000	30,001,500	11/04/2014	11/04/2044	Interest Rate Swap			38172X-AG-4	GOLUB CAPITAL PARTNERS C-SERIES 13-16A CLASS A1R	1	30,000,000	30,001,500
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,200,000	1,192,103	11/04/2014	11/04/2044	Interest Rate Swap			48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2 ANCHORAGE CAPITAL CLO 1-ANCHC	1	1,200,000	1,192,103
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,208,330	15,315,415	11/04/2014	11/04/2044	Interest Rate Swap			03328Y-AA-2	2018-1RA A1	1	15,208,330	15,315,415
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	14,049,162	34,507,788	11/04/2014	11/04/2044	Interest Rate Swap		21,045,381	66776M-ZZ-9	ORANGE GROVE ENERGY, L.P DELAYED DRAW TE	2	14,049,162	13,462,407
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,319,467	3,195,967	11/04/2014	11/04/2044	Interest Rate Swap			247358-BB-9	EAIV Delta MSN 15153	1	3,319,467	3,195,967
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,642,851	3,503,876	11/04/2014	11/04/2044	Interest Rate Swap			247358-DD-3	EAIV Delta MSN 15161	1	3,642,851	3,503,876
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,328,507	3,205,812	11/04/2014	11/04/2044	Interest Rate Swap			247358-PP-3	Delta Air Lines Inc. - MSN 15147	1	3,328,507	3,205,812
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,328,639	3,169,374	11/04/2014	11/04/2044	Interest Rate Swap			247358-RR-7	EAIV 2017 Delta MSN 15146	1	3,328,639	3,169,374
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,642,851	3,503,876	11/04/2014	11/04/2044	Interest Rate Swap			247358-RW-6	EAIV Delta MSN 15162	1	3,642,851	3,503,876
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,500,000	20,524,846	11/04/2014	11/04/2044	Interest Rate Swap			01750F-AA-4	Allegro CLO Ltd-ALLEG 2019-1A A	1	20,500,000	20,524,846
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,400,000	17,414,024	11/04/2014	11/04/2044	Interest Rate Swap			12482N-AA-9	CBAM Ltd-CBAM 2019-10A A1A	1	17,400,000	17,414,024
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,499,805	11/04/2014	11/04/2044	Interest Rate Swap			87166R-AE-7	Symphony CLO XXI Ltd-SYMP 2019-21A B	1	8,500,000	8,499,805
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		26,700,000	26,685,395	11/04/2014	11/04/2044	Interest Rate Swap			29108Q-AY-8	EMERSON PARK CLO LTD-SERIES 13-1A	1	26,700,000	26,685,395
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,500,000	23,008,500	11/04/2014	11/04/2044	Interest Rate Swap			61093*-AA-7	BIF II SAFE HARBOR HOLDINGS LLC ATRIUM CDO CORP-SERIES 9A CLASS AR	2	22,500,000	23,008,500
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	48,000,000	69,126,887	11/04/2014	11/04/2044	Interest Rate Swap		21,120,599	04964K-AL-5	BAIN CAPITAL CREDIT CLO -SERIES 18-2A CLASS A1	1	48,000,000	48,006,288
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,500,000	28,280,294	11/04/2014	11/04/2044	Interest Rate Swap			05682V-AA-3		1	28,500,000	28,280,294
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,362,304	55,670,517	11/04/2014	11/04/2044	Interest Rate Swap			13345*-AA-5	CAMERON LNG CONSTRUCTION FA JFIN CLO LTD-SERIES 14-2A CLASS A1AR	1	55,362,304	55,670,517
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	58,129,634	79,412,469	11/04/2014	11/04/2044	Interest Rate Swap		21,271,035	46617N-AQ-0	FXR Realty LLC Sr Secured Series B	1	58,129,634	58,141,434
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		37,400,000	37,400,000	11/04/2014	11/04/2044	Interest Rate Swap			74992*-AB-1	HPS Loan Management 13-2-HLM 13A-18	2	37,400,000	37,400,000
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,490,000	10,420,577	11/04/2014	11/04/2044	Interest Rate Swap			40437L-AG-7	HPS Loan Management 9-20-HLM 9A-2016 A1BR	1	10,490,000	10,420,577
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,846,730	11/04/2014	11/04/2044	Interest Rate Swap			40436Q-AL-6		1	10,000,000	9,846,730
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,375,000	6,356,391	11/04/2014	11/04/2044	Interest Rate Swap			04622A-AC-1	Assurant CLO IV LTD	1	6,375,000	6,356,391
57629*C02	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,500,000	3,499,612	11/04/2014	11/04/2044	Interest Rate Swap			12482N-AG-6	CBAM 2019-10 Ltd	1	3,500,000	3,499,612
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	16,600,000	37,408,203	11/04/2014	11/04/2044	Interest Rate Swap		21,245,962	92915P-AK-1	Voya CLO 2014-1 Ltd-INGIN 2014-1A ABR2	1	16,600,000	16,162,241
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,660,000	13,674,083	11/04/2014	11/04/2044	Interest Rate Swap			05363U-AI-3	AVERY POINT IV CLO LTD-SERIES 14-1A CLASS CR	1	13,660,000	13,674,083
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,660,000	13,659,481	11/04/2014	11/04/2044	Interest Rate Swap			04964K-AS-0	ATRIUM CDO CORP-SERIES 9A CLASS CR	1	13,660,000	13,659,481
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	12,654,057	11/04/2014	11/04/2044	Interest Rate Swap			G7332F-AH-6	RRPF Engine Leasing Ltd Senior Secured	1	13,000,000	12,654,057
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,851,040	11/04/2014	11/04/2044	Interest Rate Swap			04941Y-AJ-8	Atlas Senior Loan Fund X-ATCLO 2018-11A B	1	10,000,000	9,851,040
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	17,000,000	16,999,983	11/04/2014	11/04/2044	Interest Rate Swap			03328W-AJ-7	Anchorage Capital CLO 9 -SERIES 16-9A CLASS AR	1	17,000,000	16,999,983
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,500,000	12,499,575	11/04/2014	11/04/2044	Interest Rate Swap			26252N-AE-9	Dryden Senior Loan Fund-DRSLF 2019-72A B	1	12,500,000	12,499,575
57629*CRO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,999,900	11/04/2014	11/04/2044	Interest Rate Swap			12550Y-AC-8	CIFC FUNDING LTD-CIFC 2017-2A A	1	20,000,000	19,999,900

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,473,668	11/04/2014	11/04/2044	Interest Rate Swap			94951D-AJ-2	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A2	1	7,500,000	7,473,668
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,798,340	1,819,402	11/04/2014	11/04/2044	Interest Rate Swap			664397-AK-2	EVERSOURCE ENERGY-UNSECURED NOTE MADISON PARK FUNDING LTD-SERIES 2015-16A CLASS A2R	2	1,798,340	1,819,402
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	12,740,000	34,043,267	11/04/2014	11/04/2044	Interest Rate Swap		21,296,107	55818X-AY-9	Apidos CLO-APID 2019-31A B	1	12,740,000	12,747,160
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,100,000	7,099,581	11/04/2014	11/04/2044	Interest Rate Swap			03767V-AD-0	Octagon Investment Partn-SERIES 19-3A CLASS B1	1	7,100,000	7,099,581
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,400,000	4,399,661	11/04/2014	11/04/2044	Interest Rate Swap			67576P-AE-7	APIDOS CLO-SERIES 17-26A CLASS A2 CATSKILL PARK CLO LTD.-SERIES 17-1A CLASS A2	1	4,400,000	4,399,661
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,240,000	12,225,496	11/04/2014	11/04/2044	Interest Rate Swap			037666-AE-2	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	12,240,000	12,225,496
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,980,000	11,945,809	11/04/2014	11/04/2044	Interest Rate Swap			149420-AE-1	KKR FINANCIAL CLO LTD-SERIES 9 CLASS AR	1	11,980,000	11,945,809
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,939,000	11/04/2014	11/04/2044	Interest Rate Swap			88434H-AE-3	Denali Capital Clo XII L-DEN12 2016-1A A1R	1	5,000,000	4,939,000
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,100,000	21,074,786	11/04/2014	11/04/2044	Interest Rate Swap			48250L-AL-3	Highbridge Loan Managem-SERIES 12A-18 CLASS A1B	1	21,100,000	21,074,786
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,100,000	22,863,941	11/04/2014	11/04/2044	Interest Rate Swap			24824T-AQ-3	HIGHBRIDGE LOAN MANAGEM-HLM 11A-17 A	1	23,100,000	22,863,941
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,250,000	10,035,785	11/04/2014	11/04/2044	Interest Rate Swap			44330Q-AB-7	GRIDIRON FDG LLC Term Facility NORTHSTAR EDUCATION FINA-SERIES 07-1 CLASS B	1	10,250,000	10,035,785
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,100,000	18,100,561	11/04/2014	11/04/2044	Interest Rate Swap			40436V-AA-9	Magnetite XX Ltd-MAGNE 2018-20A A Anchorage Capital CLO Lt-ANCHC 2018-10A A1A	1	18,100,000	18,100,561
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	33,386,109	49,700,937	12/16/2014	12/16/2044	Interest Rate Swap		15,646,473	38808C-A8-4	Barings CLO Ltd 2018-11-SERIES 2018-2A CLAS A1B	1	33,386,109	34,054,464
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,178,615	24,970,612	12/16/2014	12/16/2044	Interest Rate Swap			66704J-CB-2	BARSON CLO LTD-SERIES 17-1A CLASS A2	1	27,178,615	24,970,612
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,327,480	17,401,525	12/16/2014	12/16/2044	Interest Rate Swap			55955A-AA-4	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS B	1	17,327,480	17,401,525
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,958,520	12/16/2014	12/16/2044	Interest Rate Swap			03331J-AA-0	Benefit Street Partners -BSP 2017-12A B	1	20,000,000	19,958,520
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,200,000	15,799,082	12/16/2014	12/16/2044	Interest Rate Swap			06760J-AE-5	SALEM FIELDS CLO LTD SR SEC2 NT CL A-2-R	1	16,200,000	15,799,082
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,600,512	12/16/2014	12/16/2044	Interest Rate Swap			06760B-AC-6	ANCHC 2019-13A B	1	6,700,000	6,600,512
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,960,000	4,950,968	12/16/2014	12/16/2044	Interest Rate Swap			55820R-AE-2	Benefit Street Partners -BSP 2015-8A A1BR	1	4,960,000	4,950,968
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,575,000	2,509,059	12/16/2014	12/16/2044	Interest Rate Swap			08179H-AC-4	Benefit Street Partners CLO L	1	2,575,000	2,509,059
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,976,590	12/16/2014	12/16/2044	Interest Rate Swap			79410U-AQ-4	ASSURANT CLO III LTD-SERIES 2018-2A CLASS A	1	10,000,000	9,976,590
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,475,000	4,474,159	12/16/2014	12/16/2044	Interest Rate Swap			033291-AC-9	KKR CLO LTD 22-SERIES 22A CLASS B	1	4,475,000	4,474,159
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,425,000	6,289,593	12/16/2014	12/16/2044	Interest Rate Swap			08180X-AQ-5	ABSON CLO LTD-BABSON 2014-1A BR	1	6,425,000	6,289,593
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,000,000	5,999,994	12/16/2014	12/16/2044	Interest Rate Swap			08182B-AE-8	Carrix, Inc. Senior Term Loa	2	6,000,000	5,999,994
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	24,662,500	40,344,549	12/16/2014	12/16/2044	Interest Rate Swap		15,344,549	144577-TT-0	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS A2	1	24,662,500	25,000,000
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,470,000	14,461,564	12/16/2014	12/16/2044	Interest Rate Swap			55820R-AC-6	Atlas Senior Loan Fund X-SERIES 18-11A CLASS A1L	1	14,470,000	14,461,564
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		34,965,285	34,713,945	12/16/2014	12/16/2044	Interest Rate Swap			04941Y-AC-3	VIBRANT CLO IV LTD-SR SEC2 NT CL B 144A	1	34,965,285	34,713,945
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,335,066	6,284,961	12/16/2014	12/16/2044	Interest Rate Swap			92557W-AE-3	ASSURANT CLO III LTD-SERIES 2018-2A CLASS A	1	6,335,066	6,284,961
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		65,000,000	64,724,205	12/16/2014	12/16/2044	Interest Rate Swap			04624H-AC-1	KKR CLO LTD 22-SERIES 22A CLASS B	1	65,000,000	64,724,205
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,448,926	9,389,297	12/16/2014	12/16/2044	Interest Rate Swap			48252W-AC-7	ABSON CLO LTD-BABSON 2014-1A BR	1	9,448,926	9,389,297
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,999,937	12/16/2014	12/16/2044	Interest Rate Swap			05618D-AN-4		1	7,000,000	6,999,937

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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		2,045,000	2,013,499	12/16/2014	12/16/2044	Interest Rate Swap			056162-AQ-3	Babson CLO Ltd 2015-1-BABSN 2015-1A BR	1	2,045,000	2,013,499
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,736,914	12/16/2014	12/16/2044	Interest Rate Swap			69703P-AE-9	Palmer Square CLO 2018-1-PLMRS 2018-1A B	1	3,900,000	3,736,914
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	36,000,000	63,625,218	12/16/2014	12/16/2044	Interest Rate Swap		26,228,418	39808C-AA-3	Gridiron Fdg LLC Sr Secd Nt	2	36,000,000	37,396,800
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,900,000	25,365,942	12/16/2014	12/16/2044	Interest Rate Swap			14307P-AE-5	Carlyle Global Market St-SERIES C17A CLASS A1BR	1	25,900,000	25,365,942
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,500,000	23,499,507	12/16/2014	12/16/2044	Interest Rate Swap			05618D-AL-8	BABSON CLO LTD-BABSN 2014-1A A2R SOUND POINT CLO LTD-SERIES 2017-2A CLASS A	1	23,500,000	23,499,507
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,100,000	23,077,085	12/16/2014	12/16/2044	Interest Rate Swap			83610K-AA-1	LMI LTD PARTNERSHIP-SERIES 13A CLASS BR	1	23,100,000	23,077,085
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,736,549	12/16/2014	12/16/2044	Interest Rate Swap			50184K-AU-2	321 HENDERSON RECEIVABLE-SERIES 05-1A CLASS A1	1	12,750,000	12,736,549
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,712,534	12,682,370	12/16/2014	12/16/2044	Interest Rate Swap			88576P-AE-3	VOYA 2018-1A A1	1	12,712,534	12,682,370
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,793,052	13,877,542	12/16/2014	12/16/2044	Interest Rate Swap			92917A-AA-4	MERCER FIELD CLO LP-MERCL 2017-1A A2	1	13,793,052	13,877,542
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,920,180	12/16/2014	12/16/2044	Interest Rate Swap			58806P-AC-2	NetNet Student Loan Trus-NSLT 2018-5A B	1	20,000,000	19,920,180
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,500,000	11,370,592	12/16/2014	12/16/2044	Interest Rate Swap			64034B-AB-7	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	1	11,500,000	11,370,592
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,493,047	22,332,825	12/16/2014	12/16/2044	Interest Rate Swap			94949J-AA-3	BOWMAN PARK CLO LTD-BOWPK 2014-1A CR	1	22,493,047	22,332,825
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,950,000	5,950,065	12/16/2014	12/16/2044	Interest Rate Swap			10302V-BG-9	ANCHORAGE CAPITAL CLO LT-SERIES 2015-6A CLASS AR	1	5,950,000	5,950,065
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,495,886	8,489,052	12/16/2014	12/16/2044	Interest Rate Swap			03328Q-AN-1	SENECA PARK CLO LTD-SPARK 2014-1A AR	1	8,495,886	8,489,052
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,643,926	9,651,439	12/16/2014	12/16/2044	Interest Rate Swap			817176-AL-4	Goldentree Loan Managem-GLM 2017-1A B1	1	9,643,926	9,651,439
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,431,933	12/16/2014	12/16/2044	Interest Rate Swap			38136F-AG-8	Obam 2018-5 Ltd-SERIES 18-5A CLASS B1	1	13,500,000	13,431,933
57629*CI9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,100,000	10,970,130	12/16/2014	12/16/2044	Interest Rate Swap			12481Q-AE-5	MASSMUTUAL ASSET FIN LLC SR SEC0	1	11,100,000	10,970,130
57629*CU3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	328,073,426	361,760,313	12/16/2014	12/16/2044	Interest Rate Swap		25,272,323	57542Z-AO-7	REV NT ANCHORAGE CAPITAL CLO LT-SERIES 2015-6A CLASS AR	4	328,073,426	336,487,990
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	200,000,000	16,891,820	36,693,525	12/16/2014	12/16/2044	Interest Rate Swap		19,815,292	03328Q-AN-1	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	16,891,820	16,878,233
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,935,705	12/16/2014	12/16/2044	Interest Rate Swap			94950J-AC-5	FLATIRON CLO LTD-FLAT 2017-1A B ... GALLATIN CLO LTD-SERIES 17-1A CLASS B	1	5,000,000	4,935,705
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,780,000	6,703,000	12/16/2014	12/16/2044	Interest Rate Swap			33882G-AB-4	OHA Credit Funding 1 LTD-SERIES 18-1A CLASS A2	1	6,780,000	6,703,000
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,750,000	9,731,524	12/16/2014	12/16/2044	Interest Rate Swap			36361U-AC-4	Dryden 58 Clo Ltd-DRLSLF 2018-58A A1	1	9,750,000	9,731,524
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,400,000	10,270,114	12/16/2014	12/16/2044	Interest Rate Swap			67115W-AE-0	BENEFIT STREET PARTNERS -SERIES 2017-12A CLASS A1	1	10,400,000	10,270,114
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,696,510	21,699,854	12/16/2014	12/16/2044	Interest Rate Swap			26245R-AA-8	RR 2 LTD-SERIES 17-2A CLASS A2 ... OAKTREE CLO LTD-SERIES 14-1A CLASS A1R	1	21,696,510	21,699,854
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,675,000	9,665,412	12/16/2014	12/16/2044	Interest Rate Swap			08179H-AA-8	Carlyle US CLO 2013-3 Re Term Loan	1	9,675,000	9,665,412
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,426,518	12/16/2014	12/16/2044	Interest Rate Swap			78109Q-AE-8	RACEP 2013-8A	1	8,500,000	8,426,518
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,120,000	17,129,450	12/16/2014	12/16/2044	Interest Rate Swap			674000-AN-4	MASSMUTUAL ASSET FIN LLC SR SEC0	1	17,120,000	17,129,450
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,075,000	18,916,678	12/16/2014	12/16/2044	Interest Rate Swap			14315J-NN-5	REV NT AIMCO CLO Series 2015-A-SERIES 15-AA CLASS BR	4	19,075,000	18,916,678
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,385,513	21,368,873	12/16/2014	12/16/2044	Interest Rate Swap			74982L-AN-0		1	21,385,513	21,368,873
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		56,000,000	57,436,311	12/16/2014	12/16/2044	Interest Rate Swap			57542Z-AO-7		4	56,000,000	57,436,311
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,400,000	6,372,883	12/16/2014	12/16/2044	Interest Rate Swap			00900L-AH-7		1	6,400,000	6,372,883

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	4,965,201	6,648,510	02/05/2015	02/05/2045	Interest Rate Swap		1,696,670	12551J-AG-1	CIFC Funding 2017-IV Ltd-SERIES 17-4A CLASS B	1	4,965,201	4,951,840
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,020,000	9,995,651	02/05/2015	02/05/2045	Interest Rate Swap			92912V-AS-4	VOYA CLO LTD-VOYA 2014-2A BR MANUF & TRADERS TRUST CO-SUBORDINATED NOTE	1	10,020,000	9,995,651
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,511,343	10,471,871	02/05/2015	02/05/2045	Interest Rate Swap			564759-QB-7	TCI-CENT CLO 2016-1 LTD.-SERIES 17-1A CLASS A2	1	10,511,343	10,471,871
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,460,594	02/05/2015	02/05/2045	Interest Rate Swap			87806L-AE-6	BABSON CLO LTD-SERIES 17-1A CLASS B1	1	13,500,000	13,460,594
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,383,158	02/05/2015	02/05/2045	Interest Rate Swap			06760B-AE-2		1	13,500,000	13,383,158
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,600,000	9,485,569	02/05/2015	02/05/2045	Interest Rate Swap			63941R-AC-4	NAVSL 2019-2A B HIGHBRIDGE LOAN MANAGEME-SERIES 2014 CLAS A2R	1	9,600,000	9,485,569
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,700,000	12,590,043	02/05/2015	02/05/2045	Interest Rate Swap			40436X-AE-7	BAIN CAPITAL CREDIT CLO -SERIES 17-1A CLASS A1	1	12,700,000	12,590,043
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,201,142	02/05/2015	02/05/2045	Interest Rate Swap			05682Q-AC-0	BlueMountain CLO 2015-3 -BLUEM 2015-3A A2R	1	11,200,000	11,201,142
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,723,025	02/05/2015	02/05/2045	Interest Rate Swap			09628J-AN-1	AVERY POINT CLO LTD-SERIES 13-3A CLASS B1R	1	13,900,000	13,723,025
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,300,000	11,299,785	02/05/2015	02/05/2045	Interest Rate Swap			053633-AH-6		1	11,300,000	11,299,785
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,745,702	6,875,664	02/05/2015	02/05/2045	Interest Rate Swap			00287Y-AL-3	AbbVie Inc-SENIOR UNSECURED NOTE	2	6,745,702	6,875,664
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,400,000	7,263,159	02/05/2015	02/05/2045	Interest Rate Swap			55821T-AC-1	Madison Park Funding Ltd-SERIES 18-30A CLASS B	1	7,400,000	7,263,159
57629*CY5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,085,000	1,069,449	02/05/2015	02/05/2045	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	1,085,000	1,069,449
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	5,280,000	6,771,033	02/05/2015	02/05/2045	Interest Rate Swap		1,491,022	00900C-AE-4	AIMCO-AIMCO 2017-AA C AVERY POINT CLO LTD-SERIES 13-3A CLASS AR	1	5,280,000	5,280,011
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,834,285	10,838,781	02/05/2015	02/05/2045	Interest Rate Swap			053633-AG-8	AVERY POINT IV CLO LTD-SERIES 14-1A CLASS BR	1	10,834,285	10,838,781
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		32,100,000	32,099,230	02/05/2015	02/05/2045	Interest Rate Swap			05363U-AU-7	NORTHSTAR EDUCATION FINA-SERIES 2004-1 CLASS B1	1	32,100,000	32,099,230
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,912,526	24,666,468	02/05/2015	02/05/2045	Interest Rate Swap			66704J-AY-4	Regatta Funding Ltd.-REG11 2018-1A A	1	24,912,526	24,666,468
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,000,000	26,710,047	02/05/2015	02/05/2045	Interest Rate Swap			75887X-AA-5	10G US CLO 2018-1 LTD-SERIES 2018-1A CLASS A1	1	27,000,000	26,710,047
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,782,333	02/05/2015	02/05/2045	Interest Rate Swap			449258-AA-0	ACTAVIS FUNDING SCS-SENIOR UNSECURED NOTE	2	11,900,000	11,782,333
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,266,898	5,467,643	02/05/2015	02/05/2045	Interest Rate Swap			00507U-AS-0	Neuberger Berman CLO Ltd-NEUB 2018-30A A2	1	5,266,898	5,467,643
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,966,960	02/05/2015	02/05/2045	Interest Rate Swap			64132M-AC-2	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A2	1	10,000,000	9,966,960
57629*C22	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,087,406	02/05/2015	02/05/2045	Interest Rate Swap			17181T-AC-5	Carlyle US CLO 2015-1 Ri Term Loan	1	11,200,000	11,087,406
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	24,425,000	26,102,399	02/05/2015	02/05/2045	Interest Rate Swap		1,674,956	14315J-TT-6	Madison Park Funding XIV-HDPK 2014-14A BRR	1	24,425,000	24,427,443
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,898,045	02/05/2015	02/05/2045	Interest Rate Swap			55818R-BA-3	Atlas Senior Loan Fund X-ATCLO 2018-10A B	1	15,000,000	14,898,045
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,600,000	11,389,193	02/05/2015	02/05/2045	Interest Rate Swap			04942J-AE-1	ROCKFORD TOWER CLO LTD-ROCKT 2017-1A B	1	11,600,000	11,389,193
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,090,000	18,089,656	02/05/2015	02/05/2045	Interest Rate Swap			77340E-AC-0	NEUBERGER BERMAN CLO LTD-NEUB 2013-14A B1R	1	18,090,000	18,089,656
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,730,000	5,713,973	02/05/2015	02/05/2045	Interest Rate Swap			64129J-AU-4	ARES XLVII CLO Ltd-SERIES 18-47A CLASS A2	1	5,730,000	5,713,973
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,900,000	25,277,597	02/05/2015	02/05/2045	Interest Rate Swap			04016V-AC-9		1	25,900,000	25,277,597
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,300,000	4,302,077	02/05/2015	02/05/2045	Interest Rate Swap			87248T-AE-5	TICP CLO LTD-SERIES 2017 CLASS 7A '00P CLO 2017-14 Ltd-SERIES 17-14A CLASS A2	1	4,300,000	4,302,077
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,400,000	11,159,551	02/05/2015	02/05/2045	Interest Rate Swap			67097Q-AE-5	Benefit Street Partners -SERIES 18-14A CLASS A2	1	11,400,000	11,159,551
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,400,000	13,017,658	02/05/2015	02/05/2045	Interest Rate Swap			08179L-AC-5		1	13,400,000	13,017,658

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,935,705	02/05/2015	02/05/2045	Interest Rate Swap			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	5,000,000	4,935,705
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,986,434	02/05/2015	02/05/2045	Interest Rate Swap			14315R-AE-1	Carlyle Global Market St-SERIES 18-4A CLASS A2	1	7,000,000	6,986,434
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,100,000	3,101,283	02/05/2015	02/05/2045	Interest Rate Swap			04943A-AG-4	ATLAS SENIOR LOAN FUND L-SERIES 17-8A CLASS C	1	3,100,000	3,101,283
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	45,000,000	46,253,582	02/05/2015	02/05/2045	Interest Rate Swap		1,342,987	05683H-AC-9	BAIN CAPITAL CREDIT CLO -SERIES 2017-2A CLASS AR	1	45,000,000	44,910,585
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,325,000	7,277,783	02/05/2015	02/05/2045	Interest Rate Swap			55954K-AC-9	MAGNETITE CLO LTD-SERIES 17-19A CLASS B	1	7,325,000	7,277,783
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,200,000	7,157,988	02/05/2015	02/05/2045	Interest Rate Swap			92915Q-AG-8	VOYA CLO LTD-SERIES 2017-3A CLASS A2	1	7,200,000	7,157,988
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,667,406	02/05/2015	02/05/2045	Interest Rate Swap			40436Q-AN-2	HPS Loan Management 9-20-HLM 9A-2016 A2R	1	12,750,000	12,667,406
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,000,000	24,895,250	02/05/2015	02/05/2045	Interest Rate Swap			87249Q-AA-8	TICP CLO Ltd-TICP 2018-11A A	1	25,000,000	24,895,250
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,401,325	14,363,665	02/05/2015	02/05/2045	Interest Rate Swap			06760E-AA-4	Babson CLO Ltd 2013-1-SERIES 2013-1A CLASS AR	1	14,401,325	14,363,665
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,130,342	24,733,382	02/05/2015	02/05/2045	Interest Rate Swap			24820R-AA-6	Statoil ASA-SENIOR UNSECURED NOTE	1	21,130,342	24,733,382
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	391,457	10,701,564	12/05/2016	12/05/2046	Interest Rate Swap		10,303,391	MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN SMB PRIVATE ED LN TR 201-SMB	1	391,457	398,173
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,430,395	19,797,707	12/05/2016	12/05/2046	Interest Rate Swap			78449F-AC-5	PRIVATE ED LN TR 2016-A NT	1	19,430,395	19,797,707
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,420,000	23,094,212	12/05/2016	12/05/2046	Interest Rate Swap			63940F-AC-1	NAVIENT STUDENT LOAN TRU-SERIES 16-2 CLASS A3	1	22,420,000	23,094,212
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,338,827	10,441,695	12/05/2016	12/05/2046	Interest Rate Swap			26827X-AA-1	EMC GROUP STUDENT LOAN -SERIES 2016-1A CLASS A	1	10,338,827	10,441,695
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,500,000	23,487,005	12/05/2016	12/05/2046	Interest Rate Swap			04941T-AS-9	Atlas Senior Loan Fund V-SERIES 16-7A CLASS A1R	1	23,500,000	23,487,005
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,500,000	11,429,770	12/05/2016	12/05/2046	Interest Rate Swap			92916M-AB-7	VOYA CLO LTD-VOYA 2017-1A A2	1	11,500,000	11,429,770
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,861,880	12/05/2016	12/05/2046	Interest Rate Swap			67109Y-AN-4	Oak Hill Credit Partners-SERIES 15-12A CLASS A2R	1	10,000,000	9,861,880
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,330,000	4,329,818	12/05/2016	12/05/2046	Interest Rate Swap			85816B-CS-7	STEELE CREEK CLO LTD-SERIES 15-1A CLASS CR	1	4,330,000	4,329,818
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,200,000	4,038,699	12/05/2016	12/05/2046	Interest Rate Swap			08180X-AU-6	Benefit Street Partners -BSP 2015-8A BR	1	4,200,000	4,038,699
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,380,000	4,340,497	12/05/2016	12/05/2046	Interest Rate Swap			22616C-AE-3	CRESTLINE DENALI CLO XV -SERIES 17-1A CLASS C	1	4,380,000	4,340,497
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,879,720	12/05/2016	12/05/2046	Interest Rate Swap			04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	9,879,720
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,000,000	12/05/2016	12/05/2046	Interest Rate Swap			03328W-AL-2	Anchorage Capital CLO 9 -SERIES 16-9A CLASS BR	1	5,000,000	5,000,000
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,922,590	21,439,990	12/05/2016	12/05/2046	Interest Rate Swap		10,329,990	MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS A4	1	10,922,590	11,110,000
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,669,596	11,747,561	12/05/2016	12/05/2046	Interest Rate Swap			78442G-PQ-3	SLM STUDENT LN TR 2006-2 LN BKD NT CL A-6	1	11,669,596	11,747,561
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		372,911	371,169	12/05/2016	12/05/2046	Interest Rate Swap			64034N-AB-1	NSLT 2019-2A B	1	372,911	371,169
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,651,364	8,649,063	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BR-1	NELNET STUDENT LOAN TRUS-SERIES 2005-1 CLASS A5	1	8,651,364	8,649,063
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,952,223	12,102,628	12/05/2016	12/05/2046	Interest Rate Swap			78448Q-AD-0	SMB PRIVATE EDUCATION LO-SMB 2015-B A3	1	11,952,223	12,102,628
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,015,278	10,359,559	12/05/2016	12/05/2046	Interest Rate Swap			78442G-RX-6	SLM STUDENT LN TR 2006-2 LN BKD NT CL A-6	1	10,015,278	10,359,559
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,242,922	4,349,714	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EX-0	SLM STUDENT LOAN TRUST-SERIES 2002-7CLASS A11	1	4,242,922	4,349,714
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,769,638	9,837,507	12/05/2016	12/05/2046	Interest Rate Swap			10620N-AX-6	BRAZOS HIGHER EDUCATION -SER 2006-2 STUDENT LN REV NT	1	9,769,638	9,837,507
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,188,427	7,227,841	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BX-8	NELNET STUDENT LOAN TRUS-SERIES 2005-2 CLASS A5	1	7,188,427	7,227,841

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,851,803	10,026,616	12/05/2016	12/05/2046	Interest Rate Swap			83715R-AF-9	SOUTH CAROLINA STUDENT L-SERIES 14-1 CLASS A2	1	9,851,803	10,026,616
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,775,871	1,773,340	12/05/2016	12/05/2046	Interest Rate Swap			00432C-AV-3	ACCESS GROUP INC-SERIES 2003-A CLASS A3	1	1,775,871	1,773,340
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,820	12/05/2016	12/05/2046	Interest Rate Swap			88322U-AN-9	THACHER PARK CLO-THRPK 2014-1A CR Regatta Funding Ltd.-REG11 2018-1A	1	5,000,000	4,999,820
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	12,836,616	12/05/2016	12/05/2046	Interest Rate Swap			75887X-AC-1	ROCKALL CLO BV Variable Funding Note- USD	1	13,000,000	12,836,616
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,626,289	4,626,289	12/05/2016	12/05/2046	Interest Rate Swap			77277L-A7-2	VIBRANT CLO LTD-SERIES 2016-5A CLASS A	1	4,626,289	4,626,289
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,300,000	4,302,503	12/05/2016	12/05/2046	Interest Rate Swap			92558A-AA-8	CIFC Funding 2018-1 Ltd-SERIES 18-1A CLASS B	1	4,300,000	4,302,503
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,350,000	7,163,406	12/05/2016	12/05/2046	Interest Rate Swap			12551R-AC-2	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	7,350,000	7,163,406
57629*DJ7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,939,000	12/05/2016	12/05/2046	Interest Rate Swap			88434H-AE-3	AEROVIAS DE MEXICO SA USD TERM LN NAVIENT STUDENT LOAN TRU-SERIES 2016-6A CLASS A3	1	5,000,000	4,939,000
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	16,259,765	26,520,290	12/05/2016	12/05/2046	Interest Rate Swap		9,981,540	MXP001-TT-1	MONTANA HIGHER EDUCATION-SERIES 12-1 CLASS A3	1	16,259,765	16,538,750
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		65,300,000	67,174,828	12/05/2016	12/05/2046	Interest Rate Swap			63940L-AC-8	ATRIUM XIV LLC-ATRM 14A A2A SLM STUDENT LOAN TRUST-SERIES 2002-7 CLASS A10	1	65,300,000	67,174,828
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,163,717	23,730,601	12/05/2016	12/05/2046	Interest Rate Swap			61205P-AL-3	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A10	1	23,163,717	23,730,601
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,879,720	12/05/2016	12/05/2046	Interest Rate Swap			04965L-AE-8	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A14	1	10,000,000	9,879,720
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		898,432	900,871	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EW-2	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A2	1	898,432	900,871
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,827,588	1,845,231	12/05/2016	12/05/2046	Interest Rate Swap			429827-AK-4	SOUTH CAROLINA STUDENT L-SR UNSECURED	1	1,827,588	1,845,231
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,196,137	1,246,244	12/05/2016	12/05/2046	Interest Rate Swap			429827-AP-3	SLC STUDENT LN TR 2006-1 ASSET BK NT CL A-6	1	1,196,137	1,246,244
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,115,282	1,145,412	12/05/2016	12/05/2046	Interest Rate Swap			429827-AB-4	MELNET STUDENT LOAN TRUS-SERIES 2015-2A CLASS B	1	1,115,282	1,145,412
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,867,398	1,867,171	12/05/2016	12/05/2046	Interest Rate Swap			83715A-AJ-8	IOWA STUDENT LOAN LIQUID-SERIES 2012-1 CLASS B	1	1,867,398	1,867,171
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,672,756	1,735,691	12/05/2016	12/05/2046	Interest Rate Swap			784427-AF-3	PENNSYLVANIA ST HGR EDU -SERIES 2006 CL B	1	1,672,756	1,735,691
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,708,293	1,812,241	12/05/2016	12/05/2046	Interest Rate Swap			640330-AC-3	CIT EDUCATION LOAN TRUST-SERIES 2007-1 CLASS B	1	1,708,293	1,812,241
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,857,782	1,944,683	12/05/2016	12/05/2046	Interest Rate Swap			462590-JT-8	SLM STUDENT LOAN TRUST-SERIES 2013-6 CLASS B	1	1,857,782	1,944,683
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,234,887	1,274,829	12/05/2016	12/05/2046	Interest Rate Swap			709163-GJ-2	Babson CLO Ltd 2015-1-BABSN 2015-1A CR	1	1,234,887	1,274,829
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,042,761	1,082,937	12/05/2016	12/05/2046	Interest Rate Swap			17284L-AB-0	2005-B CLASS A4	1	1,042,761	1,082,937
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,345,294	1,400,082	12/05/2016	12/05/2046	Interest Rate Swap			78448C-AH-2	SLM STUDENT LOAN TRUST-SERIES 2011-A CLASS A3	1	1,345,294	1,400,082
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,180,000	3,080,158	12/05/2016	12/05/2046	Interest Rate Swap			056162-AS-9	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS A4	1	3,180,000	3,080,158
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	13,653,238	23,871,700	12/05/2016	12/05/2046	Interest Rate Swap		9,984,200	MXP001-TT-1	SMB PRIVATE ED LN TR 2015-C LN BCK NT CL A-3	1	13,653,238	13,887,500
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,295,417	6,484,394	12/05/2016	12/05/2046	Interest Rate Swap			78448R-AD-8	SMB PRIVATE ED LOAN TR 2015-A LN BACKED NT A-3	1	6,295,417	6,484,394
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,520,668	5,698,647	12/05/2016	12/05/2046	Interest Rate Swap			78448P-AD-2	COLLEGIATE FUNDING SERVI-SERIES 2005-B CLASS A4	1	5,520,668	5,698,647
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,081,604	4,020,144	12/05/2016	12/05/2046	Interest Rate Swap			19458L-BH-2	SLM STUDENT LOAN TRUST-SERIES 2011-A CLASS A3	1	4,081,604	4,020,144
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,855,819	2,866,337	12/05/2016	12/05/2046	Interest Rate Swap			78446D-AC-3	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS A4	1	2,855,819	2,866,337
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,837,062	3,918,403	12/05/2016	12/05/2046	Interest Rate Swap			63939E-AD-6	SOUTH TX HIGHER ED AUTH REV SER 1 CL A-3	1	3,837,062	3,918,403
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,253,388	16,519,028	12/05/2016	12/05/2046	Interest Rate Swap			840555-DA-1		1	16,253,388	16,519,028

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,878,020	7,975,611	12/05/2016	12/05/2046	Interest Rate Swap			00432C-CW-9	ACCESS GROUP INC-SERIES 2005-B CLASS A3	1	7,878,020	7,975,611
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,039,059	11,202,056	12/05/2016	12/05/2046	Interest Rate Swap			28148W-AC-7	EDUCATIONAL FUNDING OF T-SERIES 2011-1 CLASS B	1	10,039,059	11,202,056
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,352,780	9,790,732	12/05/2016	12/05/2046	Interest Rate Swap			78444C-AE-3	SLM STUDENT LOAN TRUST-SERIES 07-6 CLASS A5	1	9,352,780	9,790,732
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,073,956	8,520,992	12/05/2016	12/05/2046	Interest Rate Swap			78443F-AF-4	SLM STUDENT LOAN TRUST-SERIES 2007-5 CLASS A6	1	8,073,956	8,520,992
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,782,014	6,867,218	12/05/2016	12/05/2046	Interest Rate Swap			00400V-AB-3	ACADEMIC LOAN FUNDING TR-ALFT 2012-1A A2	1	6,782,014	6,867,218
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		698,962	739,124	12/05/2016	12/05/2046	Interest Rate Swap			462592-AD-8	IOWA STUDENT LOAN LIQUID-SERIES 2005-1 CLASS B	1	698,962	739,124
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,167,147	8,994,807	12/05/2016	12/05/2046	Interest Rate Swap			78442G-QA-7	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	9,167,147	8,994,807
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,664,451	1,674,093	12/05/2016	12/05/2046	Interest Rate Swap			38021F-AB-7	GOAL CAPITAL FUNDING TRU-SERIES 2015-1 CLASS B	2	1,664,451	1,674,093
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,685,414	1,778,024	12/05/2016	12/05/2046	Interest Rate Swap			28138J-AB-0	EDUCATIONAL SERVICES OF -SERIES 15-2 CLASS B	1	1,685,414	1,778,024
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,297,603	2,234,460	12/05/2016	12/05/2046	Interest Rate Swap			78442G-GM-2	SLM STUDENT LOAN TRUST 2003-4 LN BXD CTF CL B	2	2,297,603	2,234,460
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,358,618	1,342,614	12/05/2016	12/05/2046	Interest Rate Swap			28090A-AB-5	EDUCATIONAL SERVICES OF -2014-4 SERIES B	1	1,358,618	1,342,614
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		303,833	305,207	12/05/2016	12/05/2046	Interest Rate Swap			83401L-AA-2	SOCIAL PROFESSIONAL LOAN-SERIES 2015-A CLASS A1	1	303,833	305,207
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,200,000	7,044,624	12/05/2016	12/05/2046	Interest Rate Swap			03767M-AE-8	Apidos CLO-SERIES 18-29A CLASS A1B	1	7,200,000	7,044,624
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,400,000	4,329,688	12/05/2016	12/05/2046	Interest Rate Swap			39729R-AC-2	Greenwood Park CLO Ltd-SERIES 18-1A CLASS B	1	4,400,000	4,329,688
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,955,840	12/05/2016	12/05/2046	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	5,000,000	4,955,840
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	7,547,419	16,018,286	12/06/2016	12/06/2046	Interest Rate Swap		8,655,174	281397-AP-4	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A1	1	7,547,419	7,363,112
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,915,553	12,120,000	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN NORTHSTAR EDUCATION FINA-NEF 2016-1A	1	11,915,553	12,120,000
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,455,711	3,516,835	12/06/2016	12/06/2046	Interest Rate Swap			66705R-AA-7	EDUCATION LOAN ASSET-BAC-SERIES 2003-1 CLASS A2	1	3,455,711	3,516,835
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,668,858	6,819,788	12/06/2016	12/06/2046	Interest Rate Swap			281397-AB-5	MELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R1	1	6,668,858	6,819,788
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,382,480	5,616,831	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-CK-5	SLM STUDENT LOAN TRUST-SERIES 2006-7 CLASS A6B	2	5,382,480	5,616,831
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,738,338	4,948,659	12/06/2016	12/06/2046	Interest Rate Swap			78443G-AJ-0	BRAZOS TX HGR EDU AUTH REVENUE BOND	1	4,738,338	4,948,659
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,364,949	5,013,003	12/06/2016	12/06/2046	Interest Rate Swap			106238-LJ-5	EDLINC STUDENT LOAN FUND-SERIES 2012-1 CLASS B	1	4,364,949	5,013,003
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,653,759	5,797,676	12/06/2016	12/06/2046	Interest Rate Swap			28108Q-AB-0	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A2	1	5,653,759	5,797,676
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		413,850	399,543	12/06/2016	12/06/2046	Interest Rate Swap			281397-AQ-2	GOAL CAPITAL FUNDING TR 2010-1 STUDENT LN BKO NT	1	413,850	399,543
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,445,535	2,498,963	12/06/2016	12/06/2046	Interest Rate Swap			38021E-AA-2	MELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R2	1	2,445,535	2,498,963
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,585,453	4,138,718	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-CM-1	NORTH CAROLINA STATE EDU-SERIES 2011-2 CLASS A3	2	3,585,453	4,138,718
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,753,495	3,782,821	12/06/2016	12/06/2046	Interest Rate Swap			65826Z-GD-6	SLM STUDENT LOAN TRUST-SERIES 2004-1 CLASS A6	1	3,753,495	3,782,821
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,903,542	1,983,523	12/06/2016	12/06/2046	Interest Rate Swap			78442G-KW-5	SLM STUDENT LN TR 2006-5-NOTE CL B	1	1,903,542	1,983,523
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,598,530	14,892,399	12/06/2016	12/06/2046	Interest Rate Swap			83149E-AG-2	Dryden 64 CLO Ltd-DRLSF 2018-64A B	1	14,598,530	14,892,399
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,634,037	12/06/2016	12/06/2046	Interest Rate Swap			26251L-AE-4	DRB PRIME STUDENT LOAN T-SERIES 2015-D CLASS A1	1	13,900,000	13,634,037
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,579,091	2,626,422	12/06/2016	12/06/2046	Interest Rate Swap			23341K-AA-3		1	2,579,091	2,626,422

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,828,641	9,312,340	12/06/2016	12/06/2046	Interest Rate Swap			64031C-AB-8	NELNET STUDENT LOAN TRUS-SERIES 2012-2A CLASS B	1	8,828,641	9,312,340
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,895,603	12,918,498	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PS-9	SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS B	1	12,895,603	12,918,498
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,900,055	12/06/2016	12/06/2046	Interest Rate Swap			87244A-BC-3	WIND RIVER CLO LTD-SERIES 12-1A CLASS BR	1	3,900,000	3,900,055
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,938,344	12/06/2016	12/06/2046	Interest Rate Swap			03328T-AS-4	ANCHORAGE CAPITAL CLO 7 -ANCHC 2015-7A B1R	1	8,000,000	7,938,344
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	2,957,001	12/06/2016	12/06/2046	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	3,000,000	2,957,001
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,922,590	20,057,788	12/06/2016	12/06/2046	Interest Rate Swap		8,947,788	MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN SOUTH CAROLINA STUDENT L-SERIES 2014-1 CLASS B	1	10,922,590	11,110,000
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,654,078	9,778,264	12/05/2016	12/05/2046	Interest Rate Swap			83715R-AG-7	SLC STUDENT LOAN TRUST-SERIES 2005-1 CLASS B	1	9,654,078	9,778,264
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,105,721	6,458,740	12/06/2016	12/06/2046	Interest Rate Swap			78442G-AE-1	SLM STUDENT LOAN TRUST-SERIES 2005-8 CLASS B	1	6,105,721	6,458,740
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,222,517	5,383,970	12/06/2016	12/06/2046	Interest Rate Swap			78442G-OT-6	SLM STUDENT LOAN TRUST-SERIES 2005-3 CLASS B	1	5,222,517	5,383,970
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,453,361	5,612,585	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PD-2	KEYCORP STUDENT LOAN TRU-SERIES 1999-B CLASS CTFS	1	5,453,361	5,612,585
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,464,433	2,545,118	12/06/2016	12/06/2046	Interest Rate Swap			493268-AU-0	SLM STUDENT LOAN TRUST-SERIES 2013-2 CLASS B	1	2,464,433	2,545,118
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,672,670	6,980,446	12/06/2016	12/06/2046	Interest Rate Swap			78446C-AB-7	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS B	1	6,672,670	6,980,446
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,955,000	6,820,933	12/06/2016	12/06/2046	Interest Rate Swap			63938E-AE-4	NELNET STUDENT LOAN TRUS-SERIES 2006-3 CLASS B	1	6,955,000	6,820,933
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,466,400	4,315,324	12/06/2016	12/06/2046	Interest Rate Swap			64031A-AJ-5	NAVIENT STUDENT LOAN TRU-SERIES 2015-3 CLASS B	1	4,466,400	4,315,324
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,214,159	6,837,595	12/06/2016	12/06/2046	Interest Rate Swap			63939L-AC-1	SLM STUDENT LOAN TRUST-SERIES 2013-1 CLASS B	1	6,214,159	6,837,595
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,516,315	6,628,172	12/06/2016	12/06/2046	Interest Rate Swap			78447M-AD-0	NELNET STUDENT LOAN TRUS-SERIES 2014-1A CLASS B	1	6,516,315	6,628,172
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,394,404	5,600,306	12/06/2016	12/06/2046	Interest Rate Swap			64033J-AB-1	COLLEGE LOAN CORPORATION-SERIES 2005-2 CLASS B	1	5,394,404	5,600,306
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,331,992	3,388,734	12/06/2016	12/06/2046	Interest Rate Swap			194266-AE-2	NELNET STUDENT LOAN TRUS-SERIES 2014-5A CLASS B	1	3,331,992	3,388,734
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,492,504	4,725,300	12/06/2016	12/06/2046	Interest Rate Swap			64033N-AB-2	COLLEGE LOAN CORPORATION-SERIES 2004-1 CLASS B	1	4,492,504	4,725,300
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		393,007	417,812	12/06/2016	12/06/2046	Interest Rate Swap			194262-CF-6	SLM STUDENT LOAN TRUST-SERIES 2004-3 CLASS B	1	393,007	417,812
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,578,429	2,661,731	12/06/2016	12/06/2046	Interest Rate Swap			78442G-LJ-3	NELNET STUDENT LOAN TRUS-SERIES 2012-1A CLASS B	1	2,578,429	2,661,731
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,650,000	3,554,694	12/06/2016	12/06/2046	Interest Rate Swap			64032A-AB-1	NELNET STUDENT LOAN TRUS-SERIES 2007-2A CLASS A4A2	1	3,650,000	3,554,694
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,117,025	3,377,583	12/06/2016	12/06/2046	Interest Rate Swap			64032F-AH-7	NELNET STUDENT LOAN TRUS-SERIES 2014-2A CLASS B	1	3,117,025	3,377,583
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,294,237	3,334,036	12/06/2016	12/06/2046	Interest Rate Swap			64033L-AD-2	NELNET STUDENT LOAN TRUS-SERIES 2014-3A CLASS B	1	3,294,237	3,334,036
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,240,000	3,223,364	12/06/2016	12/06/2046	Interest Rate Swap			64033K-AB-8	Apidos CLO-SERIES 18-29A CLASS A2	1	3,240,000	3,223,364
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,750,000	14,555,580	12/06/2016	12/06/2046	Interest Rate Swap			03767M-AG-3	Magnetite VIII Ltd-MAGNE 2014-8A CR2	1	14,750,000	14,555,580
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,377,983	12/06/2016	12/06/2046	Interest Rate Swap			55952Y-AT-4	Ares XXXVIII CLO Ltd-SERIES 15-38A CLASS BR	1	4,500,000	4,377,983
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,582,737	12/06/2016	12/06/2046	Interest Rate Swap			04015U-AJ-7	KKR CLO 12 Ltd-KKR 12 BR2	1	6,700,000	6,582,737
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	2,980,257	12/06/2016	12/06/2046	Interest Rate Swap			48250R-BN-5	KKR CLO 16 Ltd-SERIES 16 CLASS A1R	1	3,000,000	2,980,257
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	15,000,000	23,562,549	12/06/2016	12/06/2046	Interest Rate Swap		8,562,069	48251B-AL-4	Elmwood CLO II Ltd-ELMW2 2019-2A B	1	15,000,000	15,000,480
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,300,000	11,327,041	12/05/2016	12/05/2046	Interest Rate Swap			29001L-AC-5		1	11,300,000	11,327,041

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		992,963	1,010,000	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN	1	992,963	1,010,000
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,852,180	9,912,530	12/06/2016	12/06/2046	Interest Rate Swap			92917A-AA-4	VOYA 2018-1A A1	1	9,852,180	9,912,530
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,500,000	1,486,752	12/06/2016	12/06/2046	Interest Rate Swap			13876J-AE-2	1RA B	1	1,500,000	1,486,752
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,050,000	10,945,743	12/06/2016	12/06/2046	Interest Rate Swap			03331J-AJ-1	Anchorage Capital CLO Lt-ANCHC 2018-10A B	1	11,050,000	10,945,743
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,575,000	12,449,740	12/06/2016	12/06/2046	Interest Rate Swap			056162-AN-0	Babson CLO Ltd 2015-1-BABSN 2015-1A AR	1	12,575,000	12,449,740
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,871,280	12/06/2016	12/06/2046	Interest Rate Swap			83609Y-AE-6	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS B	1	10,000,000	9,871,280
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,213,944	12/06/2016	12/06/2046	Interest Rate Swap			78448A-AD-5	SLM STUDENT LOAN TRUST-SERIES 2013-4 CLASS B	1	3,200,000	3,213,944
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,656,928	1,820,867	12/06/2016	12/06/2046	Interest Rate Swap			00432C-DE-8	ACCESS GROUP INC-SERIES 2006-1 CLASS B	1	1,656,928	1,820,867
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,126,111	2,127,554	12/06/2016	12/06/2046	Interest Rate Swap			78442G-KN-5	SLM STUDENT LOAN TRUST-SERIES 2003-14 CLASS A6	1	2,126,111	2,127,554
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,612,157	1,561,750	12/06/2016	12/06/2046	Interest Rate Swap			493268-BW-5	KEYCORP STUDENT LOAN TRU-SERIES 2004-A CLASS 1B	1	1,612,157	1,561,750
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		606,747	647,257	12/06/2016	12/06/2046	Interest Rate Swap			429827-AR-9	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B1	1	606,747	647,257
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,035,407	2,166,830	12/06/2016	12/06/2046	Interest Rate Swap			429827-AS-7	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	2,035,407	2,166,830
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,956,023	2,138,732	12/06/2016	12/06/2046	Interest Rate Swap			64033T-AB-9	MELNET STUDENT LOAN TRUS-SERIES 2015-3A CLASS B	1	1,956,023	2,138,732
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,449,350	1,422,995	12/06/2016	12/06/2046	Interest Rate Swap			19458L-BD-1	COLLEGIATE FUNDING SERVI-SERIES 2005-A CLASS B	1	1,449,350	1,422,995
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,890,585	2,040,986	12/06/2016	12/06/2046	Interest Rate Swap			00435T-AB-7	ACCESS GROUP INC-SERIES 2015-1 CLASS B	1	1,890,585	2,040,986
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,788,507	2,801,945	12/06/2016	12/06/2046	Interest Rate Swap			78442G-RY-4	SLM STUDENT LOAN TRUST-SERIES 2006-2 CLASS B	1	2,788,507	2,801,945
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,228,294	3,174,093	12/06/2016	12/06/2046	Interest Rate Swap			194267-AN-2	COLLEGE LOAN CORPORATION-SERIES 2007-1 CLASS B2	1	3,228,294	3,174,093
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,284,230	2,145,085	12/06/2016	12/06/2046	Interest Rate Swap			92978J-AH-6	WACHOVIA STUDENT LOAN TR-SERIES 2006-1 CLASS B	1	2,284,230	2,145,085
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,812,141	1,872,319	12/06/2016	12/06/2046	Interest Rate Swap			83715R-AH-5	SOUTH CAROLINA STUDENT L-SERIES 15-A CLASS A	1	1,812,141	1,872,319
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,493,592	2,431,425	12/06/2016	12/06/2046	Interest Rate Swap			28137T-AB-9	EDUCATIONAL SERVICES OF -SERIES 2014-2 CLASS B	1	2,493,592	2,431,425
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,765,382	1,771,829	12/06/2016	12/06/2046	Interest Rate Swap			78443B-AK-2	SLM STUDENT LOAN TRUST-SERIES 2006-10 CLASS B	1	1,765,382	1,771,829
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,392,638	2,416,492	12/06/2016	12/06/2046	Interest Rate Swap			69340Q-AB-2	PENNSYLVANIA HIGHER EDUC-SERIES 2015-1A CLASS B	1	2,392,638	2,416,492
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,155,742	2,201,877	12/06/2016	12/06/2046	Interest Rate Swap			28137B-AB-5	EDUCATIONAL SERVICES OF -SERIES 2015-1 CLASS B	1	2,155,742	2,201,877
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		975,548	1,044,157	12/06/2016	12/06/2046	Interest Rate Swap			00432C-AR-2	ACCESS GROUP-STUDENT LN REVENUE INT	1	975,548	1,044,157
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,085,616	7,075,542	12/06/2016	12/06/2046	Interest Rate Swap			63939D-AD-7	NAVIENT STUDENT LOAN TRUST 2014-8 CL B	1	7,085,616	7,075,542
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,900,000	9,726,790	12/06/2016	12/06/2046	Interest Rate Swap			69688X-AU-5	Palmer Square CLO 2014-1-SERIES 2014-1A CLASS A2RR	1	9,900,000	9,726,790
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	23,500,000	31,809,218	12/06/2016	12/06/2046	Interest Rate Swap		8,567,389	92558V-AC-8	Vibrant CLO Ltd-SERIES 18-9A CLASS A2	1	23,500,000	23,241,829
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,800,000	10,742,296	12/06/2016	12/06/2046	Interest Rate Swap			94949J-AC-9	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A2	1	10,800,000	10,742,296
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,588,373	13,249,904	12/06/2016	12/06/2046	Interest Rate Swap			04017E-AC-2	ARES XXXIIR CLO LTD-SERIES 14-32RA CLASS A1B	1	13,588,373	13,249,904
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,790,000	8,664,426	12/06/2016	12/06/2046	Interest Rate Swap			55951P-BC-0	Magnetite VII Ltd-MAGNE 2012-7A A2R2	1	8,790,000	8,664,426
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,444,604	12/06/2016	12/06/2046	Interest Rate Swap			40436V-AB-7	HIGHBRIDGE LOAN MANAGEME-HLM 11A-17 B	1	13,560,000	13,444,604

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,760,187	14,750,471	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PL-4	SLM STUDENT LOAN TRUST-SERIES 2005-4 CLASS B	1	14,760,187	14,750,471
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,985,449	8,000,112	12/06/2016	12/06/2046	Interest Rate Swap			79410U-AN-1	SFB 2016-2A A1R	1	7,985,449	8,000,112
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,495,220	12/06/2016	12/06/2046	Interest Rate Swap			50189P-AN-2	LCM LTD PARTNERSHIP-SERIES 25A CLASS C2	1	2,500,000	2,495,220
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,762,801	6,740,425	12/06/2016	12/06/2046	Interest Rate Swap			87244A-BE-9	WIND RIVER CLO LTD-WINDR 2012-1A CR	1	6,762,801	6,740,425
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,523,306	7,491,353	12/06/2016	12/06/2046	Interest Rate Swap			66704J-AJ-7	Northstar Education Fina-REVENUE BONDS	1	7,523,306	7,491,353
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,995	12/06/2016	12/06/2046	Interest Rate Swap			03328W-AE-8	ANCHORAGE CAPITAL CLO LT-ANCHC 2016-9A C	1	5,000,000	4,999,995
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,750,000	4,750,157	12/06/2016	12/06/2046	Interest Rate Swap			55820N-AE-1	MADISON PARK FUNDING LTD-MIDPK 2016-24A C1	1	4,750,000	4,750,157
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,750,000	6,614,325	12/06/2016	12/06/2046	Interest Rate Swap			77341D-AE-7	Rockford Tower CLO 2017-SERIES 17-3A CLASS B	1	6,750,000	6,614,325
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1	250,000,000	21,248,854	33,294,288	09/15/2017	09/15/2047	Interest Rate Swap		11,610,788	03073E-AM-7	AmerisourceBergen Corp-SENIOR UNSECURED	2	21,248,854	21,683,500
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		28,589,078	34,231,557	09/15/2017	09/15/2047	Interest Rate Swap			055450-AH-3	BHP Billiton Finance USA-DEBENTURE	1	28,589,078	34,231,557
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		31,151,555	32,468,759	09/15/2017	09/15/2047	Interest Rate Swap			12572Q-AG-0	OME GROUP INC-SR UNSECURED	1	31,151,555	32,468,759
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,646,404	20,508,843	09/15/2017	09/15/2047	Interest Rate Swap			29364N-AS-7	ENTERGY MISSISSIPPI INC-SECURED NOTE	1	19,646,404	20,508,843
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		25,691,174	32,231,507	09/15/2017	09/15/2047	Interest Rate Swap			313747-AF-4	FEDERAL REALTY INVESTMEN-NOTE REID	1	25,691,174	32,231,507
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		20,834,479	22,022,229	09/15/2017	09/15/2047	Interest Rate Swap			375558-AW-3	GILEAD SCIENCES INC-SENIOR UNSECURED NOTE	1	20,834,479	22,022,229
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,188,712	19,182,687	09/15/2017	09/15/2047	Interest Rate Swap			384780-AA-0	GRAIN SPECTRUM FUND II-SECURED NOTE	1	19,188,712	19,182,687
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		28,503,875	29,575,458	09/15/2017	09/15/2047	Interest Rate Swap			75972Y-AA-9	RENAISSANCE FINANCE-SR UNSECURED	1	28,503,875	29,575,458
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		25,007,553	26,624,256	09/15/2017	09/15/2047	Interest Rate Swap			884315-AG-7	THOMAS & BETTS CORP-NOTE	1	25,007,553	26,624,256
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,108,177	19,612,836	09/15/2017	09/15/2047	Interest Rate Swap			958587-BJ-5	WEST MASS ELECTRIC CO-SENIOR UNSECURED NOTE	1	19,108,177	19,612,836
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		3,200,000	3,040,406	09/15/2017	09/15/2047	Interest Rate Swap			22615E-AE-0	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,200,000	3,040,406
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		8,000,000	7,770,512	09/15/2017	09/15/2047	Interest Rate Swap			67104L-AG-2	OHA Loan Funding 2013-2 -OHALF 2013-2A CR	1	8,000,000	7,770,512
57629*DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		7,000,000	6,960,870	09/15/2017	09/15/2047	Interest Rate Swap			39862E-AB-0	GRIFFEN PARK CLO LTD-SERIES 17-1A CLASS B	1	7,000,000	6,960,870
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2	250,000,000	1,476,734	13,563,429	09/15/2017	09/15/2047	Interest Rate Swap		12,018,093	031162-CJ-7	AMGEN INC-SENIOR UNSECURED	2	1,476,734	1,545,336
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		36,220,275	37,958,316	09/15/2017	09/15/2047	Interest Rate Swap			44107T-AT-3	HOTEL & RESORTS LP-SENIOR UNSECURED NOTE	2	36,220,275	37,958,316
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		33,299,345	34,703,158	09/15/2017	09/15/2047	Interest Rate Swap			445658-CD-7	JOB HUNT TRANSPRT SVCS-SENIOR UNSECURED NOTE	2	33,299,345	34,703,158
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		35,066,669	38,961,942	09/15/2017	09/15/2047	Interest Rate Swap			456866-AM-4	INGERSOLL-RAND CO-DEBENTURE	2	35,066,669	38,961,942
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		42,895,406	43,397,796	09/15/2017	09/15/2047	Interest Rate Swap			664397-AK-2	EVERSOURCE ENERGY-UNSECURED NOTE	2	42,895,406	43,397,796
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		32,802,959	33,104,528	09/15/2017	09/15/2047	Interest Rate Swap			760759-AP-5	Republic Services Inc-SENIOR UNSECURED NOTE	2	32,802,959	33,104,528
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		37,901,574	39,264,679	09/15/2017	09/15/2047	Interest Rate Swap			94106L-BA-6	Waste Management Inc-SR UNSECURED	2	37,901,574	39,264,679
57629*DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		35,823,530	37,034,095	09/15/2017	09/15/2047	Interest Rate Swap			A05830-41-6	SPARC EM SPC PANAMA METR-SECURED	2	35,823,530	37,034,095
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2	250,000,000	23,466,114	36,153,532	09/15/2017	09/15/2047	Interest Rate Swap		12,235,323	00287Y-AL-3	AbbVie Inc-SENIOR UNSECURED NOTE	2	23,466,114	23,918,209
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		6,471,045	6,717,686	09/15/2017	09/15/2047	Interest Rate Swap			00507U-AS-0	ACTAVIS FUNDING SCS-SENIOR UNSECURED NOTE	2	6,471,045	6,717,686

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		6,228,364	6,560,362	09/15/2017	09/15/2047	Interest Rate Swap			195869-AP-7	COLONIAL PIPELINE CO-SR UNSECURED DISCOVER FINANCIAL SVS-SENIOR UNSECURED	1	6,228,364	6,560,362
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		50,140,250	52,992,366	09/15/2017	09/15/2047	Interest Rate Swap			254709-AM-0	UNSECURED	2	50,140,250	52,992,366
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		25,127,532	25,770,074	09/15/2017	09/15/2047	Interest Rate Swap			444859-BA-9	Humana Inc-SENIOR UNSECURED NOTE	2	25,127,532	25,770,074
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		23,482,439	23,737,827	09/15/2017	09/15/2047	Interest Rate Swap			61945C-AA-1	MOSAIC CO/THE-SENIOR UNSECURED NOTE	2	23,482,439	23,737,827
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		24,561,313	25,122,162	09/15/2017	09/15/2047	Interest Rate Swap			718549-AB-4	PHILLIPS 66 PARTNERS LP-SENIOR UNSECURED	2	24,561,313	25,122,162
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		26,501,036	27,231,666	09/15/2017	09/15/2047	Interest Rate Swap			756109-AN-4	REALTY INCOME CORP-SENIOR UNSECURED NOTE REID	1	26,501,036	27,231,666
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		17,898,847	18,507,416	09/15/2017	09/15/2047	Interest Rate Swap			09247X-AJ-0	BlackRock Inc-SENIOR UNSECURED NOTE	1	17,898,847	18,507,416
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		27,519,384	27,813,153	09/15/2017	09/15/2047	Interest Rate Swap			883203-BQ-3	Textron Inc-NOTE	2	27,519,384	27,813,153
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		19,555,082	19,734,859	09/15/2017	09/15/2047	Interest Rate Swap			760759-AP-5	Republic Services Inc-SENIOR UNSECURED NOTE	2	19,555,082	19,734,859
57629*DP3	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		8,800,000	8,669,549	09/15/2017	09/15/2047	Interest Rate Swap			05683L-AC-0	Bain Capital Credit CLO -BCC 2018-1A A2	1	8,800,000	8,669,549
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2	250,000,000	22,528,195	34,298,776	09/15/2017	09/15/2047	Interest Rate Swap		11,746,556	045487-AA-3	ASSOC BANC-CORP-SR UNSECURED	2	22,528,195	22,552,220
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		21,876,476	22,536,450	09/15/2017	09/15/2047	Interest Rate Swap			378272-AL-2	GLENCORE FUNDING LLC-SR UNSECURED	2	21,876,476	22,536,450
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		22,883,200	23,660,395	09/15/2017	09/15/2047	Interest Rate Swap			45167R-AF-1	IDEX Corp-SENIOR UNSECURED NOTE	2	22,883,200	23,660,395
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		22,094,164	22,300,646	09/15/2017	09/15/2047	Interest Rate Swap			49245P-AA-4	KERRY GROUP FIN SERVICES-SENIOR UNSECURED NOTE	2	22,094,164	22,300,646
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		21,136,040	21,721,703	09/15/2017	09/15/2047	Interest Rate Swap			67103H-AF-4	O'REILLY AUTOMOTIVE INC-SENIOR UNSECURED	2	21,136,040	21,721,703
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		16,010,205	16,447,655	09/15/2017	09/15/2047	Interest Rate Swap			72925P-AD-7	PLUM CREEK TIMBERLANDS-SENIOR UNSECURED NOTE	2	16,010,205	16,447,655
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		25,068,611	25,131,891	09/15/2017	09/15/2047	Interest Rate Swap			759351-AG-4	Reinsurance Group of Ame-SENIOR UNSECURED NOTE	2	25,068,611	25,131,891
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		25,867,387	27,375,551	09/15/2017	09/15/2047	Interest Rate Swap			806851-AG-6	SCHLUMBERGER HLDGS CORP-SR UNSECURED	2	25,867,387	27,375,551
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		22,710,591	23,998,428	09/15/2017	09/15/2047	Interest Rate Swap			92936M-AB-3	YIP FINANCE 2010-SENIOR UNSECURED NOTE	2	22,710,591	23,998,428
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		21,854,467	21,189,324	09/15/2017	09/15/2047	Interest Rate Swap			98310W-AL-2	WYNDHAM WORLDWIDE CORP-SENIOR UNSECURED NOTE	3	21,854,467	21,189,324
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		19,086,632	20,171,500	09/15/2017	09/15/2047	Interest Rate Swap			75625Q-AD-1	Reckitt Benckiser Treasu-SENIOR UNSECURED	1	19,086,632	20,171,500
57629*DN8	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		21,048,729	22,680,000	09/15/2017	09/15/2047	Interest Rate Swap			EK5851-40-8	ISRAEL ELECTRIC CORP LTD-SECURED NOTE	2	21,048,729	22,680,000
Awaiting PPN	Sovereign Bond of Peru	1Z	5,000,000	10,885,276	11,055,772	12/20/2018	06/20/2024	5 Yr Credit Default Swap	60,996	113,584	912810-RP-5	US TREAS N/B-NOTE	1	10,824,280	10,942,188
Awaiting PPN	Sovereign Bond of Mexico	1Z	15,000,000	16,327,223	18,678,627	12/20/2018	06/20/2024	5 Yr Credit Default Swap	(226,421)	(77,623)	912833-LL-2	US TREASURY-STRIP COUPON RECEIPT	1	16,553,644	18,756,250
Awaiting PPN	Sovereign Bond of Mexico	1Z	5,000,000	19,917,256	21,905,104	12/20/2018	06/20/2024	5 Yr Credit Default Swap	(71,042)	(26,146)	912810-RV-2	US TREASURY N/B-UNSECURED	1	19,988,298	21,931,250
Awaiting PPN	Sovereign Bond of Brazil	1Z	5,000,000	29,839,872	32,779,472	12/20/2018	06/20/2024	5 Yr Credit Default Swap	(142,575)	(117,403)	912810-RV-2	US TREASURY N/B-UNSECURED	1	29,982,447	32,896,875
Awaiting PPN	Sovereign Bond of Columbia	1Z	30,000,000	30,750,103	34,111,170	12/20/2018	06/20/2024	5 Yr Credit Default Swap	(231,759)	117,732	912810-RV-2	US TREASURY N/B-UNSECURED	1	30,981,862	33,993,438
Awaiting PPN	Sovereign Bond of India	1Z	40,000,000	34,881,326	38,544,764	12/20/2018	06/20/2024	5 Yr Credit Default Swap	(98,196)	165,076	912810-RV-2	US TREASURY N/B-UNSECURED	1	34,979,522	38,379,688
Awaiting PPN	Sovereign Bond of India	1Z		14,875,837	16,052,343	12/20/2018	06/20/2024	5 Yr Credit Default Swap			912810-RU-4	US TREASURY N/B-UNSECURED	1	14,875,837	16,052,343
Awaiting PPN	Sovereign Bond of Malaysia	1Z	10,000,000	15,026,692	16,268,878	12/20/2018	06/20/2024	5 Yr Credit Default Swap	150,855	216,535	912810-RU-4	US TREASURY N/B-UNSECURED	1	14,875,837	16,052,343
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z	517,000,000	271,965,775	281,698,177	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index	8,342,535	11,136,927	912828-PX-2	US TREAS N/B-NOTE	1	263,623,240	270,561,250
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z		260,460,114	273,974,844	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index			76116F-AG-2	RFOSP PRINCIPAL STRIP	1	260,460,114	273,974,844
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z	226,000,000	254,239,267	262,055,866	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index	3,646,834	4,868,366	912828-PX-2	US TREAS N/B-NOTE	1	250,592,433	257,187,500
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z	257,000,000	94,354,351	98,123,651	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index	4,141,075	5,536,151	912828-PX-2	US TREAS N/B-NOTE	1	90,213,276	92,587,500
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z		81,278,333	85,495,696	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index			76116F-AG-2	RFOSP PRINCIPAL STRIP	1	81,278,333	85,495,696

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z		87,475,431	118,675,786	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index			912810-QK-7	US TREASURY N/B-BOND	1	87,475,431	118,675,786
Awaiting PPN	Credit Default Indices (CDIG032/CDX.NA.IG.32)	2Z	100,000,000	111,536,702	122,776,019	03/20/2019	06/20/2024	5 Yr Credit Default Swap Index	1,601,063	2,154,144	912810-RV-2	US TREASURY N/B-UNSECURED	1	109,935,639	120,621,875
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z	130,000,000	33,228,386	2,497,340	11/07/2018	11/07/2048	Interest Rate Swap		(32,832,980)	873050-CM-1	TTX CO-SENIOR UNSECURED	1	33,228,386	35,330,320
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z		31,917,716	35,667,548	11/07/2018	11/07/2048	Interest Rate Swap			341081-FR-3	Florida Power & Light Co-SECURED	1	31,917,716	35,667,548
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z		26,255,167	29,978,748	11/07/2018	11/07/2048	Interest Rate Swap			45866F-AH-7	Intercontinental Exchange-SENIOR UNSECURED	1	26,255,167	29,978,748
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z		26,135,232	29,447,709	11/07/2018	11/07/2048	Interest Rate Swap			010392-FS-2	Alabama Power Co-SENIOR UNSECURED	1	26,135,232	29,447,709
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z		26,970,885	29,042,582	11/07/2018	11/07/2048	Interest Rate Swap			976843-BJ-0	WISCONSIN PUBLIC SERVICE-SECURED	1	26,970,885	29,042,582
57629*0Z1	Evergreen Basket of Floating Rate Corporate Bonds	1Z		10,601,672	11,177,561	11/07/2018	11/07/2048	Interest Rate Swap			235851-AR-3	DANAHER CORP-SR UNSECURED	1	10,601,672	11,177,561
57629*0Y4	Evergreen Basket of Floating Rate Corporate Bonds	1Z	170,000,000	42,300,000	3,946,773	11/07/2018	11/07/2048	Interest Rate Swap		(43,125,513)	45174X-AA-0	IHC Health Services Inc-SECURED	1	42,300,000	47,072,286
57629*0Y4	Evergreen Basket of Floating Rate Corporate Bonds	1Z		41,500,000	42,920,421	11/07/2018	11/07/2048	Interest Rate Swap			91412N-AK-6	UNIVERSITY OF CHICAGO-UNSECURED BOND	1	41,500,000	42,920,421
57629*0Y4	Evergreen Basket of Floating Rate Corporate Bonds	1Z		40,928,858	43,735,611	11/07/2018	11/07/2048	Interest Rate Swap			906548-CN-0	Union Electric Co-SECURED	1	40,928,858	43,735,611
57629*0Y4	Evergreen Basket of Floating Rate Corporate Bonds	1Z		40,988,441	47,998,753	11/07/2018	11/07/2048	Interest Rate Swap			575718-AB-7	MASS INSTITUTE OF TECH-UNSECURED BOND	1	40,988,441	47,998,753
57629*0Y4	Evergreen Basket of Floating Rate Corporate Bonds	1Z		29,494,647	33,151,567	11/07/2018	11/07/2048	Interest Rate Swap			391380-AC-9	GREAT WEST LIFE CO FINANC-SENIOR UNSECURED	1	29,494,647	33,151,567
57629*0X6	Evergreen Basket of Floating Rate Corporate Bonds	1Z	200,000,000	54,198,215	9,039,941	11/07/2018	11/07/2048	Interest Rate Swap		(50,601,726)	882508-BD-5	Texas Instruments Inc-SENIOR UNSECURED	1	54,198,215	59,641,667
57629*0X6	Evergreen Basket of Floating Rate Corporate Bonds	1Z		50,404,542	55,554,369	11/07/2018	11/07/2048	Interest Rate Swap			745332-CG-9	PUGET SOUND ENERGY INC-SECURED	1	50,404,542	55,554,369
57629*0X6	Evergreen Basket of Floating Rate Corporate Bonds	1Z		48,650,617	53,103,297	11/07/2018	11/07/2048	Interest Rate Swap			81373P-AA-1	Securian Financial Group-SENIOR UNSECURED	1	48,650,617	53,103,297
57629*0X6	Evergreen Basket of Floating Rate Corporate Bonds	1Z		51,936,923	57,548,152	11/07/2018	11/07/2048	Interest Rate Swap			92826C-AF-9	VISA INC-SR UNSECURED	1	51,936,923	57,548,152
57629*0X6	Evergreen Basket of Floating Rate Corporate Bonds	1Z		28,755,230	32,503,483	11/07/2018	11/07/2048	Interest Rate Swap			049560-AP-0	Atmos Energy Corp-SENIOR UNSECURED	1	28,755,230	32,503,483
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z	300,000,000	56,728,983	(11,176,833)	11/08/2018	11/08/2048	Interest Rate Swap		(74,964,333)	125720-AH-8	CME Group Inc-SENIOR UNSECURED	1	56,728,983	63,787,500
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		58,715,752	63,355,368	11/08/2018	11/08/2048	Interest Rate Swap			00440E-AW-7	ACE INA HOLDINGS-SR UNSECURED	1	58,715,752	63,355,368
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		53,316,560	60,256,972	11/08/2018	11/08/2048	Interest Rate Swap			30231G-AW-2	EXXON MOBIL CORPORATION-SR UNSECURED	1	53,316,560	60,256,972
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		55,752,839	60,690,537	11/08/2018	11/08/2048	Interest Rate Swap			037833-BX-7	APPLE INC-SENIOR UNSECURED	1	55,752,839	60,690,537
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		58,427,566	60,186,833	11/08/2018	11/08/2048	Interest Rate Swap			91324P-CR-1	UNITEDHEALTH GROUP INC-SR UNSECURED	1	58,427,566	60,186,833
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		58,697,301	63,245,059	11/08/2018	11/08/2048	Interest Rate Swap			023135-AQ-9	AMAZON.COM INC-SR UNSECURED	1	58,697,301	63,245,059
57629*0W8	Evergreen Basket of Floating Rate Corporate Bonds	1Z		15,953,896	17,419,848	11/08/2018	11/08/2048	Interest Rate Swap			438516-BS-4	Honeywell International -SENIOR UNSECURED	1	15,953,896	17,419,848
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2	320,000,000	101,957,436	30,624,283	11/08/2018	11/08/2048	Interest Rate Swap		(80,248,190)	82620K-AT-0	SIEMENS FINANCING INSTRUMENTS-SENIOR UNSECURED	1	101,957,436	110,872,473
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2		89,292,951	95,059,697	11/08/2018	11/08/2048	Interest Rate Swap			585055-BU-9	MEDTRONIC INC-SR UNSECURED	1	89,292,951	95,059,697
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2		68,061,342	76,613,571	11/08/2018	11/08/2048	Interest Rate Swap			141781-BF-0	CARGILL INC-SR UNSECURED	1	68,061,342	76,613,571
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2		45,375,056	52,118,891	11/08/2018	11/08/2048	Interest Rate Swap			023135-BM-7	Amazon.com Inc-SENIOR UNSECURED	1	45,375,056	52,118,891
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2		48,347,660	52,348,919	11/08/2018	11/08/2048	Interest Rate Swap			899043-AA-1	TUFTS UNIVERSITY-UNSECURED BOND	1	48,347,660	52,348,919
12607*AD2	Evergreen Basket of Floating Rate Corporate Bonds	2		18,484,700	22,585,880	11/08/2018	11/08/2048	Interest Rate Swap			40728T-AA-1	HAMILTON COLLEGE-UNSECURED	1	18,484,700	22,585,880

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*001	Evergreen Basket of Floating Rate Corporate Bonds	1	160,000,000	40,349,682	2,042,748	11/08/2018	11/08/2048	Interest Rate Swap	(40,195,654)		575634-AT-7	MASSACHUSETTS ELECTRIC-SENIOR UNSECURED	1	40,349,682	42,238,402
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		30,108,884	29,682,411	11/08/2018	11/08/2048	Interest Rate Swap			45138L-BD-4	IDAHO POWER CORP-SECURED NOTE	1	30,108,884	29,682,411
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		28,875,884	31,891,677	11/08/2018	11/08/2048	Interest Rate Swap			29246Q-AB-1	Empresa de Transporte de-SENIOR UNSECURED	1	28,875,884	31,891,677
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		28,335,216	31,835,740	11/08/2018	11/08/2048	Interest Rate Swap			771196-BH-4	ROCHE HOLDING INC-SENIOR UNSECURED NOTE	1	28,335,216	31,835,740
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		29,317,800	31,784,740	11/08/2018	11/08/2048	Interest Rate Swap			437076-BH-4	Home Depot Inc/The-SENIOR UNSECURED	1	29,317,800	31,784,740
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		28,275,000	31,449,123	11/08/2018	11/08/2048	Interest Rate Swap			578454-AD-2	MAYO CLINIC-UNSECURED	1	28,275,000	31,449,123
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		15,403,150	16,876,929	11/08/2018	11/08/2048	Interest Rate Swap			571676-AH-8	Mars Inc-SENIOR UNSECURED	1	15,403,150	16,876,929
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1	320,000,000	60,037,701	(14,617,412)	11/08/2018	11/08/2048	Interest Rate Swap	(80,248,190)		009279-AC-4	AIRBUS SE-SENIOR UNSECURED	1	60,037,701	65,630,778
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		68,440,318	70,215,419	11/08/2018	11/08/2048	Interest Rate Swap			701094-AL-8	Parker-Hannifin Corp-SENIOR UNSECURED	1	68,440,318	70,215,419
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		61,756,700	66,135,644	11/08/2018	11/08/2048	Interest Rate Swap			23338V-AE-6	DTE Electric Co-SECURED	1	61,756,700	66,135,644
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		62,084,129	63,439,124	11/08/2018	11/08/2048	Interest Rate Swap			66989H-AH-1	NOVARTIS CAPITAL CORP-SR UNSECURED	1	62,084,129	63,439,124
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		41,481,995	50,340,149	11/08/2018	11/08/2048	Interest Rate Swap			594918-CB-8	MICROSOFT CORP-SENIOR UNSECURED	1	41,481,995	50,340,149
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		23,531,617	26,074,318	11/08/2018	11/08/2048	Interest Rate Swap			69351U-AV-5	PPL Electric Utilities C-SECURED	1	23,531,617	26,074,318
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		22,884,193	25,581,635	11/08/2018	11/08/2048	Interest Rate Swap			084664-CQ-2	Berkshire Hathaway Finan-SENIOR UNSECURED	1	22,884,193	25,581,635
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		21,461,557	22,440,280	11/08/2018	11/08/2048	Interest Rate Swap			110122-AX-6	Bristol-Myers Squibb Co-SR UNSECURED	1	21,461,557	22,440,280
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		14,208,922	15,752,867	11/08/2018	11/08/2048	Interest Rate Swap			594918-BT-0	MICROSOFT CORP-SENIOR UNSECURED	1	14,208,922	15,752,867
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1	140,000,000	36,285,299	7,460,025	12/03/2018	12/03/2048	Interest Rate Swap	(30,448,399)		039483-BM-3	ARCHER-DANIELS-MIDLAND C-SENIOR UNSECURED	1	36,285,299	37,908,424
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		27,482,812	30,726,080	12/03/2018	12/03/2048	Interest Rate Swap			00401M-AB-2	ABU DHABI CRUDE OIL PIPE-SECURED	1	27,482,812	30,726,080
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		28,601,497	30,899,512	12/03/2018	12/03/2048	Interest Rate Swap			207597-EH-4	Connecticut Light & Powe-SECURED	1	28,601,497	30,899,512
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		27,318,409	28,774,525	12/03/2018	12/03/2048	Interest Rate Swap			29736R-AG-5	ESTEE LAUDER CO INC-SENIOR UNSECURED	1	27,318,409	28,774,525
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		25,098,111	30,772,300	12/03/2018	12/03/2048	Interest Rate Swap			04351L-AA-8	ASCENSION HEALTH-UNSECURED BOND	1	25,098,111	30,772,300
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		9,997,784	11,021,530	12/03/2018	12/03/2048	Interest Rate Swap			00115A-AJ-8	AEP Transmission Co LLC-SENIOR UNSECURED	1	9,997,784	11,021,530
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1Z		15,822,286	17,590,470	12/03/2018	12/03/2048	Interest Rate Swap			91481C-AA-8	UNIVERSITY OF PENNSYLVAN-SENIOR UNSECURED NOTE	1	15,822,286	17,590,470
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1	160,000,000	34,354,619	1,346,877	12/03/2018	12/03/2048	Interest Rate Swap	(34,547,303)		02361D-AR-1	Ameren Illinois Co-SECURED	1	34,354,619	35,894,180
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		37,028,021	41,248,636	12/03/2018	12/03/2048	Interest Rate Swap			468223-AT-9	Jackson Laboratory/The-UNSECURED	1	37,028,021	41,248,636
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		34,974,343	38,521,385	12/03/2018	12/03/2048	Interest Rate Swap			743315-AS-2	PROGRESSIVE CORP-SENIOR UNSECURED	1	34,974,343	38,521,385
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		35,232,490	38,246,845	12/03/2018	12/03/2048	Interest Rate Swap			17858P-AB-7	City of Hope-SENIOR UNSECURED	1	35,232,490	38,246,845
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		35,017,355	36,974,210	12/03/2018	12/03/2048	Interest Rate Swap			44107H-AE-2	NY Society for Relief of-SECURED	1	35,017,355	36,974,210
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		9,970,089	10,835,540	12/03/2018	12/03/2048	Interest Rate Swap			458140-AV-2	INTEL CORP-SENIOR UNSECURED	1	9,970,089	10,835,540
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1	160,000,000	36,785,967	12,092,113	12/10/2018	12/10/2048	Interest Rate Swap	(28,553,830)		828807-CZ-8	SIMON PROPERTY GROUP LP-SENIOR UNSECURED	1	36,785,967	40,645,943
57629*001	Evergreen Basket of Floating Rate Corporate Bonds	1		34,632,827	38,615,955	12/10/2018	12/10/2048	Interest Rate Swap			12189L-BB-6	BURLINGTN NORTH SANTA FE-SENIOR UNSECURED	1	34,632,827	38,615,955

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STATEMENT AS OF JUNE 30, 2019 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of Current Statement Date

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*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		29,545,591	32,278,170	12/10/2018	12/10/2048	Interest Rate Swap			391382-AB-4	GREAT-WEST LIFE CO FINANC-SENIOR UNSECURED	1	29,545,591	32,278,170
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		30,259,801	33,473,490	12/10/2018	12/10/2048	Interest Rate Swap			038222-AM-7	APPLIED MATERIALS INC-SENIOR UNSECURED	1	30,259,801	33,473,490
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		30,234,549	33,061,440	12/10/2018	12/10/2048	Interest Rate Swap			210518-DB-9	Consumers Energy Co-SECURED	1	30,234,549	33,061,440
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		29,653,378	32,718,870	12/10/2018	12/10/2048	Interest Rate Swap			455434-BR-0	INDIANAPOLIS PWR & LIGHT-SECURED BOND	1	29,653,378	32,718,870
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z	200,000,000	103,219,749	110,322,842	01/07/2019	01/07/2049	Interest Rate Swap		(24,037,458)	931142-CS-0	WAL-MART STORES INC-SENIOR NOTE	1	103,219,749	134,360,300
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		71,779,897	81,919,422	01/07/2019	01/07/2049	Interest Rate Swap			755111-BU-4	Raytheon Co-SENIOR UNSECURED NOTE	1	71,779,897	81,919,422
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		44,199,111	55,943,789	01/07/2019	01/07/2049	Interest Rate Swap			873050-CB-5	TTX CO-UNSECURED NOTE	1	44,199,111	55,943,789
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z	250,000,000	75,488,833	52,675,170	01/07/2019	01/07/2049	Interest Rate Swap		(29,513,612)	458140-AK-6	INTEL CORP-SENIOR UNSECURED NOTE	1	75,488,833	82,188,782
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		91,741,992	108,250,496	01/07/2019	01/07/2049	Interest Rate Swap			437076-AS-1	Home Depot Inc/The-SENIOR UNSECURED NOTE	1	91,741,992	108,250,496
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		49,058,640	53,414,459	01/07/2019	01/07/2049	Interest Rate Swap			341081-FG-7	FLORIDA POWER & LIGHT CO-SECURED BOND	1	49,058,640	53,414,459
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		60,170,903	68,269,566	01/07/2019	01/07/2049	Interest Rate Swap			038222-AG-0	APPLIED MATERIALS INC-SENIOR UNSECURED NOTE	1	60,170,903	68,269,566
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z	175,000,000	79,059,131	60,064,773	01/31/2019	01/31/2049	Interest Rate Swap		(26,750,534)	055451-AV-0	BHP Billiton Finance USA-SR UNSECURED	1	79,059,131	86,815,307
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		65,941,438	73,388,621	01/31/2019	01/31/2049	Interest Rate Swap			478165-AG-8	JOHNSON -S.C. & SON INC-SENIOR UNSECURED NOTE	1	65,941,438	73,388,621
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		54,663,772	69,826,683	01/31/2019	01/31/2049	Interest Rate Swap			78409V-AB-0	S&P GLOBAL INC-SENIOR UNSECURED NOTE	1	54,663,772	69,826,683
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z	150,000,000	47,225,477	30,212,940	02/04/2019	02/04/2049	Interest Rate Swap		(20,849,335)	057224-AZ-0	BAKER HUGHES INC-SENIOR NOTE	1	47,225,477	51,062,275
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		45,262,917	48,485,273	02/04/2019	02/04/2049	Interest Rate Swap			891160-MJ-9	Toronto-Dominion Bank/Th-SUBORDINATED	1	45,262,917	48,485,273
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		71,644,211	76,281,442	02/04/2019	02/04/2049	Interest Rate Swap			278865-AM-2	Ecolab Inc-SENIOR UNSECURED NOTE	1	71,644,211	76,281,442
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z	165,000,000	59,387,024	45,934,246	02/04/2019	02/04/2049	Interest Rate Swap		(23,750,692)	68389X-AM-7	ORACLE CORP-SENIOR UNSECURED NOTE	1	59,387,024	69,684,938
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		65,622,455	70,775,272	02/04/2019	02/04/2049	Interest Rate Swap			149123-CB-5	Caterpillar Inc-SENIOR UNSECURED BOND	1	65,622,455	70,775,272
Awaiting PPN	Evergreen Basket of Floating Rate Corporate Bonds	1Z		66,335,600	77,628,955	02/04/2019	02/04/2049	Interest Rate Swap			377372-AE-7	GLAXOSMITHKLINE CAP INC-SR UNSECURED	1	66,335,600	77,628,955
999999999 - Totals				14,431,035,291	15,464,364,258	XXX	XXX	XXX	17,173,365	539,395,100	XXX	XXX	XXX	14,413,861,926	14,924,969,158

S105.25

STATEMENT AS OF JUNE 30, 2019 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	122	13,581,622,879	123	14,401,415,772					122	13,581,622,879
2. Add: Opened or Acquired Transactions.....	16	2,150,000,000							16	2,150,000,000
3. Add: Increases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX		XXX		XXX		XXX		XXX	
4. Less: Closed or Disposed of Transactions.....	15	1,330,207,107	17	987,415,772					32	2,317,622,879
5. Less: Positions Disposed of for Failing Effectiveness Criteria.....										
6. Less: Decreases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX		XXX		XXX		XXX		XXX	
7. Ending Inventory	123	14,401,415,772	106	13,414,000,000					106	13,414,000,000

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.....	3,477,450,765
2. Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance.....
3. Total (Line 1 plus Line 2).....	3,477,450,765
4. Part D, Section 1, Column 5.....	12,046,302,629
5. Part D, Section 1, Column 6.....	(8,415,962,537)
6. Total (Line 3 minus Line 4 minus Line 5).....	(152,889,327)

	Fair Value Check
7. Part A, Section 1, Column 16.....	3,999,672,594
8. Part B, Section 1, Column 13.....	152,889,326
9. Total (Line 7 plus Line 8).....	4,152,561,920
10. Part D, Section 1, Column 8.....	13,188,643,383
11. Part D, Section 1, Column 9.....	(9,036,081,463)
12. Total (Line 9 minus Line 10 minus Line 11).....

	Potential Exposure Check
13. Part A, Section 1, Column 21.....	4,568,337,783
14. Part B, Section 1, Column 20.....	114,061,350
15. Part D, Section 1, Column 11.....	4,682,399,133
16. Total (Line 13 plus Line 14 minus Line 15).....

SCHEDULE E - PART 2 - VERIFICATION

(Cash Equivalents)

	1	2
	Year To Date	Prior Year Ended December 31
1. Book/adjusted carrying value, December 31 of prior year	3,695,132,944	2,852,941,262
2. Cost of cash equivalents acquired	36,108,064,740	79,209,684,010
3. Accrual of discount	26,851,649	55,788,749
4. Unrealized valuation increase (decrease)		36,646
5. Total gain (loss) on disposals	58,085	97,456
6. Deduct consideration received on disposals	38,333,551,164	78,423,415,179
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)	1,496,556,255	3,695,132,944
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	1,496,556,255	3,695,132,944