

QUARTERLY STATEMENT

OF THE

Massachusetts Mutual Life Insurance Company

TO THE

Insurance Department

OF THE

STATE OF

**FOR THE QUARTER ENDED
SEPTEMBER 30, 2018**

LIFE AND ACCIDENT AND HEALTH

2018



LIFE AND ACCIDENT AND HEALTH COMPANIES - ASSOCIATION EDITION

QUARTERLY STATEMENT

AS OF SEPTEMBER 30, 2018
OF THE CONDITION AND AFFAIRS OF THE

Massachusetts Mutual Life Insurance Company

NAIC Group Code 0435 (Current) 0435 (Prior) 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

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 Pia Denise Flanagan, Appointed Actuary Douglas Wright Taylor

OTHER

Elizabeth Ward Chicares, Executive Vice President, Chief Financial Officer and Chief Actuary, Michael Robert Fanning, Executive Vice President, Melvin Timothy Corbett, Executive Vice President and Chief Investment Officer, Mark Douglas Roellig, Executive Vice President and Chief Technology and Administrative Officer, Adnan Omar Ahmed, Executive Vice President, Geoffrey James Craddock, Chief Risk Officer

DIRECTORS OR TRUSTEES

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

State of Massachusetts SS: County of Hampden

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

Roger William Crandall, President and Chief Executive Officer, Pia Denise Flanagan, Secretary, Todd Garrett Picken, Treasurer

Subscribed and sworn to before me this day of

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

STATEMENT AS OF SEPTEMBER 30, 2018 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	96,382,824,681		96,382,824,681	90,434,764,618
2. Stocks:				
2.1 Preferred stocks	751,933,879		751,933,879	767,807,089
2.2 Common stocks	13,914,582,886		13,914,582,886	15,635,265,539
3. Mortgage loans on real estate:				
3.1 First liens	23,328,066,803		23,328,066,803	22,579,846,619
3.2 Other than first liens.....				
4. Real estate:				
4.1 Properties occupied by the company (less \$ encumbrances)	196,010,607		196,010,607	143,857,098
4.2 Properties held for the production of income (less \$ 628,582,916 encumbrances)	568,768,692		568,768,692	608,115,213
4.3 Properties held for sale (less \$ encumbrances)				105,028,985
5. Cash (\$ 200,575,053), cash equivalents (\$ 975,832,936) and short-term investments (\$ 513,958,350)	1,690,366,339		1,690,366,339	3,579,565,622
6. Contract loans (including \$ premium notes)	14,055,410,762	595,546	14,054,815,216	13,326,988,405
7. Derivatives	8,557,723,026		8,557,723,026	8,857,280,579
8. Other invested assets	7,833,768,158	45,549,908	7,788,218,250	7,677,785,202
9. Receivables for securities	755,568,256		755,568,256	204,853,007
10. Securities lending reinvested collateral assets				
11. Aggregate write-ins for invested assets				
12. Subtotals, cash and invested assets (Lines 1 to 11)	168,035,024,089	46,145,454	167,988,878,635	163,921,157,976
13. Title plants less \$ charged off (for Title insurers only)				
14. Investment income due and accrued	2,442,758,464	19,499,266	2,423,259,198	2,198,552,050
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection	125,916,478	2,942,320	122,974,158	164,069,363
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due (including \$ earned but unbilled premiums)	681,318,249		681,318,249	696,945,925
15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$)				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers	56,674,476	3,362,072	53,312,404	30,663,446
16.2 Funds held by or deposited with reinsured companies				
16.3 Other amounts receivable under reinsurance contracts	12,913,340		12,913,340	28,337,150
17. Amounts receivable relating to uninsured plans				
18.1 Current federal and foreign income tax recoverable and interest thereon	317,679,797		317,679,797	544,063,897
18.2 Net deferred tax asset	1,092,553,142	79,507,922	1,013,045,220	761,056,248
19. Guaranty funds receivable or on deposit	26,936,726		26,936,726	27,196,340
20. Electronic data processing equipment and software	208,699,500	199,779,198	8,920,302	11,505,754
21. Furniture and equipment, including health care delivery assets (\$)	47,426,834	47,426,834		
22. Net adjustment in assets and liabilities due to foreign exchange rates				
23. Receivables from parent, subsidiaries and affiliates	74,965,804		74,965,804	59,367,747
24. Health care (\$) and other amounts receivable				
25. Aggregate write-ins for other than invested assets	3,792,211,025	1,483,390,719	2,308,820,306	2,458,024,667
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	176,915,077,924	1,882,053,785	175,033,024,139	170,900,940,563
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts	70,839,137,687		70,839,137,687	69,162,281,558
28. Total (Lines 26 and 27)	247,754,215,611	1,882,053,785	245,872,161,826	240,063,222,121
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	2,139,610,676		2,139,610,676	2,104,402,544
2502. Fully refundable deposits, prepayments and miscellaneous assets	236,001,670	137,300,707	98,700,963	282,561,096
2503. Employee insurance plan advances	41,015,566	15,525	41,000,041	39,459,017
2598. Summary of remaining write-ins for Line 25 from overflow page	1,375,583,113	1,346,074,487	29,508,626	31,602,010
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	3,792,211,025	1,483,390,719	2,308,820,306	2,458,024,667

LIABILITIES, SURPLUS AND OTHER FUNDS

	1 Current Statement Date	2 December 31 Prior Year
1. Aggregate reserve for life contracts \$116,645,212,648 less \$ included in Line 6.3 (including \$133,169,910 Modco Reserve).....	116,645,212,648	112,904,106,756
2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve).....	2,952,142,687	2,859,824,790
3. Liability for deposit-type contracts (including \$ Modco Reserve).....	14,145,373,247	13,014,264,844
4. Contract claims:		
4.1 Life.....	389,731,454	450,718,022
4.2 Accident and health.....	24,988,363	24,903,999
5. Policyholders' dividends \$7,779,471 and coupons \$ due and unpaid.....	7,779,471	10,007,757
6. Provision for policyholders' dividends and coupons payable in following calendar year - estimated amounts:		
6.1 Dividends apportioned for payment (including \$ Modco).....	1,631,366,261	1,591,383,608
6.2 Dividends not yet apportioned (including \$ Modco).....		
6.3 Coupons and similar benefits (including \$ Modco).....		
7. Amount provisionally held for deferred dividend policies not included in Line 6.....		
8. Premiums and annuity considerations for life and accident and health contracts received in advance less \$ discount; including \$7,919,814 accident and health premiums.....	40,786,779	30,097,576
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.....	13,436,052	7,673,131
9.3 Other amounts payable on reinsurance, including \$5,821,455 assumed and \$8,612,720 ceded.....	14,434,175	19,151,509
9.4 Interest Maintenance Reserve.....		
10. Commissions to agents due or accrued-life and annuity contracts \$42,769,722, accident and health \$253,515 and deposit-type contract funds \$11,699,292.....	54,722,529	25,768,037
11. Commissions and expense allowances payable on reinsurance assumed.....	4,935,565	4,937,613
12. General expenses due or accrued.....	1,050,727,196	1,074,342,178
13. Transfers to Separate Accounts due or accrued (net) (including \$(147,438,217) accrued for expense allowances recognized in reserves, net of reinsured allowances).....	(168,379,262)	(228,875,358)
14. Taxes, licenses and fees due or accrued, excluding federal income taxes.....	43,714,178	67,425,911
15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses).....		
15.2 Net deferred tax liability.....		
16. Unearned investment income.....	254,817,384	162,598,176
17. Amounts withheld or retained by company as agent or trustee.....	18,900,172	34,781,798
18. Amounts held for agents' account, including \$ agents' credit balances.....	354,153,322	335,418,514
19. Remittances and items not allocated.....	1,037,141,741	368,913,864
20. Net adjustment in assets and liabilities due to foreign exchange rates.....		
21. Liability for benefits for employees and agents if not included above.....	187,681,298	187,472,254
22. Borrowed money \$249,799,819 and interest thereon \$	249,799,819	249,867,743
23. Dividends to stockholders declared and unpaid.....		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve.....	2,716,179,375	3,207,069,587
24.02 Reinsurance in unauthorized and certified (\$) companies.....	193,524	204,479
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers.....		
24.04 Payable to parent, subsidiaries and affiliates.....	9,246,310	(7,053,829)
24.05 Drafts outstanding.....		
24.06 Liability for amounts held under uninsured plans.....		
24.07 Funds held under coinsurance.....	4,071,581,202	4,001,137,453
24.08 Derivatives.....	5,412,759,897	5,979,259,357
24.09 Payable for securities.....	240,776,598	78,913,791
24.10 Payable for securities lending.....		
24.11 Capital notes \$ and interest thereon \$		
25. Aggregate write-ins for liabilities.....	8,906,720,361	8,741,413,480
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25).....	160,310,922,346	155,195,727,040
27. From Separate Accounts Statement.....	70,839,137,687	69,162,278,428
28. Total liabilities (Lines 26 and 27).....	231,150,060,033	224,358,005,468
29. Common capital stock.....		
30. Preferred capital stock.....		
31. Aggregate write-ins for other than special surplus funds.....		
32. Surplus notes.....	2,267,988,195	2,267,627,287
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).....	12,450,863,598	13,434,339,366
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).....	14,722,101,793	15,705,216,653
38. Totals of Lines 29, 30 and 37.....	14,722,101,793	15,705,216,653
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3).....	245,872,161,826	240,063,222,121
DETAILS OF WRITE-INS		
2501. Repurchase agreements.....	4,858,802,272	4,212,561,002
2502. Derivative collateral.....	2,010,639,434	2,660,944,773
2503. Derivative accrued interest.....	1,962,215,973	1,781,371,416
2598. Summary of remaining write-ins for Line 25 from overflow page.....	75,062,682	86,536,289
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above).....	8,906,720,361	8,741,413,480
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	16,713,495,443	15,022,709,126	17,461,646,567
2. Considerations for supplementary contracts with life contingencies	16,491,506	13,957,507	24,676,699
3. Net investment income	5,244,082,725	4,930,429,196	6,427,963,678
4. Amortization of Interest Maintenance Reserve (IMR)	59,425,344	89,017,678	112,616,566
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(20)	1,003,288	1,003,477
6. Commissions and expense allowances on reinsurance ceded	106,940,163	85,159,251	129,971,697
7. Reserve adjustments on reinsurance ceded	(109,711,407)	9,188,939	3,722,987
8. Miscellaneous Income:			
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	294,472,168	276,762,336	374,855,328
8.2 Charges and fees for deposit-type contracts			
8.3 Aggregate write-ins for miscellaneous income	447,990,815	773,216,921	916,084,043
9. Totals (Lines 1 to 8.3)	22,773,186,737	21,201,444,242	25,452,541,042
10. Death benefits	1,345,808,857	1,412,730,877	1,851,615,205
11. Matured endowments (excluding guaranteed annual pure endowments)	11,614,830	17,554,353	22,525,034
12. Annuity benefits	1,498,836,228	1,506,948,090	2,000,522,288
13. Disability benefits and benefits under accident and health contracts	274,652,410	278,189,450	369,700,752
14. Coupons, guaranteed annual pure endowments and similar benefits			
15. Surrender benefits and withdrawals for life contracts	12,266,505,921	12,334,249,442	15,411,684,915
16. Group conversions			
17. Interest and adjustments on contract or deposit-type contract funds	324,987,618	245,486,015	334,690,683
18. Payments on supplementary contracts with life contingencies	11,097,533	9,261,645	12,620,137
19. Increase in aggregate reserves for life and accident and health contracts	5,105,189,175	4,047,783,983	3,620,913,739
20. Totals (Lines 10 to 19)	20,838,692,572	19,852,203,855	23,624,272,753
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only)	707,487,222	667,172,908	918,614,536
22. Commissions and expense allowances on reinsurance assumed	67,360,211	68,680,815	90,237,538
23. General insurance expenses	1,753,177,061	1,887,645,071	2,598,943,259
24. Insurance taxes, licenses and fees, excluding federal income taxes	185,679,905	173,502,455	244,513,863
25. Increase in loading on deferred and uncollected premiums	(33,146,382)	(14,322,761)	(2,756,358)
26. Net transfers to or (from) Separate Accounts net of reinsurance	(1,064,737,895)	(2,389,250,581)	(2,880,987,974)
27. Aggregate write-ins for deductions	(832,043,642)	(632,490,730)	(863,948,960)
28. Totals (Lines 20 to 27)	21,622,469,052	19,613,141,032	23,728,888,657
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	1,150,717,685	1,588,303,210	1,723,652,385
30. Dividends to policyholders	1,145,025,266	1,150,627,362	1,569,130,529
31. Net gain from operations after dividends to policyholders and before federal income taxes (Line 29 minus Line 30)	5,692,419	437,675,848	154,521,856
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	20,795,137	(169,455,781)	(319,605,799)
33. Net gain from operations after dividends to policyholders and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	(15,102,718)	607,131,629	474,127,655
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ 9,422,004 (excluding taxes of \$ 16,295,839) transferred to the IMR	(1,284,037,002)	(414,028,566)	(422,051,259)
35. Net income (Line 33 plus Line 34)	(1,299,139,720)	193,103,063	52,076,396
CAPITAL AND SURPLUS ACCOUNT			
36. Capital and surplus, December 31, prior year	15,705,216,653	15,423,489,956	15,423,489,956
37. Net income (Line 35)	(1,299,139,720)	193,103,063	52,076,396
38. Change in net unrealized capital gains (losses) less capital gains tax of \$ 71,751,508	342,686,970	87,009,635	367,766,370
39. Change in net unrealized foreign exchange capital gain (loss)	(383,904,983)	632,486,826	720,964,144
40. Change in net deferred income tax	301,197,710	24,403,046	(1,084,216,547)
41. Change in nonadmitted assets	(375,565,915)	(153,410,499)	124,348,002
42. Change in liability for reinsurance in unauthorized and certified companies	10,955		(204,479)
43. Change in reserve on account of change in valuation basis, (increase) or decrease			
44. Change in asset valuation reserve	490,890,212	(87,508,962)	(29,061,218)
45. Change in treasury stock			
46. Surplus (contributed to) withdrawn from Separate Accounts during period	3,153	10,136,548	10,139,720
47. Other changes in surplus in Separate Accounts Statement	(3,113)	(10,136,531)	(10,139,720)
48. Change in surplus notes	360,907	35,588,671	35,696,688
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	(59,651,036)	(2,745,922)	94,357,341
54. Net change in capital and surplus for the year (Lines 37 through 53)	(983,114,860)	728,925,875	281,726,697
55. Capital and surplus, as of statement date (Lines 36 + 54)	14,722,101,793	16,152,415,831	15,705,216,653
DETAILS OF WRITE-INS			
08.301. Management and administrative fees	215,590,331	544,772,796	620,758,034
08.302. Revenue sharing	91,197,527	106,941,596	140,801,634
08.303. Experience refunds on reinsurance contracts	95,073,620		1,123,013
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	46,129,337	121,502,529	153,401,362
08.399. Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	447,990,815	773,216,921	916,084,043
2701. Change in reserves due to reinsurance agreement	(1,007,140,646)	(645,448,313)	(886,570,313)
2702. Reinsurance ceded adjustment	(10,909,122)	(13,948,676)	(17,890,200)
2703. Market value adjustment transfer	(4,138,340)	(14,871,678)	(15,508,211)
2798. Summary of remaining write-ins for Line 27 from overflow page	190,144,466	41,777,937	56,019,764
2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	(832,043,642)	(632,490,730)	(863,948,960)
5301. Other changes in surplus	(48,741,914)	11,202,754	51,702,967
5302. Reinsurance ceded adjustment	(10,909,122)	(13,948,676)	(17,890,200)
5303. Change in minimum pension liability			60,544,574
5398. Summary of remaining write-ins for Line 53 from overflow page			
5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above)	(59,651,036)	(2,745,922)	94,357,341

STATEMENT AS OF SEPTEMBER 30, 2018 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	17,098,898,087	14,885,798,703	20,924,687,105
2. Net investment income	5,132,951,322	5,077,040,668	6,542,348,803
3. Miscellaneous income	680,233,008	726,818,712	1,269,034,050
4. Total (Lines 1 to 3)	22,912,082,417	20,689,658,083	28,736,069,958
5. Benefit and loss related payments	16,025,021,056	15,498,561,849	19,718,437,173
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(1,125,233,992)	(3,014,436,505)	(3,510,470,791)
7. Commissions, expenses paid and aggregate write-ins for deductions	1,850,281,394	1,972,569,704	2,636,613,112
8. Dividends paid to policyholders	1,111,570,898	1,095,763,258	1,576,933,507
9. Federal and foreign income taxes paid (recovered) net of \$ 61,101,233 tax on capital gains (losses)	(229,851,893)	51,076,659	2,936,449
10. Total (Lines 5 through 9)	17,631,787,463	15,603,534,965	20,424,449,450
11. Net cash from operations (Line 4 minus Line 10)	5,280,294,954	5,086,123,118	8,311,620,508
Cash from Investments			
12. Proceeds from investments sold, matured or repaid:			
12.1 Bonds	13,181,436,527	15,003,013,999	19,836,499,683
12.2 Stocks	1,408,252,726	459,280,528	861,618,650
12.3 Mortgage loans	2,113,563,651	2,182,819,182	3,063,570,079
12.4 Real estate	275,807,609	225,069,188	225,545,341
12.5 Other invested assets	1,643,999,163	1,428,861,886	1,971,529,593
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	(1,202,053)	25,438,349	34,823,446
12.7 Miscellaneous proceeds	(281,279,798)	(381,496,997)	(253,407,031)
12.8 Total investment proceeds (Lines 12.1 to 12.7)	18,340,577,825	18,942,986,135	25,740,179,761
13. Cost of investments acquired (long-term only):			
13.1 Bonds	19,638,992,662	19,440,562,161	24,909,025,693
13.2 Stocks	816,280,459	882,562,498	1,114,586,074
13.3 Mortgage loans	2,993,883,118	3,263,176,215	4,543,378,623
13.4 Real estate	20,088,141	189,499,207	267,252,878
13.5 Other invested assets	1,383,746,130	980,600,962	1,850,706,935
13.6 Miscellaneous applications	212,560,350	387,350,488	687,627,366
13.7 Total investments acquired (Lines 13.1 to 13.6)	25,065,550,860	25,143,751,531	33,372,577,569
14. Net increase (or decrease) in contract loans and premium notes	727,536,384	680,364,965	867,421,224
15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	(7,452,509,419)	(6,881,130,361)	(8,499,819,032)
Cash from Financing and Miscellaneous Sources			
16. Cash provided (applied):			
16.1 Surplus notes, capital notes		35,588,672	35,696,688
16.2 Capital and paid in surplus, less treasury stock			
16.3 Borrowed funds	(116,542)	(123,993)	(188,056)
16.4 Net deposits on deposit-type contracts and other insurance liabilities	(253,552,471)	1,358,070,871	1,359,595,314
16.5 Dividends to stockholders			
16.6 Other cash provided (applied)	536,684,195	(828,548,136)	(1,353,276,080)
17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	283,015,182	564,987,412	41,827,866
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)	(1,889,199,283)	(1,230,019,831)	(146,370,658)
19. Cash, cash equivalents and short-term investments:			
19.1 Beginning of year	3,579,565,622	3,725,936,280	3,725,936,280
19.2 End of period (Line 18 plus Line 19.1)	1,690,366,339	2,495,916,449	3,579,565,622

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

20.0001. Bond conversions and refinancing	414,633,566	404,169,269	795,770,615
20.0002. Transfers from bonds to other invested assets	199,694,466		
20.0003. Partnerships and LLCs contributed to Insurance Road LLC	188,119,173		743,411,455
20.0004. Premium for liabilities to bonds	117,071,776		
20.0005. Transfer of mortgage loan to partnerships	81,265,450		
20.0006. Bonds and common stock contributed to EM Opportunities LLC	74,068,049		
20.0007. Stock conversions	61,620,127	92,967,487	330,787,631
20.0008. Transfer of partnerships to real estate	56,615,096		
20.0009. Bank loan rollovers	49,020,563		
20.0010. Dividend declared from Insurance Road LLC	40,000,000		

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company

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

20.0011. Change in market value of COLI	35,561,515	111,411,520	139,443,155
20.0012. Dividend reinvestment	11,029,312	6,996,843	8,689,847
20.0013. Net investment income payment in-kind bonds	8,207,371	20,706,839	3,011,624
20.0014. Net investment income payment in-kind stocks	460,873		
20.0015. Return of capital	105,953		
20.0016. Other invested assets contributed to subsidiary		663,297,197	
20.0017. Bonds received as consideration for a group annuity contract		270,503,724	489,864,212
20.0018. Transfer of real estate to other invested assets		138,468,488	138,468,488
20.0019. Transfer of affiliated common stock		102,800,714	102,800,714
20.0020. Bond distributions from other invested assets		94,448,349	94,448,349
20.0021. Other invested assets to stocks		773,601	
20.0022. Premium ceded under new reinsurance agreement			4,001,682,588
20.0023. Funds held under coinsurance			4,001,571,695
20.0024. Premium recognized for a group annuity contract			489,864,212
20.0025. Partnerships and LLCs contributed to MassMutual Asset Finance LLC			350,249,750
20.0026. Stock to bond			73,953,110
20.0027. Transfer of mortgage loan to other than invested assets			19,836,861
20.0028. Stock distributions from other invested assets			2,405,798

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	5,101,143,526	4,721,215,150	6,913,917,419
3. Ordinary individual annuities	1,640,979,367	1,491,515,067	2,227,086,638
4. Credit life (group and individual)			
5. Group life insurance	574,742,050	1,013,506,146	1,442,551,013
6. Group annuities	8,566,567,892	6,865,999,556	9,760,022,176
7. A & H - group	259,329	161,577	228,844
8. A & H - credit (group and individual)			
9. A & H - other	558,454,239	543,469,804	729,532,195
10. Aggregate of all other lines of business			
11. Subtotal	16,442,146,403	14,635,867,300	21,073,338,285
12. Deposit-type contracts	2,892,406,836	4,369,962,475	5,073,709,810
13. Total	19,334,553,239	19,005,829,775	26,147,048,095
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 #	2018	2017
NET INCOME					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ (1,299,139,720)	\$ 52,076,396
(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	\$ (1,299,139,720)	\$ 52,076,396
SURPLUS					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 14,722,101,793	\$ 15,705,216,653
(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	\$ 14,722,101,793	\$ 15,705,216,653

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 nine months ended September 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	(45,344,914)	(45,344,914)	45,344,914
Policyholders' dividends	(3,397,000)	(3,397,000)	3,397,000
Total	\$ (48,741,914)	\$ (143,404,071)	

Of the \$143,404,071 decrease to surplus for prior years' errors, \$48,741,914 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 Summary of Operations.

NOTES TO FINANCIAL STATEMENTS

For the nine months ended September 30, 2017, 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	\$ -	\$ (1,477,867)	\$ (1,477,867)
Other than invested assets	4,115,825	4,115,825	4,115,825
Policyholders' reserves	5,230,979	5,230,979	(5,230,979)
General expenses due or accrued	(3,835,198)	(3,835,198)	3,835,198
Other Liabilities	246,229	246,229	246,229
Total	<u>\$ 5,757,835</u>	<u>\$ 4,279,968</u>	

Of the \$4,279,968 increase to surplus for prior years' errors, \$5,757,835 was recorded as prior period adjustments and \$1,477,867 was recorded as a change in nonadmitted assets, net of tax in the Summary of Operations.

b. Adoption of new accounting standards:

In June 2016, the NAIC adopted substantive revisions 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 Company is currently assessing the impact of these modifications on the Company's financial statements.

In January 2017, the NAIC adopted modifications to SSAP No. 86, Derivatives, which were effective January 1, 2018. The modifications maintain gross reporting of derivative variation margin as a separate unit of account, rather than characterizing as a legal settlement with mark-to-market changes recorded in surplus. Regarding exchange traded futures, these modifications further clarified that variation margin and mark-to-market changes should be recorded in the same manner as all other derivative instruments. Starting in 2018, the Company records mark-to-market gains and losses from exchange traded futures as unrealized gains or losses instead of realized gains or losses and grosses up the derivatives and collateral line items on its financial statements. These modifications did not impact total surplus and did not have a material impact on the Company's financial statements.

In April 2017, the NAIC adopted modifications to SSAP No. 69, Statement of Cash Flows, to adopt Accounting Standards Update (ASU) No. 2016-15, Classification of Certain Cash Receipts and Cash Payments, in its entirety, effective January 1, 2018 on a retrospective basis. In June 2017, the NAIC adopted additional modifications to SSAP No. 69 to incorporate portions of ASU No. 2016-18, Restricted Cash, effective December 31, 2019 with early adoption permitted. The initial modifications address the classification and disclosure of certain items within the statements of cash flows. Upon adoption, proceeds from the settlement of the Company's corporate owned life insurance policies were classified as investing activities instead of operating activities. Additionally, the Company elected to apply the nature of distribution approach to subsidiary, controlled or affiliated equity method investments and the cumulative earnings approach to all other equity method investments in determining whether distributions received from equity method investees are returns on investment, recorded as operating activities, or returns of investment, recorded as investing activities. Effective January 1, 2018, the Company early adopted on a retrospective basis the second modification by adding restricted cash, cash equivalents and short-term investments to the existing statutory disclosure requirements, which are defined in SSAP No. 1, Accounting Policies, Risks & Uncertainties and Other Disclosures. Although the adoption of these modifications required reclassification between investing and operating cash flows, they did not have a material impact on the Company's financial statements.

In October 2017, the NAIC adopted revisions to SSAP No. 68, Business Combinations and Goodwill, to include information about impairment triggering events that previously existed in SSAP No. 90, Impairment or Disposal of Real Estate Investments, to ensure that the impairment process is discussed in its entirety within SSAP No. 68. Specifically the NAIC modified paragraph 8 of SSAP No. 68 to include information about impairment triggering events affecting long-lived assets which include; a) a significant decrease in its fair value, b) a significant adverse change in the extent or manner in which the asset is being utilized, c) a significant adverse change in legal factors or in the business climate that could potentially affect its value, d) an accumulation of costs that significantly exceed the amount originally anticipated for acquisition or construction, e) a current period operating or cash flow loss combined with a history of operating or cash flow losses, or a projection or forecast demonstrating continuous loss associated with its use, and f) a current expectation that, more likely than not, the asset will be sold or disposed of before the end of its estimated useful life. The Company continues to assess goodwill impairment in accordance with the revisions to SSAP No. 68. The adoption of the revisions did not have a material effect on the Company's financial statements.

In November 2017, the NAIC adopted modifications to SSAP No. 100R, Fair Value, allowing net asset value (NAV) per share as a practical expedient to fair value, either when specifically named in a SSAP or when the investee qualifies as an investment company, which were effective January 1, 2018. These modifications adopted, with modification, applicable U.S. GAAP, allowing greater consistency with Financial Accounting Standards Board's allowable use of NAV. These modifications also included the U.S. GAAP requirement to report instruments measured at NAV as a practical expedient outside of the fair value hierarchy disclosure as a separate item, along with a description of the terms and conditions of redemption features, amounts of unfunded commitments, restrictions to sell, and various other items. As a result of these modifications, the NAIC issued SSAP No. 100R, Fair Value. The adoption of these modifications did not have an impact on the Company's financial statements.

In November 2017, the NAIC adopted modifications to SSAP No. 97, Investments in Subsidiary, Controlled and Affiliated Entities, for SCA (Subsidiary and Controlled Affiliate) loss tracking and filing deadlines, which are effective December 31, 2018. The modifications add a loss-tracking disclosure for inclusion in year-end financials, which will track the losses beginning when the SCA's equity value falls below zero and will remain as long as the SCA's equity value remains in a deficit position and through the first year in which the equity position becomes positive. The modifications further clarify the SCA filing deadlines that have extended the Sub-1 filings from a 30-day to a 90-day timeframe and the Sub 2 from a June 30th deadline to an August 31st deadline. For SCA filings that regularly occur after the August 31st deadline, the filing is due one month after the audit date. The Company has adopted these modifications and currently has very few SCA's in a loss position.

In February 2018, the NAIC adopted modifications to SSAP No. 9, Subsequent Events, and SSAP No. 101, Income Taxes, to temporarily allow any revised tax calculations resulting from the Tax Cuts and Job Act that occurred after statutory filing, to be classified as changes in estimate, thus avoiding classification as Type 1 subsequent events. Under SSAP No. 9, reporting entities are generally required to amend their filed statutory financial statements in their domestic state to ensure that the statutory financial statements and the audited financial statements are consistent if a Type 1 event is identified after the statutory financial statements are filed, but before the audited financial statements are issued. The adoption of this modification did not materially impact the Company's financial statements.

NOTES TO FINANCIAL STATEMENTS

In February 2018, the NAIC adopted modifications to SSAP No. 92, Pensions, and SSAP No. 102, Postretirement Benefits Other Than Pension, to eliminate the reconciliation of level 3 pension plan assets from the Company's financial statement disclosures, which were effective March 24, 2018. This guidance further clarifies that detailed information regarding the reconciliation of the level 3 fair value categories of these assets is no longer required for statutory reporting purposes as the plan assets are not reported in the balance sheet of insurance entities. The Company has adopted these modifications.

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:

	(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	645,690	-	157,509	488,181
c. Total first quarter	<u>\$ 645,690</u>	<u>\$ -</u>	<u>\$ 157,509</u>	<u>\$ 488,181</u>
OTTI recognized in the second quarter				
d. Intent to sell	\$ -	\$ -	\$ -	\$ -
e. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis	634,235	-	355,014	279,221
f. Total second quarter	<u>\$ 634,235</u>	<u>\$ -</u>	<u>\$ 355,014</u>	<u>\$ 279,221</u>
OTTI recognized in the third quarter				
g. Intent to sell	\$ -	\$ -	\$ -	\$ -
h. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis	5,082,148	-	1,170,166	3,911,982
i. Total third quarter	<u>\$ 5,082,148</u>	<u>\$ -</u>	<u>\$ 1,170,166</u>	<u>\$ 3,911,982</u>
OTTI recognized in the fourth quarter				
j. Intent to sell	\$ -	\$ -	\$ -	\$ -
k. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis	-	-	-	-
l. Total fourth quarter	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
m. Annual aggregate total		<u>\$ -</u>	<u>\$ 1,682,689</u>	

All impairments were taken due to the present value of cash flows expected to be collected being less than the amortized cost basis.

NOTES TO FINANCIAL STATEMENTS

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

CUSIP	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value at Time of OTTI	Date of Financial Instrument Where Reported
07386HEN7	\$ 43,711	\$ 2,334	\$ (41,377)	\$ 2,334	\$ 1,609	March 31, 2018
79548KXQ6	520,764	476,293	(44,471)	476,293	365,994	March 31, 2018
45660NZY4	81,215	9,554	(71,661)	9,554	80,891	March 31, 2018
59020UW43	337,732	271,686	(66,046)	271,686	354,508	June 30, 2018
76110H4M8	6,848	1,969	(4,879)	1,969	1,713	June 30, 2018
863579DV7	289,655	5,567	(284,089)	5,567	30,531	June 30, 2018
05535DCF9	3,453,726	3,140,349	(313,377)	3,140,349	3,134,409	September 30, 2018
07384YPP5	321,556	148,612	(172,945)	148,612	132,968	September 30, 2018
07386HCP4	2,164	(6,255)	(8,418)	(6,255)	320	September 30, 2018
07386HEN7	-	(41,377)	(41,377)	(41,377)	-	September 30, 2018
59020UW43	329,155	263,109	(66,046)	263,109	330,939	September 30, 2018
76110H4M8	6,594	(3,719)	(10,313)	(3,719)	641	September 30, 2018
79548KXQ6	467,480	383,145	(84,335)	383,145	292,015	September 30, 2018
863579DV7	289,784	5,696	(284,089)	5,696	28,209	September 30, 2018
45660NZY4	100,128	28,466	(71,661)	28,466	30,813	September 30, 2018
86359ACG6	(6,046)	(6,044)	2	(6,044)	2	September 30, 2018
939336Z48	117,607	-	(117,607)	-	126,945	September 30, 2018
Totals	\$ 6,362,073	\$ 4,679,385	\$ (1,682,689)	\$ 4,679,385	\$ 4,912,507	

- (4) As of September 30, 2018, 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	\$ (66,353,271)
2.	12 months or longer	\$ (54,596,429)
b.	The aggregate related fair value of securities with unrealized losses:	
1.	Less than 12 months	\$ 6,186,274,900
2.	12 months or longer	\$ 1,364,118,957

- (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	YES	
b. Tri-Party (YES/NO)	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	\$ -	\$ 1,121,882,350	\$ 320,537,814	\$ -	\$ -	\$ -	\$ -	\$ -
e. > 1 Month to 3 Months	\$ 94,828,125	\$ 2,105,640,126	\$ 964,706,241	\$ 1,496,137,626	\$ 1,007,169,375	\$ 2,119,566,600	\$ 1,563,633,781	\$ 1,007,169,375
f. > 3 Months to 1 Year	\$ 1,741,826,405	\$ 4,108,773,155	\$ 2,864,718,629	\$ 2,604,256,939	\$ 1,971,923,013	\$ 3,087,912,301	\$ 2,536,512,794	\$ 3,087,912,301
g. > 1 Year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

NOTES TO FINANCIAL STATEMENTS

	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	\$ 319,312,500	\$ 744,687,500	\$ 294,852,809	\$ 425,375,000	\$ -	\$ -	\$ -	\$ -
e. > 1 Month to 3 Months	\$ 92,596,875	\$ 2,293,329,751	\$ 839,267,760	\$ 2,293,329,751	\$ -	\$ -	\$ -	\$ -
f. > 3 Months to 1 Year	\$ 2,112,693,673	\$ 4,103,662,024	\$ 3,482,143,563	\$ 2,112,693,673	\$ -	\$ -	\$ -	\$ -
g. > 1 Year	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(4) The company did not have any repurchase agreements where securities sold and/or acquired resulted in default as of September 30, 2018.

(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	\$ 4,100,394,564	XXX	XXX	XXX	\$ 4,095,081,676
b. Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
c. Fair Value	\$ 4,100,394,564	\$ 4,203,824,405	\$ 4,149,962,685	\$ 4,100,394,564	\$ 4,090,299,176	\$ 4,113,037,064	\$ 4,100,146,575	\$ 4,095,081,676

	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	\$ 4,831,398,424	XXX	XXX	XXX	\$ -
b. Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
c. Fair Value	\$ 4,097,581,676	\$ 4,856,687,174	\$ 4,616,264,132	\$ 4,831,398,424	\$ -	\$ -	\$ -	\$ -

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

ENDING BALANCE

	1 NONE	2 NAIC 1	3 NAIC 2	4 NAIC 3	5 NAIC 4	6 NAIC 5	7 NAIC 6	8 NON- ADMITTED
	a. Bonds - BACV	\$ -	\$ 4,831,398,424	\$ -	\$ -	\$ -	\$ -	\$ -
b. Bonds - FV	-	4,831,398,424	-	-	-	-	-	-
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	\$ -	\$ 4,831,398,424	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
q. Total Assets - FV	\$ -	\$ 4,831,398,424	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

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

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

(7) Collateral Received – 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. Cash	\$ 624,582	\$ 10,857,033	\$ 6,430,230	\$ 10,295,552	\$ 388,552	\$ 2,390,171	\$ 1,255,946	\$ 503,580
b. Securities (FV)	\$ 3,778,390,472	\$ 4,206,605,166	\$ 4,126,411,115	\$ 4,108,428,154	\$ 4,096,770,136	\$ 4,125,503,202	\$ 4,109,336,506	\$ 4,103,040,109

	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. Cash	\$ 503,580	\$ 9,502,602	\$ 5,067,207	\$ 9,502,602	\$ -	\$ -	\$ -	\$ -
b. Securities (FV)	\$ 4,107,196,773	\$ 4,869,201,192	\$ 4,628,107,460	\$ 4,842,429,259	\$ -	\$ -	\$ -	\$ -

NOTES TO FINANCIAL STATEMENTS

(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	\$ 9,502,602	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Bonds - FV	-	4,842,429,259	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-
Total Collateral Assets - FV (Sum of a through i)	\$ 9,502,602	\$ 4,842,429,259	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

(9) Allocation of Aggregate Collateral by Remaining Contractual Maturity

	FAIR VALUE
a. Overnight and Continuous	\$ -
b. 30 Days or Less	\$ 2,338,625,801
c. 31 to 90 Days	\$ 2,442,772,623
d. > 90 Days	\$ -

(10) The company did not have any repurchase agreements where cash collateral received was reinvested as of September 30, 2018.

(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)	\$ 624,582	\$ 10,857,033	\$ 6,430,230	\$ 10,295,552	\$ 388,552	\$ 2,390,171	\$ 1,255,946	\$ 503,580
b. Securities Collateral (FV)	\$ 3,778,390,472	\$ 4,206,605,166	\$ 4,126,411,115	\$ 4,108,428,154	\$ 4,096,770,136	\$ 4,125,503,202	\$ 4,109,336,506	\$ 4,103,040,109

	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)	\$ 503,580	\$ 9,502,602	\$ 5,067,207	\$ 9,502,602	\$ -	\$ -	\$ -	\$ -
b. Securities Collateral (FV)	\$ 4,107,196,773	\$ 4,869,201,192	\$ 4,628,107,460	\$ 4,842,429,259	\$ -	\$ -	\$ -	\$ -

- g. Reverse repurchase agreements transactions accounted for as secured borrowing: The Company did not have any reverse repurchase 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 September 30, 2018:

NOTES TO FINANCIAL STATEMENTS

CUSIP Identification	Actual Cost	Fair Value	Book / Adjusted Carrying Value	Mortgage-Referenced Security (YES/NO)
391164AF7	\$ 8,467,560	\$ 7,917,044	\$ 8,259,365	NO
P7794GAH5	1,262,834	1,273,212	1,270,196	NO
912810FR4	4,944,283	6,146,331	4,855,505	NO
912810PS1	1,874,118	2,644,701	1,887,674	NO
912810RF7	67,974,258	81,078,071	68,228,928	NO
059514AC3	9,327,385	9,889,500	9,358,320	NO
478375AL2	817,025	739,743	815,895	NO
478375AN8	896,331	828,094	896,164	NO
Total	\$ 95,563,794	\$ 110,516,696	\$ 95,572,047	XXX

p. 5* Securities:

Investment	Number of 5* Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	65	26	\$499,395,771	\$231,812,447	\$486,878,082	\$231,193,912
(2) LB&SS - AC	-	-	-	-	-	-
(3) Preferred Stock - AC	3	3	14,600,149	14,600,149	18,696,750	17,316,290
(4) Preferred Stock - FV	-	-	-	-	-	-
(5) Total (1+2+3+4)	68	29	\$513,995,920	\$246,412,596	\$505,574,832	\$248,510,202

AC - Amortized Cost FV - Fair Value

q. Short Sales - The Company does not engage in short sale transactions.

r. Prepayment Penalty and Acceleration Fees:

	Nine Months Ended September 30, 2018	
	General Account	Separate Account
1. Number of CUSIPS	104	24
2. Aggregate Amount of Investment Income	\$ 31,286,285	\$ 2,908,921

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**

On December 22, 2017, the president signed into law H.R. 1/Public Law 115-97, commonly known as the Tax Cuts and Jobs Act. As of December 31, 2017, the Company recorded provisional tax amounts with respect to mandatory deemed repatriation of previously untaxed foreign earnings and the impact of a change in the method for computing deductions for life insurance reserves. As of September 30, 2018, the Company recorded an additional tax benefit of \$1 million in the statement of operations related to mandatory deemed repatriation. Additionally, the Company revised its life insurance reserve transition adjustment. The Company initially recorded an increase of \$487 million in its deferred tax asset as of 12/31/17 which was reduced by \$46 million for the period. These amounts were fully offset by corresponding changes to the deferred tax liability related to the future taxable income to be spread over 8 years.

Note 10 – Information Concerning Parent, Subsidiaries and Affiliates

a-c. In August 2017, MassMutual International LLC (MMI) entered into an agreement to sell MassMutual Asia Limited (MM Asia) to Yunfeng Financial Group (Yunfeng FG). The sale is expected to close in 2018, subject to regulatory approval and customary closing conditions. Under the terms of the agreement, MMI will receive cash of approximately \$1,000,000,000 and Yunfeng FG shares valued at approximately \$384,000,000 as of September 30, 2018. On the transaction date, the agreement also requires MM Asia to have a Solvency Margin Ratio at a certain level. MMI has made a capital contribution to MM Asia in order to meet this capital level.

In March, 2018, MassMutual and MMI entered into an agreement to sell 85.1% of MassMutual Life Insurance Company in Japan (MM Japan), a wholly-owned life insurance and wealth management subsidiary of MMI, to Nippon Life. MMI estimated the fair value of the retained portion of MM Japan based upon the agreed selling price of the sold portion of MM Japan with the buyer. The sale of MM Japan closed in May 2018. MMI received \$960,126,929 in cash proceeds from the sale.

The amount of the proceeds from the sale of MM Japan and anticipated proceeds from the sale of MM Asia is expected to be less than MMI's book value. As such, MMI's book value was reduced to an estimated fair value of \$2,700,000,000 and an impairment of \$1,257,307,000 was recorded in net realized capital gains (losses). The impairment reduced MassMutual's asset valuation reserve by approximately \$900,000,000, resulting in approximately \$300,000,000 net decrease to surplus, net of a tax benefit of \$103,000,000. Any additional gain or loss on disposal will be realized when the MM Asia sales is finalized.

MassMutual contributed additional capital of \$204,267,226 to MMI during the nine months ended September 30, 2018 and contributed additional capital of \$20,000,000 during the nine months ended September 30, 2017.

During the nine months ended September 30, 2018 MassMutual received \$858,000,000 as a return of capital from MMI.

MassMutual contributed additional capital of \$371,488,639 to MMHLLC during the nine months ended September 30, 2018 and \$135,000,000 during the nine months ended September 30, 2017.

d-f. No change

NOTES TO FINANCIAL STATEMENTS

- 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 \$945,270,671 as of September 30, 2018.

(2) FHLB Boston capital stock

a. Aggregate totals:

		September 30, 2018		
		1 Total 2+3	2 General Account	3 Separate Account
1.	Current Year:			
	(a) Membership stock - Class A	\$ -	\$ -	-
	(b) Membership stock - Class B	25,000,000	25,000,000	-
	(c) Activity Stock	48,700,000	48,700,000	-
	(d) Excess Stock	-	-	-
	(e) Aggregate Total	\$ 73,700,000	\$ 73,700,000	\$ -
	(f) Actual or Estimated Borrowing Capacity as Determined by the Insurer	\$ 2,000,000,000	\$ 2,000,000,000	\$ -
2.	Prior Year-end:			
	(a) Membership stock - Class A	\$ -	\$ -	-
	(b) Membership stock - Class B	25,000,000	25,000,000	-
	(c) Activity Stock	48,700,000	48,700,000	-
	(d) Excess Stock	-	-	-
	(e) Aggregate Total	\$ 73,700,000	\$ 73,700,000	\$ -
	(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:

		Nine Months Ended September 30, 2018					
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	25,000,000	25,000,000	-	-	-	-	

NOTES TO FINANCIAL STATEMENTS

(3) Collateral pledged to FHLB:

a. Amount pledged as of September 30, 2018:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,538,397,041	\$ 1,166,702,489	\$ 1,054,729,329

2. Current year general account:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 1,538,397,041	\$ 1,166,702,489	\$ 1,054,729,329

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	\$ 1,550,269,200	\$ 1,166,181,238	\$ 1,053,569,379

b. Maximum amount pledged for the nine months ended September 30, 2018:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,582,909,750	\$ 1,184,930,400	\$ 1,057,336,538

2. Current year general account:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 1,582,909,750	\$ 1,184,930,400	\$ 1,057,336,538

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	\$ 1,680,502,867	\$ 1,260,781,053	\$ 1,107,520,273

NOTES TO FINANCIAL STATEMENTS

(4) Borrowing from FHLB:

a. Amount:

1. Current year:

September 30, 2018

	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,054,729,329	1,054,729,329	-	1,054,729,329
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,054,729,329</u>	<u>\$ 1,054,729,329</u>	<u>\$ -</u>	<u>\$ 1,054,729,329</u>

2. Prior Year-end:

December 31, 2017

	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,053,569,379	1,053,569,379	-	1,053,569,379
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,053,569,379</u>	<u>\$ 1,053,569,379</u>	<u>\$ -</u>	<u>\$ 1,053,569,379</u>

b. Maximum Amount:

Nine Months Ended September 30, 2018

	1 Total 2+3	2 General Account	3 Separate Account
1. Debt	\$ -	\$ -	\$ -
2. Funding	1,057,336,538	1,057,336,538	-
3. Other	-	-	-
4. Aggregate	<u>\$ 1,057,336,538</u>	<u>\$ 1,057,336,538</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

	Nine Months Ended September 30,					
	2018	2017	2018	2017	2018	2017
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits per SSAP No 11	
(4) Components of net periodic benefit cost						
a. Service cost	\$ 84,575,924	\$ 75,295,640	\$ 10,292,471	\$ 9,032,930	\$ -	\$ -
b. Interest cost	80,710,129	83,830,421	8,795,806	9,387,629	-	-
c. Expected return on plan assets	(128,631,300)	(110,042,857)	(58,886)	(64,952)	-	-
d. Transition asset or obligation	-	-	-	-	-	-
e. Gains and losses	41,097,802	49,349,603	1,637,621	1,154,320	-	-
f. Prior service cost or (credit)	2,342,013	2,342,013	(4,139,625)	(4,139,625)	-	-
g. Gain or loss recognized due to a settlement or curtailment	-	-	-	-	-	-
h. Total net periodic benefit cost	<u>\$ 80,094,569</u>	<u>\$ 100,774,821</u>	<u>\$ 16,527,386</u>	<u>\$ 15,370,301</u>	<u>\$ -</u>	<u>\$ -</u>

(5-21) No change

b-i No change

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

(1-3) No change

NOTES TO FINANCIAL STATEMENTS

(4) The Company recorded dividends, recorded in net investment income, from MMHLLC of \$250,000,000 through the nine months ended September 30, 2018 and \$424,470,200 through the nine months ended September 30, 2017.

(5-13) No change

Note 14 – Liabilities, Contingencies and Assessments

- a. Contingent commitments - No change
- 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. The Company estimates that as of September 30, 2018, the aggregate range of reasonably possible losses is not material.

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 2018 or 2017.
 - (3) No change
 - (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2018 or 2017.
- (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 nine months ended September 30, 2018 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.

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

NOTES TO FINANCIAL STATEMENTS

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:

	September 30, 2018			Net Asset Value	
	Level 1	Level 2	Level 3	(NAV)	Total
Financial assets:					
Bonds:					
Industrial and miscellaneous	\$ 9,998,040	\$ 37,266,012	\$ 120,771,599	\$ -	\$ 168,035,651
Parent, subsidiaries and affiliates	-	65,751,193	58,216,885	-	123,968,078
Preferred stocks	-	-	745,683	-	745,683
Common stock - subsidiaries and affiliates	278,793,749	-	123,146,953	-	401,940,702
Common stock - unaffiliated	728,103,851	-	302,767,192	-	1,030,871,043
Derivatives:					
Interest rate swaps	-	7,174,325,904	-	-	7,174,325,904
Options	-	793,622,641	-	-	793,622,641
Currency swaps	-	486,828,788	-	-	486,828,788
Forward contracts	-	68,434,007	-	-	68,434,007
Credit default swaps	-	54,707	-	-	54,707
Interest rate caps and floors	-	10,050,896	-	-	10,050,896
Financial futures	-	6,160,169	-	-	6,160,169
Separate account assets	46,989,579,584	23,236,523,279	613,034,826	-	70,839,137,689
Total financial assets carried at fair value	\$ 48,006,475,223	\$ 31,879,017,596	\$ 1,218,683,138	\$ -	\$ 81,104,175,957
Financial liabilities:					
Interest rate swaps	\$ -	\$ 4,787,213,349	\$ -	\$ -	\$ 4,787,213,349
Options	-	2,264,516	-	-	2,264,516
Currency swaps	-	450,308,126	-	-	450,308,126
Forward contracts	-	37,042,261	-	-	37,042,261
Credit default swaps	-	196,134	-	-	196,134
Financial futures	-	134,287,500	-	-	134,287,500
Total financial liabilities carried at fair value	\$ -	\$ 5,411,311,887	\$ -	\$ -	\$ 5,411,311,887

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 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 September 30, 2018, there were no significant transfers between Level 1 and Level 2 and the Company does not have any financial instruments that were carried at NAV as a practical expedient.

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	December 31, 2017				
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Total
Financial assets:					
Bonds:					
Special revenue	\$ -	\$ 5,949,787	\$ -	\$ -	\$ 5,949,787
Industrial and miscellaneous	-	10,743,493	55,266,237	-	66,009,730
Parent, subsidiaries and affiliates	-	17,535,946	60,662,659	-	78,198,605
Preferred stocks	2,635,664	-	1,510,480	-	4,146,144
Common stock - subsidiaries and affiliates	344,139,041	-	109,665,674	-	453,804,715
Common stock - unaffiliated	901,122,199	-	310,576,050	-	1,211,698,249
Derivatives:					
Interest rate swaps	-	7,684,332,071	-	-	7,684,332,071
Options	-	744,440,948	-	-	744,440,948
Currency swaps	-	385,416,622	1,255,252	-	386,671,874
Forward contracts	-	13,178,525	-	-	13,178,525
Credit default swaps	-	481,454	-	-	481,454
Separate account assets	46,005,788,808	22,446,976,398	709,516,352	-	69,162,281,558
Total financial assets carried at fair value	\$ 47,253,685,712	\$ 31,309,055,244	\$ 1,248,452,704	\$ -	\$ 79,811,193,660
Financial liabilities:					
Derivatives:					
Interest rate swaps	\$ -	\$ 5,314,810,301	\$ 193,806	\$ -	\$ 5,315,004,107
Options	-	6,319,708	-	-	6,319,708
Currency swaps	-	560,167,926	8,432,028	-	568,599,954
Forward contracts	-	88,671,592	-	-	88,671,592
Credit default swaps	-	251,192	-	-	251,192
Total financial liabilities carried at fair value	\$ -	\$ 5,970,220,719	\$ 8,625,834	\$ -	\$ 5,978,846,553

For the year ended December 31, 2017, \$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 01/01/2018	Transfers ⁽¹⁾ In	Out	Gains (Losses) in Net Income	Gains (Losses) in Surplus	Purchases	Issuances	Sales	Settlements	Balance as of 9/30/2018
Financial assets:										
Bonds:										
Industrial and miscellaneous	\$ 55,266,237	\$ 94,821,887	\$ -	\$ (27,154,853)	\$ (5,328,602)	\$ -	\$ 4,166,930	\$ -	\$ (1,000,000)	\$ 120,771,599
Parent, subsidiaries and affiliates	60,662,659	-	-	-	(2,445,774)	-	-	-	-	58,216,885
Preferred stock	1,510,480	-	(1,510,480)	-	(280,962)	-	1,026,645	-	-	745,683
Common stock - subsidiaries and affiliates	109,665,674	9,397,855	(2,868,387)	430,948	2,769,723	-	3,751,140	-	-	123,146,953
Common stock - unaffiliated	310,576,050	8	-	2,523,216	715,387	16,316,913	-	(133,779)	(27,230,603)	302,767,192
Derivatives:										
Currency swaps	1,255,252	(1,255,252)	-	-	-	-	-	-	-	-
Separate account assets	709,516,352	-	-	38,533,863	-	92,030,619	-	(226,884,701)	(161,307)	613,034,826
Total financial assets	\$ 1,248,452,704	\$ 102,964,498	\$ (4,378,867)	\$ 14,333,174	\$ (4,570,228)	\$ 108,347,532	\$ 8,944,715	\$ (227,018,480)	\$ (28,391,910)	\$ 1,218,683,138
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. 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 01/01/2017	In	Out	(Losses) in Net Income	(Losses) in Surplus					as of 12/31/2017
Financial assets:										
Bonds:										
Industrial and miscellaneous Parent, subsidiaries, and affiliates	\$ 56,833,539	\$ 12,571,531	\$ (8,096,010)	\$ 684,574	\$ (2,546,245)	\$ 14,384	\$ 67,649	\$ -	\$ (4,263,185)	\$ 55,266,237
Preferred Stock	51,963,109	-	-	-	8,699,550	-	-	-	-	60,662,659
Common stock - subsidiaries and affiliates	2,734,341	-	(1,798,373)	-	(57,988)	632,500	-	-	-	1,510,480
Common stock - unaffiliated	63,196,191	-	(956,129)	9,563	13,230,098	-	45,517,058	(318,912)	(11,012,195)	109,665,674
Derivatives:	188,576,330	76,437,829	(5,838,443)	(5,959,511)	29,469,544	38,162,139	288,144	(7,700,000)	(2,859,982)	310,576,050
Currency swaps	-	6,109,957	-	(4,854,705)	-	-	-	-	-	1,255,252
Separate account assets	737,948,300	-	(5,069,821)	55,437,401	-	72,084,571	-	(149,919,175)	(964,924)	709,516,352
Total financial assets	\$ 1,101,251,810	\$ 95,119,317	\$ (21,758,776)	\$ 45,317,322	\$ 48,794,959	\$ 110,893,594	\$ 45,872,851	\$ (157,938,087)	\$ (19,100,286)	\$ 1,248,452,704
Financial liabilities:										
Derivatives:										
Interest rate swaps	\$ -	\$ -	\$ -	\$ -	\$ 193,806	\$ -	\$ -	\$ -	\$ -	\$ 193,806
Currency swaps	-	3,884,788	-	-	4,547,240	-	-	-	-	8,432,028
Total financial liabilities	\$ -	\$ 3,884,788	\$ -	\$ -	\$ 4,741,046	\$ -	\$ -	\$ -	\$ -	\$ 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".

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

	September 30, 2018					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	\$ 6,143,237,667	\$ 5,894,445,972	\$ -	\$ 6,142,705,908	\$ 531,759	\$ -	-
All other governments	1,396,376,145	1,386,441,163	-	1,329,665,646	66,710,499	-	-
States, territories and possessions	636,499,421	603,727,185	-	636,499,421	-	-	-
Political subdivisions	561,475,673	545,193,778	-	561,475,673	-	-	-
Special revenue	6,421,042,995	6,014,431,537	-	6,411,569,673	9,473,322	-	-
Industrial and miscellaneous	75,521,878,096	75,398,178,927	9,998,040	43,356,401,770	32,155,478,286	-	-
Parent, subsidiaries and affiliates	6,540,271,355	6,540,406,118	-	1,031,530,030	5,508,741,325	-	-
Preferred stocks	741,231,345	751,933,879	11,923,010	-	729,308,335	-	-
Common stocks - subsidiaries							
and affiliates ⁽¹⁾	401,940,702	401,940,702	278,793,749	-	123,146,953	-	-
Common stocks - unaffiliated	1,030,871,043	1,030,871,043	728,103,851	-	302,767,192	-	-
Mortgage loans - commercial	21,915,163,444	21,903,911,524	-	-	21,915,163,444	-	-
Mortgage loans - residential	1,348,813,906	1,424,155,278	-	-	1,348,813,906	-	-
Cash, cash equivalents and							
short-term investments	1,690,366,339	1,690,366,339	200,575,053	1,489,791,286	-	-	-
Derivatives:							
Interest rate swaps	7,408,468,783	7,174,325,904	-	7,408,468,783	-	-	-
Options	793,622,641	793,622,641	-	793,622,641	-	-	-
Currency swaps	486,828,788	486,828,788	-	486,828,788	-	-	-
Forward contracts	68,434,007	68,434,007	-	68,434,007	-	-	-
Credit default swaps	13,677,591	18,300,621	-	13,677,591	-	-	-
Financial futures	6,160,169	6,160,169	-	6,160,169	-	-	-
Separate account assets	70,839,137,687	70,839,137,687	46,989,579,583	23,236,523,278	613,034,826	-	-
Financial liabilities:							
Repurchase agreements	4,831,398,424	4,831,398,424	-	4,831,398,424	-	-	-
Commercial paper	249,799,819	249,799,819	-	249,799,819	-	-	-
Guaranteed interest contracts	8,440,241,750	8,641,918,198	-	-	8,440,241,750	-	-
Group annuity contracts and							
other deposits	17,890,301,609	17,802,938,121	-	-	17,890,301,609	-	-
Individual annuity contracts	6,998,331,255	5,967,639,793	-	-	6,998,331,255	-	-
Supplementary contracts	1,150,702,889	1,149,544,710	-	-	1,150,702,889	-	-
Derivatives:							
Interest rate swaps	5,071,672,624	4,787,213,350	-	5,071,672,624	-	-	-
Options	2,264,516	2,264,516	-	2,264,516	-	-	-
Currency swaps	450,308,126	450,308,126	-	450,308,126	-	-	-
Forward contracts	63,310,168	37,042,262	-	63,310,168	-	-	-
Credit default swaps	1,590,580	1,644,145	-	1,590,580	-	-	-
Financial futures	134,287,500	134,287,500	-	134,287,500	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$12,481,771,141.

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December 31, 2017

	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	\$ 7,697,358,100	\$ 7,148,646,302	\$ -	\$ 7,696,140,916	\$ 1,217,184	\$ -	\$ -
All other governments	1,269,456,629	1,180,636,469	-	1,199,532,954	69,923,675	-	-
States, territories and possessions	650,787,369	595,739,067	-	650,787,369	-	-	-
Political subdivisions	576,491,812	531,896,852	-	576,491,812	-	-	-
Special revenue	6,517,741,346	5,813,925,043	-	6,507,057,309	10,684,037	-	-
Industrial and miscellaneous	71,341,958,072	68,140,550,670	-	41,332,593,290	30,009,364,782	-	-
Parent, subsidiaries and affiliates	7,133,043,119	7,023,370,215	-	1,074,523,550	6,058,519,569	-	-
Preferred stocks	786,017,714	767,807,089	35,764,970	-	750,252,744	-	-
Common stock - subsidiaries and affiliates ⁽¹⁾	453,804,715	453,804,715	344,139,041	-	109,665,674	-	-
Common stock - unaffiliated	1,211,698,249	1,211,698,249	901,122,199	-	310,576,050	-	-
Mortgage loans - commercial	21,300,839,874	20,776,516,041	-	-	21,300,839,874	-	-
Mortgage loans - residential	1,760,314,846	1,803,330,578	-	-	1,760,314,846	-	-
Cash, cash equivalents and short-term investments	3,579,565,622	3,579,565,622	218,304,101	3,361,261,521	-	-	-
Derivatives:							
Interest rate swaps	8,269,196,318	7,684,332,071	-	8,269,196,318	-	-	-
Options	744,440,948	744,440,948	-	744,440,948	-	-	-
Currency swaps	386,671,874	386,671,874	-	385,416,622	1,255,252	-	-
Forward contracts	22,365,809	13,178,525	-	22,365,809	-	-	-
Credit default swaps	35,727,719	28,657,163	-	35,727,719	-	-	-
Separate account assets	69,162,281,558	69,162,281,558	46,005,788,808	22,446,976,398	709,516,352	-	-
Financial liabilities:							
Repurchase agreements	4,203,824,405	4,203,824,405	-	4,203,824,405	-	-	-
Commercial paper	249,867,743	249,867,743	-	249,867,743	-	-	-
Guaranteed investment contracts	8,549,379,509	8,834,233,416	-	-	8,549,379,509	-	-
Group annuity contracts and other deposits	18,505,272,005	18,132,442,262	-	-	18,505,272,005	-	-
Individual annuity contracts	8,009,431,860	6,570,314,507	-	-	8,009,431,860	-	-
Supplementary contracts	1,167,981,644	1,166,805,456	-	-	1,167,981,644	-	-
Derivatives:							
Interest rate swaps	5,373,255,255	5,315,004,107	-	5,373,061,449	193,806	-	-
Options	6,319,708	6,319,708	-	6,319,708	-	-	-
Currency swaps	568,599,954	568,599,954	-	560,167,926	8,432,028	-	-
Forward contracts	88,806,435	88,671,592	-	88,806,435	-	-	-
Credit default swaps	414,480	663,996	-	414,480	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had statutory carrying values of \$13,969,762,575.

- d. As of September 30, 2018 and December 31, 2017, the Company had no investments where it was not practicable to estimate fair value.

Note 21 – Other Items

- a. Unusual or infrequent items - No change
- b. Troubled debt restructuring - No change
- c. Other disclosures and unusual items:

Common stocks of unconsolidated subsidiaries, primarily MMHLLC and MMI, are accounted for using the statutory equity method. The Company accounts for the value of MMHLLC and MMI at its underlying U.S. generally accepted accounting principles (GAAP) equity value adjusted to remove certain nonadmitted and intangible assets. MMHLLC's value is also adjusted by a portion of its noncontrolling interests (NCI) and appropriated retained earnings, after consideration of MMHLLC's fair value and the Company's capital levels. The Division has affirmed the statutory recognition of the Company's application of the NCI guidelines in MMHLLC's statutory carrying value. However, the Company has limited this recognition to \$2,568,965,398 as of September 30, 2018 and \$2,703,014,763 as of December 31, 2017. Operating results, less dividends declared, for MMHLLC are reflected as net unrealized capital gains (losses) in the Statutory Statements of Changes in Surplus. Dividends declared from MMHLLC are recorded in net investment income when declared and are limited to MMHLLC's U.S. GAAP retained earnings. The cost basis of common stocks – subsidiaries and affiliates is adjusted for impairments deemed to be other than temporary.

The Company evaluated the accounting for payout annuities and determined that the contracts did not contain significant mortality risk, and therefore, should have been classified as a deposit-type contract rather than policyholder reserves. As a result, approximately \$1,329,188,916 classified of policyholders' reserves as of December 31, 2017 were classified as liabilities for deposit-type contracts in 2018. Additionally, the related impacts within the Company's Statements of Operations and the Statements of Cash Flows reflect this classification. There were no corresponding differences in valuation, and as a result, there were no impacts to surplus or net income.

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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 2017 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.

Investment and interest rate risks

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

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

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

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

Currency exchange risk

The Company has currency risk due to its non-U.S. dollar investments and medium-term notes along with its indirect international operations. The Company mitigates 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:	September 30, 2018			Nine Months Ended September 30, 2018
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 229,877,520	\$ 265,689,107	\$ 313,163,156	\$ 739,183
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	16,851,674	19,108,478	22,088,363	69,490
f. Other assets	-	-	-	-
g. Total	<u>\$ 246,729,194</u>	<u>\$ 284,797,585</u>	<u>\$ 335,251,519</u>	<u>\$ 808,673</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, 2017			Year Ended December 31, 2017
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 269,619,940	\$ 298,759,915	\$ 362,060,389	\$ 48,142
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	19,891,348	21,721,100	25,686,913	14,692
f. Other assets	-	-	-	-
g. Total	<u>\$ 289,511,288</u>	<u>\$ 320,481,015</u>	<u>\$ 387,747,302</u>	<u>\$ 62,834</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 November 12, 2018, the date the financial statements were available to be issued.

On October 18, 2018, MassMutual announced a strategic transaction in which Invesco Ltd. (Invesco), a global asset manager, will acquire MassMutual's retail asset management affiliate, OppenheimerFunds, Inc (OFI). In turn, MassMutual is expected to receive an approximate 15.5% common equity interest in the combined company, becoming Invesco's largest shareholder. Under the terms of the agreement, MassMutual and OFI employee shareholders will receive 81.9 million shares of Invesco common equity and \$4,000,000,000 in preferred shares with a fixed dividend rate of 5.9%. As part of this transaction, Invesco and MassMutual will enter into a shareholder agreement in which MassMutual will have customary minority shareholder rights, including appointment of a director to Invesco's board of directors. Pending regulatory and other customary approvals, the transaction is expected to close in the second quarter of 2019.

No other 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 2018 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

NOTES TO FINANCIAL STATEMENTS

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 [X]
- 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 [X]
- 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 [X] 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 [X]
- 3.3 If the response to 3.2 is yes, provide a brief description of those changes.
- 3.4 Is the reporting entity publicly traded or a member of a publicly traded group? Yes [] No [X]
- 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 [X]
- 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 [X] 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 [X]
- 6.6 Have all of the recommendations within the latest financial examination report been complied with? Yes [X] 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 [X]
- 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 [X]
- 8.2 If response to 8.1 is yes, please identify the name of the bank holding company.
- 8.3 Is the company affiliated with one or more banks, thrifts or securities firms? Yes [X] No []
- 8.4 If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC) and the Securities Exchange Commission (SEC)] and identify the affiliate's primary federal regulator.

1 Affiliate Name	2 Location (City, State)	3 FRB	4 OCC	5 FDIC	6 SEC
Baring International Investment Limited	London, UK				YES
Barings Global Advisers Limited	London, UK				YES
Barings Securities, LLC	Boston, MA				YES
HarbourView Asset Management Corporation	New York, NY				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
OC Private Capital, LLC	New York, NY				YES
OFI Advisors, Inc.	New York, NY				YES
OFI Global Asset Management, Inc.	New York, NY				YES
OFI Global Institutional, Inc.	New York, NY				YES
OFI Private Investments, Inc.	New York, NY				YES
OFI SteelPath, Inc.	Dallas, TX				YES
OppenheimerFunds Distributor, Inc.	New York, NY				YES
OppenheimerFunds Inc.	New York, NY				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 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
- 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
- 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 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 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: \$1,731,734,645
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 No
- 14.2 If yes, please complete the following:
- | | 1
Prior Year-End
Book/Adjusted
Carrying Value | 2
Current Quarter
Book/Adjusted
Carrying Value |
|---|--|---|
| 14.21 Bonds | \$ 7,024,093,120 | \$ 6,593,181,118 |
| 14.22 Preferred Stock | \$ | \$ |
| 14.23 Common Stock | \$ 14,002,443,719 | \$ 12,883,225,302 |
| 14.24 Short-Term Investments | \$ | \$ |
| 14.25 Mortgage Loans on Real Estate | \$ | \$ |
| 14.26 All Other | \$ 4,536,580,572 | \$ 4,667,226,451 |
| 14.27 Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26) | \$ 25,563,117,411 | \$ 24,143,632,871 |
| 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 No
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? Yes No
 If no, attach a description with this statement.

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company
GENERAL INTERROGATORIES

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. \$

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

- 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	OFI Institutional Asset Management, Inc.		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 09/30/2018, 32 issues for 23 issuers did not meet the filing requirements of the Purposes and Procedures Manual. The majority of these issues currently lack one or more of the following: Valid cusip/PPN, audited financials and/or executed legal documentation. Exceptions totaled \$185,302,981 or 0.17% of all assets.

19. By self-designating 5*GI securities, the reporting entity is certifying the following elements for each self-designated 5*GI security:
- a. Documentation necessary to permit a full credit analysis of the security does not exist.
- b. Issuer or obligor is current on all contracted interest and principal payments.
- c. The insurer has an actual expectation of ultimate payment of all contracted interest and principal.
- Has the reporting entity self-designated 5*GI securities? Yes [X] No []

GENERAL INTERROGATORIES

PART 2 - LIFE & HEALTH

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	\$ 1,424,155,278
1.13	Commercial Mortgages	\$ 21,903,911,524
1.14	Total Mortgages in Good Standing	\$ 23,328,066,802
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)	\$ 23,328,066,802
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	58.824 %
2.2	A&H cost containment percent	1.000 %
2.3	A&H expense percent excluding cost containment expenses	39.329 %
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 []

STATEMENT AS OF SEPTEMBER 30, 2018 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
61492	44-0188050	09/01/2018	Athene Annuity & Life Assur. Co. (TH18)	DE	ACO/I	Authorized		
66346	58-0828824	07/07/2018	Munich American Reassurance (MUT0)	GA	CO/I	Authorized		
66346	58-0828824	07/07/2018	Munich American Reassurance (MUT5)	GA	CO/I	Authorized		
66346	58-0828824	07/07/2018	Munich American Reassurance (MUT7)	GA	CO/I	Authorized		
66346	58-0828824	07/07/2018	Munich American Reassurance (MUT8)	GA	CO/I	Authorized		
66346	58-0828824	07/07/2018	Munich American Reassurance (MUT9)	GA	CO/I	Authorized		
66346	58-0828824	04/15/2017	Munich American Reassurance (MUJ1)	GA	CO/I	Authorized		
66346	58-0828824	04/15/2017	Munich American Reassurance (MUJ6)	GA	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRT3)	AR	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRT4)	AR	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRT6)	AR	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRT7)	AR	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRT8)	AR	CO/I	Authorized		
74900	63-0483783	07/07/2018	Partner Re (PRTB)	AR	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT0)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT3)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT4)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT5)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT6)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT7)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT8)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GAT9)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GATB)	MO	CO/I	Authorized		
93572	43-1235868	07/07/2018	RGA Reinsurance Co. (GATR)	MO	CO/I	Authorized		
97071	13-3126819	07/01/2018	SCOR Global Life USA Reins Co (SU20)	DE	COFI/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT0)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT3)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT4)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT5)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT6)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT7)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT8)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUT9)	DE	CO/I	Authorized		
97071	13-3126819	07/07/2018	SCOR Global Life USA Reins Co (SUTB)	DE	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT0)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT3)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT4)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT5)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT6)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT7)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT8)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRT9)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRTB)	MO	CO/I	Authorized		
82627	06-0839705	07/07/2018	Swiss Re Life & Health America (SRTR)	MO	CO/I	Authorized		
82627	06-0839705	04/15/2017	Swiss Re Life & Health America (SRU1)	MO	CO/I	Authorized		
82627	06-0839705	04/15/2017	Swiss Re Life & Health America (SRU6)	MO	CO/I	Authorized		

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

States, Etc.	1	Life Contracts		Direct Business Only			7	
		2	3	4	5	6		
	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	31,292,664	20,023,502	4,976,812	16,978,275	73,271,253	58,575,506
2. Alaska	AK	L	1,469,717	2,386,294	246,746	3,394,608	7,497,365	332,278
3. Arizona	AZ	L	41,953,895	66,207,685	7,803,897	16,699,382	132,664,859	34,210,133
4. Arkansas	AR	L	36,200,068	13,229,536	1,716,473	1,232,126	52,378,203	5,116,582
5. California	CA	L	466,386,046	446,514,590	45,513,816	521,874,205	1,480,288,657	315,976,330
6. Colorado	CO	L	72,907,263	37,546,730	8,046,738	7,084,157	125,584,888	30,293,714
7. Connecticut	CT	L	130,097,723	76,812,583	15,094,868	147,912,273	369,917,447	30,647,398
8. Delaware	DE	L	102,127,821	97,052,999	1,255,467	88,330,573	288,766,860	518,318,479
9. District of Columbia	DC	L	13,973,986	1,924,412	2,938,686	25,241,353	44,078,437	5,099,349
10. Florida	FL	L	304,292,325	224,477,537	23,871,661	421,234,091	973,875,614	196,129,836
11. Georgia	GA	L	175,062,604	97,838,905	17,393,973	122,897,693	413,193,175	35,517,333
12. Hawaii	HI	L	15,236,602	16,419,706	2,297,384	7,453,499	41,407,191	11,391,639
13. Idaho	ID	L	17,272,290	7,500,968	1,070,177	8,973,866	34,817,301	8,293,110
14. Illinois	IL	L	167,010,079	149,021,073	18,779,331	369,232,176	704,042,659	45,369,739
15. Indiana	IN	L	71,298,758	62,769,452	7,121,029	36,624,081	177,813,320	31,940,513
16. Iowa	IA	L	33,642,646	12,875,851	2,914,124	20,346,891	69,779,512	42,693,400
17. Kansas	KS	L	30,232,264	10,984,624	4,184,898	40,531,669	85,933,455	8,194,937
18. Kentucky	KY	L	20,035,861	75,814,278	3,896,660	15,957,402	115,704,201	37,527,294
19. Louisiana	LA	L	88,866,284	24,109,322	4,544,671	19,056,466	136,576,743	28,468,978
20. Maine	ME	L	17,436,534	17,914,046	1,903,303	25,578,593	62,832,476	4,837,785
21. Maryland	MD	L	99,326,589	39,748,334	20,936,691	98,429,495	258,441,109	44,019,901
22. Massachusetts	MA	L	148,747,566	362,102,147	24,788,258	884,851,630	1,420,489,601	49,640,755
23. Michigan	MI	L	80,970,404	200,351,435	10,524,294	181,141,363	472,987,496	54,020,594
24. Minnesota	MN	L	43,557,174	51,085,832	7,091,386	258,563,056	360,297,448	173,905,844
25. Mississippi	MS	L	55,165,054	25,332,053	7,785,014	578,437	88,860,558	10,372,808
26. Missouri	MO	L	49,991,551	57,868,123	8,213,851	87,761,258	203,834,783	27,016,820
27. Montana	MT	L	8,612,774	3,691,009	971,123	4,444,756	17,719,662	6,868,258
28. Nebraska	NE	L	28,716,273	12,323,022	4,320,629	160,811,952	206,171,876	8,950,648
29. Nevada	NV	L	22,434,089	21,609,049	2,508,602	53,919,638	100,471,378	8,517,519
30. New Hampshire	NH	L	22,479,753	38,318,435	3,402,811	593,647,032	657,848,031	14,274,059
31. New Jersey	NJ	L	297,312,207	163,692,461	29,967,971	281,693,758	772,666,397	125,821,989
32. New Mexico	NM	L	14,815,655	14,944,934	1,694,921	2,498,793	33,954,303	8,170,552
33. New York	NY	L	848,348,507	507,654,914	63,686,524	658,563,200	2,078,253,145	268,186,152
34. North Carolina	NC	L	116,749,151	91,182,677	22,851,235	93,693,183	324,476,246	76,555,969
35. North Dakota	ND	L	10,213,434	5,760,267	464,794	13,760,290	30,198,785	20,784,531
36. Ohio	OH	L	92,905,352	137,570,441	12,418,205	149,917,492	392,811,490	55,748,842
37. Oklahoma	OK	L	79,853,052	16,210,106	5,747,667	61,947,229	163,758,054	20,874,468
38. Oregon	OR	L	21,925,964	33,983,646	3,614,416	28,817,155	88,341,181	24,355,676
39. Pennsylvania	PA	L	204,340,203	179,636,763	29,804,803	268,349,982	682,131,751	19,062,285
40. Rhode Island	RI	L	19,653,667	25,608,170	2,407,865	30,403,427	78,073,129	7,269,649
41. South Carolina	SC	L	54,215,628	37,163,128	11,145,105	22,248,245	124,772,106	65,347,912
42. South Dakota	SD	L	6,425,376	2,797,410	484,971	835,237	10,542,994	2,720,610
43. Tennessee	TN	L	69,695,584	60,264,358	13,638,951	134,614,589	278,213,482	24,298,108
44. Texas	TX	L	282,662,480	167,310,286	35,562,241	147,675,017	633,210,024	186,245,047
45. Utah	UT	L	30,778,251	22,253,321	3,055,094	12,622,749	68,709,415	39,320,139
46. Vermont	VT	L	16,232,441	9,451,833	1,062,464	7,664,907	34,411,645	1,606,589
47. Virginia	VA	L	141,257,108	96,219,730	22,578,133	210,695,131	470,750,102	52,232,287
48. Washington	WA	L	50,817,030	44,559,918	8,150,553	46,432,378	149,959,879	11,168,135
49. West Virginia	WV	L	12,085,348	10,591,508	1,110,182	10,544,334	34,331,372	26,979,767
50. Wisconsin	WI	L	35,602,116	69,641,563	4,675,896	52,802,835	162,722,410	6,592,789
51. Wyoming	WY	L	4,729,844	11,341,351	451,889	310,284	16,833,368	2,353,782
52. American Samoa	AS	N						
53. Guam	GU	N	1,125	1,000	7,335		9,460	44,442
54. Puerto Rico	PR	L	54,445,930	7,787,619	6,882,504	19,821,267	88,937,320	82,131
55. U.S. Virgin Islands	VI	N	7,583	212,792	10,290	65	230,730	25,880
56. Northern Mariana Islands	MP	N						
57. Canada	CAN	N	774,556	219,291	96,411	1,130	1,091,388	37,566
58. Aggregate Other Aliens	OT	XXX	12,418,460	1,473,173	432,865	91,377,000	105,701,498	
59. Subtotal	XXX		4,875,062,709	3,991,386,192	548,116,658	6,588,071,673	16,002,637,232	2,892,406,836
90. Reporting entity contributions for employee benefits plans	XXX							
91. Dividends or refunds applied to purchase paid-up additions and annuities	XXX		914,409,433	1,468,091			915,877,524	
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		19,414,089		8,957,911		28,372,000	
94. Aggregate or other amounts not allocable by State	XXX							
95. Totals (Direct Business)	XXX		5,808,886,231	3,992,854,283	557,074,569	6,588,071,673	16,946,886,756	2,892,406,836
96. Plus Reinsurance Assumed	XXX		39,004,614	15,932,440		968,833,651	1,023,770,705	1,190,078,278
97. Totals (All Business)	XXX		5,847,890,845	4,008,786,723	557,074,569	7,556,905,324	17,970,657,461	4,082,485,114
98. Less Reinsurance Ceded	XXX		708,864,919	73,245,796	(27,422,931)		754,687,784	
99. Totals (All Business) less Reinsurance Ceded	XXX		5,139,025,926	3,935,540,927	584,497,500	7,556,905,324	17,215,969,677	4,082,485,114
DETAILS OF WRITE-INS								
58001. HKG Hong Kong	XXX		214,830				214,830	
58002. ZZZ Other Alien	XXX		12,203,630	1,473,173	432,865	91,377,000	105,486,668	
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		12,418,460	1,473,173	432,865	91,377,000	105,701,498	
9401.	XXX							
9402.	XXX							
9403.	XXX							
9498. Summary of remaining write-ins for Line 94 from overflow page	XXX							
9499. Totals (Lines 9401 through 9403 plus 9498)(Line 94 above)	XXX							

(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, LLC	06-1041383		Delaware
CML Mezzanine Investor L, LLC	06-1041383		Delaware
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		Delaware
MML Mezzanine Investor L, LLC	04-1590850		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
Timberland Forest Holding LLC	47-5322979		Delaware
Lyme Adirondack Forest Company, LLC	None		Delaware
Lyme Adirondack Timber Sales, Inc.	20-5305426		New York
Lyme Adirondack Timberlands I, LLC	None		Delaware
Lyme Adirondack Timberlands II, LLC	None		Delaware
WP-SC, LLC*	26-4441097		Delaware
MSP-SC, LLC	04-1590850		Delaware
Country Club Office Plaza LLC*	27-1435692		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
Jefferies Finance LLC	27-0105644		Delaware
Apex Credit Partners LLC	None		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Revolver Fund, L.P.	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

*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 High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO Holdings LLC	None		Delaware
JFIN CLO 2007 Ltd.	None		Cayman Islands
JFIN CLO 2012 Ltd.	None		Cayman Islands
JFIN CLO 2013 Ltd.	None		Cayman Islands
JFIN CLO 2014 Ltd.	None		Cayman Islands
JFIN CLO 2014-II Ltd.	None		Cayman Islands
JFIN MM CLO 2014 Ltd.*	None		Cayman Islands
JFIN CLO 2015 Ltd.*	None		Cayman Islands
Apex Credit CLO 2015-II Ltd.*	None		Cayman Islands
JFIN Revolver CLO 2014 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
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
Apex Credit CLO 2018-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 Mezzanine Investor, LLC	04-1590850		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 2009-A	27-1379258		Delaware
MMAF Equipment Finance LLC 2011-A	45-2589019		Delaware
MML Private Placement Investment Company I, LLC	04-1590850		Delaware
MML Private Equity Fund Investor LLC	04-1590850		Delaware
MM Private Equity Intercontinental LLC	04-1590850		Delaware
Pioneers Gate LLC	45-2738137		Delaware
MassMutual Holding LLC	04-2854319		Delaware
Fern Street LLC	37-1732913		Delaware
First Mercantile Trust Company	62-0951563		Tennessee
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina

*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>
MassMutual Capital Partners LLC	04-1590850		Delaware
MassMutual Ventures Holding LLC	None		Delaware
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
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
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 Advisers GmbH	98-1194368		Germany
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

*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>
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
MassMutual Baring Holding LLC	04-1590850		Delaware
MassMutual Holdings (Bermuda) Limited	None		Bermuda
Agspring Holdco, LLC	None		Delaware
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
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
Solar Acquisition Holding, 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
BAI GP, LLC	None		Delaware

*This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Alternative Investments SLP, LLC	None		Delaware
Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware
Barings Global Equity Fund	46-1197222		Delaware
Barings Global Investment Funds (U.S.) Management LLC	04-1590850		Delaware
Babson Global Loan Feeder Management, LLC	None		Delaware
Baring North America LLC	98-0241935		Massachusetts
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
BREBF I GP LLC	None		Delaware
BRECS VII GP LLC	None		Delaware
CCM Fund I REIT Manager LLC	None		Delaware
CCM Venture I GP LLC	None		Delaware
CCM Venture I REIT Manager LLC	None		Delaware
CEMF I GP LLC	None		Delaware
CHY Venture 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 LLC	90-0666326		Delaware
Mezzco Australia II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware
Oppenheimer Acquisition Corp.	84-1149206		Delaware
OppenheimerFunds, Inc.	13-2527171		Colorado
OppenheimerFunds Distributor, Inc.	13-2953455		New York
Oppenheimer Real Asset Management, Inc.	84-1106295		Delaware
OFI Global Institutional, Inc.	13-4160541		New York

*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>
HarbourView Asset Management Corporation	22-2697140		New York
OC Private Capital, LLC	None		Delaware
OFI Global Trust Company	13-3459790		New York
OFI International, Ltd.	None		United Kingdom
SNW Asset Management Corporation	None		Delaware
Seattle Northwest Asset Management LLC	None		Washington
Trinity Investment Management Corporation	25-1951632		Pennsylvania
OFI SteelPath, Inc.	84-1128397		Delaware
Shareholder Services, Inc.	84-1066811		Colorado
OFI Advisors, LLC	None		Delaware
Index Management Solutions, LLC	None		Pennsylvania
OFI Global Asset Management, Inc.	84-0765063		Delaware
OFI Private Investments Inc.	91-2036414		New York
Tremont Group Holdings, LLC	62-1210532		New York
Tremont Partners, LLC	06-1121864		Connecticut
Tremont GP, LLC	20-8215352		Delaware
Settlement Agent, LLC	90-0874510		Delaware
Tremont (Bermuda) Limited	None		Bermuda
MassMutual International LLC	04-3313782		Delaware
MassMutual Asia Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Asia Investors Ltd.	None		Hong Kong, Special Administrative Region of China
MassMutual Guardian Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Insurance Consultants Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Services Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Trustees Limited	None		Hong Kong, Special Administrative Region of China
Protective Capital (International) Limited	98-0610331		Hong Kong, Special Administrative Region of China
MassMutual Life Insurance Company	None		Japan
MassMutual Internacional (Chile) SpA	98-1033127		Chile
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
Cornerstone Global REIT Corporation	20-8730751		Delaware
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

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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>
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
Barings Global Special Situations Credit Fund 1	None		Ireland
Babson Capital Global Special Situation Credit Fund 2*	98-1206017		Delaware
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2014-II	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
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 Euro Equity Income Fund	None		Hong Kong
Baring Focused EAFE Equity Fund	11-3789446		Delaware
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
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 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
Cornerstone Core Mortgage Venture I LP	27-1701622		Delaware
Cornerstone Enhanced Mortgage Fund I LP	45-3751572		Delaware
Cornerstone Global Real Estate LP*	20-8730751		Delaware
Cornerstone High Yield Venture LP	36-4770946		Delaware
Barings/LAZ Parking Fund LP	46-5437441		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>
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 I LP	80-0691253		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Gillem GA Industrial LLC	04-1590850		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
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
Tower Square Capital Partners IV-A, L.P.	80-0920367		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 Emerging Markets Local Currency Debt Fund	47-3774453		Massachusetts
Barings Global High Yield Fund	47-3790192		Massachusetts
Baring Greater China Equity Fund	None		Hong Kong

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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 Total Return Bond Fund	47-3734770		Massachusetts
Barings U.S. High Yield Fund	47-3801860		Massachusetts
Great Lakes II LLC*	71-1018134		Delaware
Somerset Special Opportunities Master Fund LP	None		Cayman Islands
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
Cornbrook 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
Johnston Groves LLC	20-4819358		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
NoHo West Venture LLC	83-0881588		Delaware
PACO France Logistics LLC	04-1590850		Delaware
PACO France Logistics 3 LLC	04-1590850		Delaware
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
Waterford Development Associates	20-2970495		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>
Waterloo London Holdings LLC	47-1993493		Delaware
WeHo Domain LLC*	46-3122029		Delaware
Willowood Lakeside Master LLC	81-1552222		Delaware
Ygnatio Valley Funding	20-5481477		Delaware
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
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

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SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP

PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual RetireSMART Conservative Fund	45-1618155		Massachusetts
MassMutual RetireSMART Growth Fund	45-1618222		Massachusetts
MassMutual RetireSMART Moderate Fund	45-1618262		Massachusetts
MassMutual RetireSMART Moderate Growth Fund	45-1618046		Massachusetts
Oppenheimer Funds:			
OFI Pictet Global Environmental Solution Fund	81-5311583		Delaware
Oppenheimer Developing Markets Fund	93-6305075		Delaware
Oppenheimer Developing Markets Equity UCITS	None		Ireland
Oppenheimer Emerging Markets Innovators UCITS	None		Ireland
Oppenheimer Emerging Markets Local Debt UCITS	3440740DH		Ireland
Oppenheimer Emerging Markets Revenue ETF	46-2984739		Delaware
Oppenheimer Emerging Markets Ultra Dividend Revenue ETF	82-2237734		Delaware
Oppenheimer ESG Revenue ETF	81-3492794		Delaware
Oppenheimer Global ESG Revenue ETF	81-3480754		Delaware
Oppenheimer Global Equity UCITS	None		Ireland
Oppenheimer Global Multi-Asset Growth Fund	47-3676235		Delaware
Oppenheimer Global Real Estate Fund	46-1604428		Delaware
Oppenheimer Global Revenue ETF	81-5010075		Delaware
Oppenheimer Global Value Equity UCITS	None		Ireland
Oppenheimer Global Unconstrained Bond Fund	82-2693880		Delaware
Oppenheimer International Revenue ETF	81-4969331		Delaware
Oppenheimer International Ultra Dividend Revenue ETF	82-2271542		Delaware
Oppenheimer Preferred Securities & Income Fund	82-3462739		Delaware
Oppenheimer Russell 2000 Dynamic Multifactor ETF	82-2794856		Delaware
Oppenheimer Russell 1000 Momentum Factor ETF	82-2716323		Delaware
Oppenheimer Russell 1000 Value Factor ETF	82-2759921		Delaware
Oppenheimer Russell 1000 Low Volatility Factor ETF	82-2701797		Delaware
Oppenheimer Russell 1000 Size Factor ETF	82-2740997		Delaware
Oppenheimer Russell 1000 Quality Factor ETF	82-2732571		Delaware
Oppenheimer Russell 1000 Yield Factor ETF	82-2768498		Delaware
Oppenheimer SteelPath MLP & Energy Infrastructure Fund	82-2222426		Delaware

*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.

STATEMENT AS OF SEPTEMBER 30, 2018 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)	*
.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	CM Life Ins Co	93432	06-1041383				C.M. Life Insurance Company	CT	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	MML Baystate Life Ins Co	70416	43-0581430				MML Bay State Life Insurance Company	CT	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor L, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Mezzanine Investor III, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1041383				CML Special Situations Investor LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Mezzanine Investor L, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MML Special Situations Investor LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	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			26-4441097				WP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	81.400	MMLIC		
.0000			26-4441097				WP-SC, LLC	DE	DS	C.M. Life Insurance Company	Ownership	18.600	MMLIC		
.0000			04-1590850				MSP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-1435692				Country Club Office Plaza LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	88.100	MMLIC		
.0000			27-1435692				Country Club Office Plaza LLC	DE	DS	C.M. Life Insurance Company	Ownership	11.900	MMLIC		
.0000							EM Opportunities LLC	DE	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		

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domi-ciliary Location	Relation-ship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Re-quired? (Y/N)	*
.0000							Jefferies Finance Europe, SCSp	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Business Credit LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Business Credit Fund I LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2007 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2012 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2013 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	70.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	30.000	MMLIC		
.0000							JFIN CLO 2014-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.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							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							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							Apex Credit CLO 2018-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	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			04-1590850				MML Mezzanine Investor, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3238013				MML Strategic Distributors, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1563535	2881445			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	Company	Ownership	99.600	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	DE	DS	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			27-1379258				MMAF Equipment Finance LLC 2009-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			45-2589019				MMAF Equipment Finance LLC 2011-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Private Placement Investment Company I, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				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	MML Private Equity Fund Investor LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2018 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			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		
.0000			37-1732913				Fern Street LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			62-0951563	1160004			First Mercantile Trust Company	TN	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			46-2252944				Haven Life Insurance Agency, LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				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							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				MMLSI 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			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	JRL	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I LLC	DE	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							BREA E 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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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			98-0654412				Barings Real Estate Advisers Europe Finance LLP	.GBR	.DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-1194368				Barings Real Estate Advisers GmbH	.DEU	.DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			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			04-1590850				MassMutual Baring Holding LLC	.DE	.DS	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Holdings (Bermuda) Limited	.BMU	.DS	MassMutual Baring Holding LLC	Ownership	100.000	MMLIC		
.0000							Agspring Holdco, LLC	.DE	.NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.400	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	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3055009				Milestone Acquisition Holding, LLC.	.DE	.NIA	Barings LLC	Influence		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			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	66.300	MMLIC		
.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	42.600	MMLIC		
.0000			20-2970495				US Pharmaceutical Holdings II, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							Solar Acquisition Holding, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	20.000	MMLIC		
.0000							Solar Acquisition Holding, 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							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			46-1197222				Barings Global Equity Fund	DE	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							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			98-0241935				Barings North America LLC	MA	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	Massachusetts Mutual Life Insurance Company	Ownership	72.600	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							BREBF I GP LLC	DE	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							CCM Venture I GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CCM Venture 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							CREX X GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							CREX 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		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.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			90-0666326				Mezzco Australia LLC	DE	DS	Barings LLC	Ownership	72.000	MMLIC		
.0000							Mezzco Australia II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							RECSA-NY GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Somerset Special Opportunities Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Oppenheimer Acquisition Corp.	DE	DS	MassMutual Asset Management Holding LLC	Ownership	97.000	MMLIC		
.0000			84-1149206	2897101			OppenheimerFunds, Inc.	CO	DS	Oppenheimer Acquisition Corp.	Ownership	100.000	MMLIC		
.0000			13-2527171	2679183			OppenheimerFunds Distributor, Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			13-2953455				Oppenheimer Real Asset Management, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-1106295				OFI Global Institutional, Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			13-4160541	3458125			HarbourView Asset Management Corporation	NY	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			22-2697140				OC Private Capital, LLC	DE	DS	OFI Institutional Asset Management, Inc.	Ownership	51.000	MMLIC		
.0000			13-3459790	2914875			OFI Global Trust Company	NY	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000							OFI International, Ltd.	GBR	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000							SNW Asset Management Corporation	DE	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			60-2233720				Seattle Northwest Asset Management LLC	WA	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			25-1951632				Trinity Investment Management Corporation	PA	DS	OFI Institutional Asset Management, Inc.	Ownership	100.000	MMLIC		
.0000			84-1128397				OFI SteelPath, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-1066811				Shareholder Services, Inc.	CO	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000							OFI Advisors, LLC	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000							Index Management Solutions, LLC	PA	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			84-0765063				OFI Global Asset Management, Inc.	DE	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			91-2036414				OFI Private Investments Inc.	NY	DS	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
.0000			62-1210532				Tremont Group Holdings, LLC	NY	DS	Oppenheimer Acquisition Corp.	Ownership	100.000	MMLIC		
.0000			06-1121864				Tremont Partners, LLC	CT	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000			20-8215352				Tremont GP, LLC	DE	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000			90-0874510				Settlement Agent, LLC	DE	DS	Tremont GP	Ownership	100.000	MMLIC		
.0000							Tremont (Bermuda) Limited	BMU	DS	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
.0000			04-3313782				MassMutual International LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC	Y	
.0000							MassMutual Asia Limited	HKG	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Asia Investors Ltd.	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Guardian Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Insurance Consultants Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Services Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Trustees Limited	HKG	DS	MassMutual Asia Limited	Ownership	80.000	MMLIC		
.0000			98-0610331				Protective Capital (International) Limited	HKG	DS	MassMutual Asia Limited	Ownership	100.000	MMLIC		
.0000			98-1033127				MassMutual Internacional (Chile) SpA	CHL	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Life Insurance Company	JPN	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000			04-2443240				MML Management Corporation	MA	DS	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		

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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			27-3576835				MassMutual External Benefits Group LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-8730751				Cornerstone Global REIT Corporation	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.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	13.400	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	97.400	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 1	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	79.300	MMLIC		
.0000							Barings Global Special Situations Credit Fund 1	IRL	NIA	Barings LLC	Management		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	23.700	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	C.M. Life Insurance Company	Ownership	1.500	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	79.900	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.700	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	47.400	MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	C.M. Life Insurance Company	Ownership	10.300	MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	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. 2014-II	CYM	NIA	Barings LLC	Influence		MMLIC		4
.0000							Babson CLO Ltd. 2015-I	CYM	NIA	Barings LLC	Influence		MMLIC		5
.0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		6
.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		

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SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.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							Barings Euro Equity Income Fund	.HKG	NIA	Barings Asset Management Limited	Ownership/Influence	93.900	MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	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	90.400	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	.GBR	NIA	C.M. Life Insurance Company	Ownership	9.600	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	.GBR	NIA	Barings LLC	Management		MMLIC		
.0000			11-3789446				Baring Focused EAFE Equity Fund	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	49.600	MMLIC		
.0000			11-3789446				Baring Focused EAFE Equity Fund	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	.CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	95.500	MMLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	.CYM	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000							Barings Global Private Loan Fund	.LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	11.500	MMLIC		
.0000							Barings Global Private Loan Fund	.LUX	NIA	Barings LLC	Management		MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	48.300	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	C.M. Life Insurance Company	Ownership	13.200	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	.DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	.IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	18.900	MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	.IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Middle Market CLO 2017-I Ltd & LLC	.CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	51.400	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	32.800	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			26-4142796				Baring International Small Cap Equity Fund	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	29.400	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	88.200	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	17.000	MMLIC		
.0000							Barings European Core Property Fund SCSp	.LUX	NIA	C.M. Life Insurance Company	Ownership	1.100	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			27-1701622				Cornerstone Core Mortgage Venture I LP	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	50.000	MMLIC		
.0000			27-1701622				Cornerstone Core Mortgage Venture I LP	.DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			45-3751572				Cornerstone Enhanced Mortgage Fund I LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	2.800	MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			45-3751572				Cornerstone Enhanced Mortgage Fund I LP	DE	NIA	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company	Management				
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	92.300	MMLIC		
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.600	MMLIC		
.0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			36-4770946				Cornerstone High Yield Venture LP	DE	NIA	Company	Ownership/Influence	49.700	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	12.000	MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	DE	NIA	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Company	Ownership/Influence	24.800	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC	MA	NIA	Company	Ownership/Influence	98.300	MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC	MA	NIA	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NIA	Company	Ownership/Influence	99.900	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			80-0691253				Gateway Mezzanine Partners I, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	71.600	MMLIC		
.0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NIA	Company	Ownership/Influence	35.100	MMLIC		
.0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Ownership	5.200	MMLIC		
.0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Company	Ownership/Influence	35.700	MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			04-1590850				Gillem GA Industrial LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
.0000			38-4041011				JPMCC Commercial Mortgage Securities Trust 2017-JP7	NY	NIA	Barings LLC	Management		MMLIC		
.0000			38-4032059				JPMDB Commercial Mortgage Securities Trust 2017-C5	NY	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			20-3887968				Kazwell Realty Partners LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
.0000			82-1512591				KKR-MM Vector LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			46-4255307				Marco Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Company	Ownership/Influence	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC Massachusetts Mutual Life Insurance Company	Management		MMLIC		
.0000			20-3887968				Oakley Grove Development LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
.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		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.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	58.500	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	Massachusetts Mutual Life Insurance Company	Ownership/Influence	0.000	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	16.700	MMLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	96.200	MMLIC		
.0000			80-0920367				Tower Square Capital Partners IV-A, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				Tower Square Capital Partners IV-A, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	21.300	MMLIC		
.0000							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			47-374453				Barings Emerging Markets Local Currency Debt Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000							Baring Greater China Equity Fund	HKG	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			47-3734770				Barings Total Return Bond Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			47-3801860				Barings U.S. High Yield Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.200	MMLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	C.M. Life Insurance Company	Ownership	1.000	MMLIC		
.0000							Somerset Special Opportunities Master Fund LP	CYM	NIA	Barings LLC	Management		MMLIC		
.0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	MMLIC		

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.0000			36-4823011				50 Liberty LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.100	MMLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.800	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	49.900	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.900	MMLIC		
.0000			81-4382111				Budapester Strasse LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
.0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund I LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund II LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund III LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.400	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.600	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.700	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Barings LLC	Management		MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.500	MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Baring LLC	Management		MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-1563809				CCB Montford Park LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	75.200	MMLIC		
.0000			82-1563809				CCB Montford Park LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.300	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			46-3880526				Farringdon London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.500	MMLIC		
.0000			46-3880526				Farringdon London Holdings LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.500	MMLIC		
.0000			20-4819358				Johnston Groves LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	57.200	MMLIC		
.0000			81-5360103				Landmark Manchester Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			83-0881588				NoHo West Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			04-1590850				PACO France Logistics LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				PACO France Logistics 3 LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2018 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			82-3393166				Portland 400 Sixth Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence		MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.200	MMLIC		
.0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MMLIC		
.0000			04-1590850				Spain Avalon Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-5273574				Three PW Office Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.200	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			45-4606547				UK LIW Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	1.000	MMLIC		
.0000			45-4606547				UK LIW Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLIC		
.0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-3281588				Via Ceresio Milan LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	92.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			20-2970495				Waterford Development Associates	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			47-1993493				Waterloo London Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	77.400	MMLIC		
.0000			46-3122029				WeHo Domain LLC	DE	NIA	C.M. Life Insurance Company	Ownership	12.600	MMLIC		
.0000			81-1552222				Willowood Lakeside Master LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000			20-5481477				Ygnatio Valley Funding	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			45-3168892				MassMutual Barings Dynamic Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			51-0529328		0000927972	0Q	MassMutual Premier Main Street Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	14.800	MMLIC		
.0000			26-3229251		0000927972	0Q	MassMutual Premier Strategic Emerging Markets Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.300	MMLIC		
.0000			04-3277550		0000927972	0Q	MassMutual Premier Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			14-1980900		0000916053	0Q	MassMutual Select Diversified International Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			01-0821120		0000916053	0Q	MassMutual Select Diversified Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.300	MMLIC		
.0000			04-3512593		0000916053	0Q	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			04-3513019		0000916053	0Q	MassMutual Select Large Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			42-1710935		0000916053	0Q	MassMutual Select Mid-Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	27.800	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2018 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			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	12.400	MMLIC		
.0000			82-3347422		0000916053	Q0	MassMutual Select T. Rowe Price Retirement 2005 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	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	2.800	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	95.000	MMLIC		
.0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.600	MMLIC		
.0000			27-1933828		0000916053	Q0	MassMutual RetireSMART 2015 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-1933389		0000916053	Q0	MassMutual RetireSMART 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	78.600	MMLIC		
.0000			27-1932769		0000916053	Q0	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	70.700	MMLIC		
.0000			46-3289207		0000916053	Q0	MassMutual RetireSMART 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	19.600	MMLIC		
.0000			47-5326235		0000916053	Q0	MassMutual RetireSMART 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.900	MMLIC		
.0000			45-1618155		0000916053	Q0	MassMutual RetireSMART Conservative Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			45-1618222		0000916053	Q0	MassMutual RetireSMART Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2018 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			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		
.0000			81-5311583				OFI Pictet Global Environmental Solution Fund	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			93-6305075				Oppenheimer Developing Markets Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000							Oppenheimer Developing Markets Equity UCITS	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership	77.100	MMLIC		
.0000							Oppenheimer Developing Markets Equity UCITS	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000							Oppenheimer Emerging Markets Innovators UCITS	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000							Oppenheimer Emerging Markets Local Debt UCITS	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			34-40740DH				Oppenheimer Emerging Markets Revenue ETF	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			46-2984739				Oppenheimer Emerging Markets Ultra Dividend Revenue ETF	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2237734				Oppenheimer ESG Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			81-3492794				Oppenheimer Global Equity UCITS	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			81-3480754				Oppenheimer Global ESG Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			46-1604428		0001562689	OQ	Oppenheimer Global Real Estate Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		
.0000			47-3676235				Oppenheimer Global Multi-Asset Growth Fund	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			81-5010075				Oppenheimer Global Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000							Oppenheimer Global Value Equity UCITS	IRL	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2693880				Oppenheimer Global Unconstrained Bond Fund	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			81-4969331				Oppenheimer International Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000							Oppenheimer International Ultra Dividend Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2271542				Oppenheimer Preferred Securities & Income Fund	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-3462739				Oppenheimer Russell 2000 Dynamic Multifactor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2794856				Oppenheimer Russell 1000 Momentum Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2716323				Oppenheimer Russell 1000 Value Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2759921				Oppenheimer Russell 1000 Low Volatility Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2701797				Oppenheimer Russell 1000 Size Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2740997				Oppenheimer Russell 1000 Quality Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2732571				Oppenheimer Russell 1000 Yield Factor ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
.0000			82-2768498				Oppenheimer SteelPath MLP & Energy Infrastructure Fund	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns .85% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own 6.7% 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 7.7% and includes only Great Lakes III, L.P.

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company

Asterisk	Explanation
5	Debt investors own 5.9% and includes only Great Lakes III, L.P.
6	Debt investors own 7.5% 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.

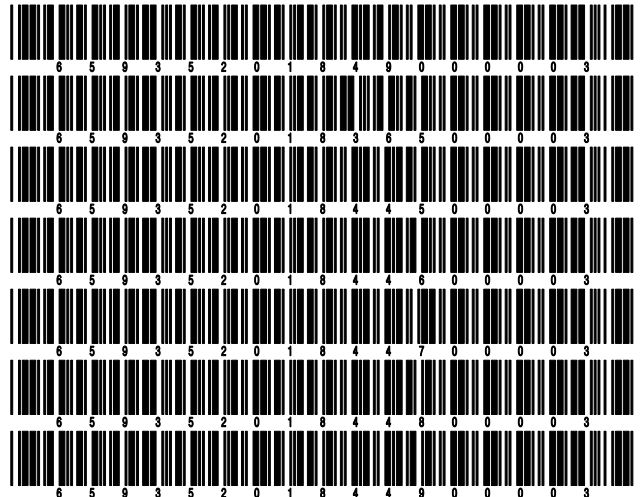
	Response
1. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	NO
2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement?	NO
3. Will the Reasonableness of Assumptions Certification required 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

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

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]



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. Investment in trust	29,508,626		29,508,626	31,602,010
2505. Pension plan asset	597,686,174	597,686,174		
2506. Disallowed interest maintenance reserve	370,226,335	370,226,335		
2507. Cash advances to agents	230,335,417	230,335,417		
2508. Intangible assets	95,116,159	95,116,159		
2509. Commissions and expenses on long-term lease	52,561,896	52,561,896		
2510. Bills receivable	148,506	148,506		
2597. Summary of remaining write-ins for Line 25 from overflow page	1,375,583,113	1,346,074,487	29,508,626	31,602,010

Additional Write-ins for Liabilities Line 25

	1 Current Statement Date	2 December 31 Prior Year
2504. Funds awaiting escheat and other miscellaneous	59,792,012	70,738,008
2505. Deferred income	15,270,670	15,798,281
2597. Summary of remaining write-ins for Line 25 from overflow page	75,062,682	86,536,289

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. Change in corporate owned life insurance	35,208,132	110,585,573	138,163,589
08.305. Miscellaneous	10,921,205	10,916,956	15,237,773
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	46,129,337	121,502,529	153,401,362

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	149,546,059		
2705. Change in Liability for employee/agent benefit plans	25,330,567	34,733,778	46,800,148
2706. Miscellaneous charges to operations	15,267,840	7,044,159	9,219,616
2707.			
2797. Summary of remaining write-ins for Line 27 from overflow page	190,144,466	41,777,937	56,019,764

STATEMENT AS OF SEPTEMBER 30, 2018 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	857,001,296	976,679,957
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	57,671,139	49,163,425
2.2 Additional investment made after acquisition	104,018,432	299,407,254
3. Current year change in encumbrances	(84,986,335)	(81,317,801)
4. Total gain (loss) on disposals	170,141,914	83,790,128
5. Deduct amounts received on disposals	275,807,609	353,509,405
6. Total foreign exchange change in book/adjusted carrying value		
7. Deduct current year's other than temporary impairment recognized	2,208,173	15,690,573
8. Deduct current year's depreciation	61,051,365	101,521,690
9. Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8)	764,779,299	857,001,296
10. Deduct total nonadmitted amounts		
11. Statement value at end of current period (Line 9 minus Line 10)	764,779,299	857,001,296

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	22,579,846,619	20,963,341,565
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	2,640,421,865	4,380,407,680
2.2 Additional investment made after acquisition	353,461,254	162,970,943
3. Capitalized deferred interest and other	27,700,969	27,706,382
4. Accrual of discount	4,509,297	2,522,733
5. Unrealized valuation increase (decrease)		
6. Total gain (loss) on disposals	(1,611,115)	(26,570,127)
7. Deduct amounts received on disposals	2,194,812,123	3,082,428,844
8. Deduct amortization of premium and mortgage interest points and commitment fees	(2,158,042)	2,909,861
9. Total foreign exchange change in book value/recorded investment excluding accrued interest	(83,608,005)	154,806,148
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)	23,328,066,803	22,579,846,619
12. Total valuation allowance		
13. Subtotal (Line 11 plus Line 12)	23,328,066,803	22,579,846,619
14. Deduct total nonadmitted amounts		
15. Statement value at end of current period (Line 13 minus Line 14)	23,328,066,803	22,579,846,619

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	7,722,717,021	7,233,113,042
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	457,509,361	1,581,211,660
2.2 Additional investment made after acquisition	1,269,091,755	1,521,461,828
3. Capitalized deferred interest and other		
4. Accrual of discount		
5. Unrealized valuation increase (decrease)	799,381,055	1,089,199,341
6. Total gain (loss) on disposals	6,661,972	(24,302,393)
7. Deduct amounts received on disposals	2,361,544,860	3,766,712,098
8. Deduct amortization of premium and depreciation	402,751	449,633
9. Total foreign exchange change in book/adjusted carrying value	(35,309,358)	102,490,723
10. Deduct current year's other than temporary impairment recognized	24,336,037	13,295,448
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	7,833,768,158	7,722,717,021
12. Deduct total nonadmitted amounts	45,549,908	44,931,819
13. Statement value at end of current period (Line 11 minus Line 12)	7,788,218,250	7,677,785,202

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	106,837,837,246	99,649,127,776
2. Cost of bonds and stocks acquired	21,094,711,387	27,916,049,478
3. Accrual of discount	210,614,846	272,189,271
4. Unrealized valuation increase (decrease)	41,020,293	342,157,228
5. Total gain (loss) on disposals	43,986,026	41,513,425
6. Deduct consideration for bonds and stocks disposed of	15,397,437,228	22,005,237,281
7. Deduct amortization of premium	102,656,074	157,747,912
8. Total foreign exchange change in book/adjusted carrying value	(372,569,543)	911,278,992
9. Deduct current year's other than temporary impairment recognized	1,337,451,793	131,493,731
10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees	31,286,285	
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	111,049,341,445	106,837,837,246
12. Deduct total nonadmitted amounts		
13. Statement value at end of current period (Line 11 minus Line 12)	111,049,341,445	106,837,837,246

STATEMENT AS OF SEPTEMBER 30, 2018 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)	51,117,251,647	4,907,161,764	3,224,864,149	153,316,678	49,052,494,081	51,117,251,647	52,952,865,940	49,042,922,001
2. NAIC 2 (a)	39,132,301,428	11,811,173,713	13,246,988,296	(15,702,258)	37,114,505,125	39,132,301,428	37,680,784,587	35,672,949,532
3. NAIC 3 (a)	3,327,650,588	758,784,959	811,908,858	(159,083,110)	3,976,224,982	3,327,650,588	3,115,443,579	4,824,432,817
4. NAIC 4 (a)	2,526,962,745	529,166,952	291,222,872	(345,963,420)	2,688,238,461	2,526,962,745	2,418,943,405	2,805,056,844
5. NAIC 5 (a)	1,085,785,049	46,606,056	118,249,424	256,503,800	1,203,439,106	1,085,785,049	1,270,645,481	998,790,916
6. NAIC 6 (a)	353,488,726	4,606,974	32,167,039	108,004,314	341,590,419	353,488,726	433,932,975	386,586,979
7. Total Bonds	97,543,440,183	18,057,500,418	17,725,400,638	(2,923,996)	94,376,492,174	97,543,440,183	97,872,615,967	93,730,739,089
PREFERRED STOCK								
8. NAIC 1	455,200,000				455,200,000	455,200,000	455,200,000	455,200,000
9. NAIC 2	129,574,487			(1,337,600)	145,330,200	129,574,487	128,236,887	140,991,800
10. NAIC 3	140,943,708				140,943,708	140,943,708	140,943,708	140,482,835
11. NAIC 4	622,701	669,190		9,799	13,274,500	622,701	1,301,690	628,860
12. NAIC 5	15,717,557			(12,835)	3,100,879	15,717,557	15,704,722	15,840,658
13. NAIC 6	546,872	10,000,000			11,364,872	546,872	10,546,872	14,662,936
14. Total Preferred Stock	742,605,325	10,669,190		(1,340,636)	769,214,159	742,605,325	751,933,879	767,807,089
15. Total Bonds and Preferred Stock	98,286,045,508	18,068,169,608	17,725,400,638	(4,264,632)	95,145,706,333	98,286,045,508	98,624,549,846	94,498,546,178

(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 \$ 404,026,924 ; NAIC 2 \$ 1,085,764,362 ; 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	513,958,350	XXX	512,248,310		

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	508,320,258	707,992,227
2. Cost of short-term investments acquired	1,859,519,764	2,635,782,710
3. Accrual of discount	8,025,490	5,773,955
4. Unrealized valuation increase (decrease)		
5. Total gain (loss) on disposals	95,268	24,350
6. Deduct consideration received on disposals	1,862,002,430	2,841,252,984
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)	513,958,350	508,320,258
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	513,958,350	508,320,258

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)	2,878,021,222
2. Cost Paid/(Consideration Received) on additions	615,445,397
3. Unrealized Valuation increase/(decrease)	359,235,914
4. Total gain (loss) on termination recognized	(44,573,503)
5. Considerations received/(paid) on terminations	528,291,786
6. Amortization	(6,746,785)
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)	3,273,090,460
10. Deduct nonadmitted assets	
11. Statement value at end of current period (Line 9 minus Line 10)	3,273,090,460

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	(128,127,331)
3.14 Section 1, Column 18, prior year	18,023,700 (146,151,031) (146,151,031)
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	(128,127,331)
3.24 Section 1, Column 19, prior year	18,023,700 (146,151,031) (146,151,031)
3.3 Subtotal (Line 3.1 minus Line 3.2)	
4.1 Cumulative variation margin on terminated contracts during the year	(182,364,745)
4.2 Less:	
4.21 Amount used to adjust basis of hedged item	
4.22 Amount recognized	(200,388,445) (200,388,445)
4.3 Subtotal (Line 4.1 minus Line 4.2)	18,023,701
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	(18,023,701)
6. Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)	
7. Deduct total nonadmitted amounts	
8. Statement value at end of current period (Line 6 minus Line 7)	

STATEMENT AS OF SEPTEMBER 30, 2018 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*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2	50,000,000	44,978,095	39,495,585	10/01/2012	10/01/2042	Interest Rate Swap	(5,236,530)		42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	44,978,095	44,732,115
57629*AA9	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	2		11,392,030	12,220,000	10/01/2012	10/01/2042	Interest Rate Swap			32080B-AD-0	FIRST MARYLAND CAP I-LIMITED GUARANTEE NOTE	2	11,392,030	12,220,000
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3	50,000,000	5,600,000	318,245	10/01/2012	10/01/2042	Interest Rate Swap	(5,288,397)		87246M-AA-0	TICP CLO LTD-SERIES 2016-6A CLASS A	1	5,600,000	5,606,642
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		21,903,739	20,917,735	10/01/2012	10/01/2042	Interest Rate Swap			G7818N-ZZ-5	SASOL CHEMICALS (USA) LL TERM LOAN	2	21,903,739	20,917,735
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		5,469,855	5,469,855	10/01/2012	10/01/2042	Interest Rate Swap			77277L-A7-2	ROCKALL CLO BV Variable Funding Note- USD	1	5,469,855	5,469,855
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		4,862,483	5,028,827	10/01/2012	10/01/2042	Interest Rate Swap			83149E-AG-2	SLM STUDENT LN TR 2006-5-NOTE CL B	1	4,862,483	5,028,827
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		5,470,000	5,481,230	10/01/2012	10/01/2042	Interest Rate Swap			883310-AE-4	THAYER PARK CLO LTD.-THAYR 2017-1A	1	5,470,000	5,481,230
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		6,410,297	6,422,606	10/01/2012	10/01/2042	Interest Rate Swap			77342K-AA-8	ROCKFORD TOWER CLO 2018-ROCKT 2018-2A A	1	6,410,297	6,422,606
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		4,000,000	3,954,888	10/01/2012	10/01/2042	Interest Rate Swap			09628F-AE-9	BlueMountain Fuji US CLO-SERIES 2017-3A CLASS B	1	4,000,000	3,954,888
57629*AB7	Evergreen Basket of Long Fixed Rate Bank Loans B- or Above	3		3,000,000	2,999,958	10/01/2012	10/01/2042	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO LTD-CANVC 2012-1RA B	1	3,000,000	2,999,958
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	264,000,000	19,165,000	(9,642,291)	11/29/2012	11/29/2042	Interest Rate Swap	(28,778,544)		14316R-ZZ-6	Carlyle US CLO 2017-5 Re Term Loan	1	19,165,000	19,136,253
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,193,849	6,930,946	11/29/2012	11/29/2042	Interest Rate Swap			83149F-AD-6	SLMA 2006 6 NT CL B	1	6,193,849	6,930,946
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	7,000,518	11/29/2012	11/29/2042	Interest Rate Swap			67106J-AS-9	OHA CREDIT PARTNERS LTD-OAKC 2014-10A CR	1	7,000,000	7,000,518
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,500,000	15,515,857	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	15,515,857
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,331,277	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	13,331,277
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,100,000	13,099,961	11/29/2012	11/29/2042	Interest Rate Swap			670970-AC-9	OOP CLO 2017-14 LTD-SERIES 17-14A CLASS A1B	1	13,100,000	13,099,961
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,761,873	26,803,872	11/29/2012	11/29/2042	Interest Rate Swap			57542Z-A0-7	MASSMUTUAL ASSET FIN LLC SR SECD REV NT	1	27,761,873	26,803,872
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		154,000,000	154,022,792	11/29/2012	11/29/2042	Interest Rate Swap			126611-AL-6	CVP CASCADE CLO LTD-CVPC 2014-2A A1R	1	154,000,000	154,022,792
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,200,000	6,213,931	11/29/2012	11/29/2042	Interest Rate Swap			94950G-AE-7	WELLFLEET CLO LTD-WELF 2017-1A B	1	6,200,000	6,213,931
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,525,000	5,527,768	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	5,527,768
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,065,955	11/29/2012	11/29/2042	Interest Rate Swap			38137M-AK-3	Goldentree Loan Opportun-GLD12 2016-12A AJR	1	15,000,000	15,065,955
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,477,662	11/29/2012	11/29/2042	Interest Rate Swap			03767M-AJ-7	Apidos CLO-APID 2018-29A B	1	4,500,000	4,477,662
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,992,629	4,999,970	11/29/2012	11/29/2042	Interest Rate Swap			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	4,992,629	4,999,970
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	12,000,000	4,286,198	12/27/2012	12/27/2042	Interest Rate Swap	(7,712,002)		67112K-AC-3	OOP CLO Ltd-SEREIS 18-15A CLASS A3	1	12,000,000	11,998,200
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	4,011,184	12/27/2012	12/27/2042	Interest Rate Swap			83609R-AE-1	SOUND POINT CLO LTD-SNDPT 2017-1A C	1	4,000,000	4,011,184
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,800,000	22,818,240	12/27/2012	12/27/2042	Interest Rate Swap			14315J-YY-9	Carlyle US CLO 2017-3 Ri Term Loan	1	22,800,000	22,818,240
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,181,107	12/27/2012	12/27/2042	Interest Rate Swap			03330A-AC-6	Anchorage Capital CLO 3-ANCHC 2014-3RA B	1	3,200,000	3,181,107
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		33,000,000	32,999,439	12/27/2012	12/27/2042	Interest Rate Swap			87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	33,000,000	32,999,439
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,800,000	8,727,981	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	8,727,981
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,904,718	16,134,457	12/27/2012	12/27/2042	Interest Rate Swap			24820R-AA-6	Statoil ASA-SENIOR UNSECURED NOTE	1	13,904,718	16,134,457
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,500,000	10,502,594	12/27/2012	12/27/2042	Interest Rate Swap			94949L-AA-8	WELLFLEET CLO LTD-WELF 2016-2A A1	1	10,500,000	10,502,594

STATEMENT AS OF SEPTEMBER 30, 2018 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 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,900,000	8,948,843	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	8,948,843
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,650,000	8,668,606	12/28/2012	12/28/2042	Interest Rate Swap				33882G-AC-2	FLATIRON CLO LTD-FLAT 2017-1A CLASS A2	1	8,650,000	8,668,606
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,825,000	6,825,990	12/28/2012	12/28/2042	Interest Rate Swap				50189G-AC-6	BLUEMOUNTAIN CLO LTD-BLUEM 2013-1A	1	6,825,000	6,825,990
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,258,538	12/28/2012	12/28/2042	Interest Rate Swap				09626U-AQ-1	DRYDEN SENIOR LOAN FUND-SERIES 2014-36A CLASS CR	1	4,250,000	4,258,538
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,350,000	6,374,136	12/28/2012	12/28/2042	Interest Rate Swap				26249K-AM-3	SLM STUDENT LOAN TRUST-SERIES 2013-1 CLASS B	1	6,350,000	6,374,136
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,761,000	13,054,766	12/28/2012	12/28/2042	Interest Rate Swap				78447M-AD-0	Regatta XIV Funding Ltd-SERIES 18-3A CLASS B	1	12,761,000	13,054,766
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,244,779	12/28/2012	12/28/2042	Interest Rate Swap				75888M-AG-5	BLUEMOUNTAIN CLO LTD-BLUEM 2013-4A	1	4,250,000	4,244,779
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	13,560,000	10,157,854	12/28/2012	12/28/2042	Interest Rate Swap		(3,410,607)		09627D-AQ-8	MADISON PARK FUNDING XVI-SERIES 15-18A CLASS A1R	1	13,560,000	13,568,461
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,018,450	12/28/2012	12/28/2042	Interest Rate Swap				55819B-AL-4	NAVIENT STUDENT LOAN TRU-SERIES 17-4A CLASS B	1	10,000,000	10,018,450
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,532,577	9,442,203	12/28/2012	12/28/2042	Interest Rate Swap				63940A-AD-0	ARES CLO LTD-SERIES 2015 1-A CLASS A2R	1	9,532,577	9,442,203
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,600,000	9,622,694	12/28/2012	12/28/2042	Interest Rate Swap				00191Y-AM-6	DRYDEN SENIOR LOAN FUND-SERIES 2016-43A CLASS B	1	9,600,000	9,622,694
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,537,043	12/28/2012	12/28/2042	Interest Rate Swap				26245C-AE-3	Benefit Street Partners -BSP 2018-15A A2A	1	7,500,000	7,537,043
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,099,955	12/28/2012	12/28/2042	Interest Rate Swap				08179M-AC-3	Canyon Capital CLO Ltd-CANYC 2012-18A B	1	1,100,000	1,099,955
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,499,965	12/28/2012	12/28/2042	Interest Rate Swap				13876J-AE-2	DEER CREEK CLO LTD 2017-SERIES 17-1A CLASS B	1	2,500,000	2,499,965
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,000,000	6,594,423	12/28/2012	12/28/2042	Interest Rate Swap		(3,410,607)		24380L-AE-3	ASSURANT CLO III LTD-SERIES 2018-2A CLASS A	1	10,000,000	10,005,030
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,000,000	29,998,950	12/28/2012	12/28/2042	Interest Rate Swap				04624W-AC-1	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A2R	1	30,000,000	29,998,950
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,576,785	12/28/2012	12/28/2042	Interest Rate Swap				48249V-AQ-4	BENEFIT STREET PARTNERS -SERIES 2017-12A CLASS A2	1	13,570,000	13,576,785
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,850,000	4,843,811	12/28/2012	12/28/2042	Interest Rate Swap				08179H-AB-6	JAMES CAMPBELL CO LLC SR NT SER 2014-E	2	4,850,000	4,843,811
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	13,500,000	10,066,835	12/28/2012	12/28/2042	Interest Rate Swap		(3,410,607)		47032@-AK-7	SLM STUDENT LOAN TRUST-SERIES 2005-4 CLASS B	1	13,500,000	13,477,442
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,906,166	11,170,091	12/28/2012	12/28/2042	Interest Rate Swap				78442G-PL-4	BOWMAN PARK CLO LTD-BOWPK 2014-1A	1	10,906,166	11,170,091
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,920,000	8,920,482	12/28/2012	12/28/2042	Interest Rate Swap				10302V-BC-8	CAKTRREE CLO LTD-SERIES 14-1A CLASS A2R	1	8,920,000	8,920,482
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,850,000	6,858,295	12/28/2012	12/28/2042	Interest Rate Swap				674000-AQ-7	WIND RIVER CLO LTD-SERIES 17-2A CLASS B	1	6,850,000	6,858,295
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,840,000	6,848,140	12/28/2012	12/28/2042	Interest Rate Swap				88433R-AE-2	ALM XIV Ltd-SERIES 14-14A CLASS A2R2	1	6,840,000	6,848,140
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,002,990	12/28/2012	12/28/2042	Interest Rate Swap				50188Y-AB-0	LCM LTD PARTNERSHIP-LCM 24A B Benefit Street Partners -BSP 2018-15A A2A	1	5,000,000	5,002,990
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,099,955	12/28/2012	12/28/2042	Interest Rate Swap				08179M-AC-3	CIFC FUNDING LTD-SERIES 17-3A CLASS A2	1	1,100,000	1,099,955
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	5,400,000	2,000,171	12/28/2012	12/28/2042	Interest Rate Swap		(3,410,607)		12548J-AE-2	ALM XIV Ltd-SERIES 14-14A CLASS A2R2	1	5,400,000	5,410,778
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,785,189	12/28/2012	12/28/2042	Interest Rate Swap				74988L-AC-8	ARES CLO LTD-SERIES 2015 1-A CLASS B2R	1	11,900,000	11,785,189
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,050,000	3,065,323	12/28/2012	12/28/2042	Interest Rate Swap				00191Y-AP-9	LCM LTD PARTNERSHIP-SERIES 13A CLASS CR	1	3,050,000	3,065,323
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,512,789	12/28/2012	12/28/2042	Interest Rate Swap				50184K-AW-8	BENEFIT STREET PARTNERS -BSP 2016-10A A1	1	4,500,000	4,512,789
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,002,950	12/28/2012	12/28/2042	Interest Rate Swap				08181L-AA-5	Benefit Street Partners -SERIES 16-9A CLASS BR	1	5,000,000	5,002,950
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,199,821	12/28/2012	12/28/2042	Interest Rate Swap				08181B-AS-8		1	11,200,000	11,199,821

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STATEMENT AS OF SEPTEMBER 30, 2018 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	14 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		8,750,000	8,752,266	12/28/2012	12/28/2042	Interest Rate Swap			05618L-AH-9	BABSON CLO LTD-BABSON 2014-11A CR	1	8,750,000	8,752,266
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,900,667	12/28/2012	12/28/2042	Interest Rate Swap			05875F-AC-1	BALLYROCK LTD-SERIES 16-1A CLASS B1	1	3,900,000	3,900,667
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	20,000,000	15,831,839	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	36248M-AJ-6	GT Loan Financing I Ltd -SERIES 2013-1A CLASS AR	1	20,000,000	19,998,660
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,082,568	21,015,104	12/31/2012	12/31/2042	Interest Rate Swap			14315J-MM-8	Carlyle US CLO 2013-2 Re Term Loan	1	21,082,568	21,015,104
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,550,000	7,575,829	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	7,575,829
57629*AN1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,850,000	5,831,760	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	5,831,760
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	13,560,000	9,399,823	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	09627R-AL-8	BLUEMOUNTAIN CLO LTD-BLUEM 2014-3A A2AR	1	13,560,000	13,566,644
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,000,000	24,912,350	12/31/2012	12/31/2042	Interest Rate Swap			67104L-AF-4	OH Loan Funding 2013-2 -OHALF 2013-2A BR	1	25,000,000	24,912,350
57629*AP6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,850,000	13,849,848	12/31/2012	12/31/2042	Interest Rate Swap			38137P-AU-4	GALAXY CLO LTD-GALXY 2014-18A AR	1	13,850,000	13,849,848
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*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	14,300,000	10,185,803	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	55820J-AC-4	MADISON PARK FUNDING LTD-SERIES 2016-21A CLASS A2	1	14,300,000	14,352,624
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,998,785	12/31/2012	12/31/2042	Interest Rate Swap			48250W-AJ-4	KKR CLO 14 Ltd-KKR 14 BR	1	15,000,000	14,998,785
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,920	12/31/2012	12/31/2042	Interest Rate Swap			87248K-AS-3	TICP CLO VI 2016-5 LTD-TICP 2016-5A A2R	1	5,000,000	4,999,920
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,350,000	4,351,257	12/31/2012	12/31/2042	Interest Rate Swap			020053-AS-3	ALM LOAN FUNDING-SERIES 13-8A CLASS A1R	1	4,350,000	4,351,257
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,700,000	2,700,629	12/31/2012	12/31/2042	Interest Rate Swap			87154E-AN-0	SYMPHONY CLO LTD-SERIES 14-15A CLASS CR	1	2,700,000	2,700,629
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,700,000	8,704,985	12/31/2012	12/31/2042	Interest Rate Swap			59983H-AB-5	MILL CREEK CLO II LTD-SR SECD NT CL B-1 144A	1	8,700,000	8,704,985
57629*A04	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,963,356	12/31/2012	12/31/2042	Interest Rate Swap			28622J-AB-3	ARROWMARK COLORADO HOLDI-SERIES 17-7A CLASS B	1	4,000,000	3,963,356
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	2,600,000	(1,566,103)	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	88432D-AU-8	WIND RIVER CLO LTD-SERIES 14-3A CLASS C1R	1	2,600,000	2,600,718
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,400,000	7,410,390	12/31/2012	12/31/2042	Interest Rate Swap			92916M-AC-5	VOYA CLO LTD-VOYA 2017-1A B	1	7,400,000	7,410,390
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,350,000	5,358,437	12/31/2012	12/31/2042	Interest Rate Swap			69689A-AN-0	PALMER SQUARE CLO LTD-SERIES 15-1A CLASS A2R	1	5,350,000	5,358,437
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,500,599	12/31/2012	12/31/2042	Interest Rate Swap			26244M-AC-6	DRYDEN SENIOR LOAN FUND-DRSLF 2016-45A B	1	4,500,000	4,500,599
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,472,393	12/31/2012	12/31/2042	Interest Rate Swap			55819T-AU-5	Madison Park Funding XX -SERIES 2016-20A CLASS CR	1	7,500,000	7,472,393
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,746,725	12/31/2012	12/31/2042	Interest Rate Swap			03328Y-AE-4	Anchorage Capital CLO Lt-ANCHC 2018-18A B	1	13,900,000	13,746,725
57629*AR2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,740,000	12,753,938	12/31/2012	12/31/2042	Interest Rate Swap			09626U-AN-8	BLUEMOUNTAIN CLO LTD-BLUEM 2013-1A A2R	1	12,740,000	12,753,938
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,040,484	5,739,792	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	46616K-AE-4	JFIN CLO 2013 LTD SR SECD DEF NT CL B	1	10,040,484	9,906,613
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,947,928	12/31/2012	12/31/2042	Interest Rate Swap			83608G-AQ-9	Sound Point CLO II Ltd-SNDPT 2013-1A A2R	1	8,000,000	7,947,928
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,998,620	12/31/2012	12/31/2042	Interest Rate Swap			05682V-AC-9	Bain Capital Credit CLO -SERIES 18-2A CLASS A2	1	15,000,000	14,998,620
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,004,130	12/31/2012	12/31/2042	Interest Rate Swap			50188Q-AE-1	LCM XIX LTD PARTNERSHIP DEF MEZZ NT CL C	1	10,000,000	10,004,130
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,675,000	10,677,946	12/31/2012	12/31/2042	Interest Rate Swap			38137Q-AC-2	GOLDENTREE LOAN OPPORTUN-GOLDS 2014-9A B1R	1	10,675,000	10,677,946
57629*AS0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,100,000	1,099,955	12/31/2012	12/31/2042	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,099,955
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,000,000	5,838,209	12/31/2012	12/31/2042	Interest Rate Swap		(4,166,821)	87248W-AC-2	TICP CLO VIII LTD-SERIES 2017-8A CLASS A2	1	10,000,000	10,005,030

STATEMENT AS OF SEPTEMBER 30, 2018 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*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,430,000	3,445,576	12/31/2012	12/31/2042	Interest Rate Swap			674000-AS-3	OAKTREE CLO LTD-SERIES 14-1A CLASS BR	1	3,430,000	3,445,576
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,900,000	5,899,994	12/31/2012	12/31/2042	Interest Rate Swap			48251F-AB-7	KKR FINANCIAL CLO LTD-SERIES 17 CLASS B	1	5,900,000	5,899,994
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,000,000	11,998,476	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	11,998,476
57629*AT8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,650,000	22,647,735	12/31/2012	12/31/2042	Interest Rate Swap			14315C-ZZ-0	Carlyle US CLO 2017-4 Ri Term Loan	1	22,650,000	22,647,735
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	6,830,000	04/09/2013	04/09/2043	Interest Rate Swap		(3,534,513)	55953E-AN-0	MAGNETITE CLO LTD-SERIES 14-11A CLASS BR	1	6,830,000	6,830,724
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,600,000	5,615,602	04/09/2013	04/09/2043	Interest Rate Swap			12550Y-AG-9	CIFC FUNDING LTD-CIFC 2017-2A C	1	5,600,000	5,615,602
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,280,000	4,285,093	04/09/2013	04/09/2043	Interest Rate Swap			09629C-AE-5	BLUEMOUNTAIN CLO LTD-SERIES 17-1A CLASS B	1	4,280,000	4,285,093
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,266,741	04/09/2013	04/09/2043	Interest Rate Swap			00163K-AS-7	ALM LOAN FUNDING-ALM 2013-TRA A2R Shackleton 2015-VII-R CL-SERIES	1	4,250,000	4,266,741
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,000,000	5,999,352	04/09/2013	04/09/2043	Interest Rate Swap			81883A-AC-3	2015-TRA CLASS B	1	6,000,000	5,999,352
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,499,588	04/09/2013	04/09/2043	Interest Rate Swap			77342J-AC-7	Rockford Tower CLO 2018--SERIES 18-1A CLASS B	1	7,500,000	7,499,588
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,100,000	6,106,259	04/09/2013	04/09/2043	Interest Rate Swap			94951M-AC-7	WELFLEET CLO 2017-2 LTD-SERIES 17-2A CLASS A2	1	6,100,000	6,106,259
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,330,000	4,343,696	04/09/2013	04/09/2043	Interest Rate Swap			64130H-AE-1	NEUBERGER BERMAN CLO LTD-NEUB 2017-24A C	1	4,330,000	4,343,696
57629*AI1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,567,648	04/09/2013	04/09/2043	Interest Rate Swap			64129J-AQ-3	NEUBERGER BERMAN CLO LTD-NEUB 2013-14A A1R	1	13,560,000	13,567,648
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	60,000,000	17,970,000	14,473,567	04/09/2013	04/09/2043	Interest Rate Swap		(3,855,833)	74992*-AD-7	RXR Realty, LLO Senior Secured	2	17,970,000	18,329,400
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,500,000	18,347,542	04/09/2013	04/09/2043	Interest Rate Swap			50188G-AX-1	LCM XVIII LP-LCM 18A A2R	1	18,500,000	18,347,542
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,770,795	04/09/2013	04/09/2043	Interest Rate Swap			27830B-AQ-7	EATON VANCE CDO LTD-SERIES 2013-1A CLASS A2R	1	12,750,000	12,770,795
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,800,000	12,810,944	04/09/2013	04/09/2043	Interest Rate Swap			67102Q-AK-4	CHA CREDIT PARTNERS LTD-SERIES 2012-7A CLASS B1R	1	12,800,000	12,810,944
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,000,000	1,996,828	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	2,000,000	1,996,828
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	26,000,000	04/09/2013	04/09/2043	Interest Rate Swap		(3,613,983)	83609Y-AC-0	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS A	1	26,000,000	26,003,302
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,857,532	6,938,427	04/09/2013	04/09/2043	Interest Rate Swap			78442G-OA-7	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	6,857,532	6,938,427
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,775,000	10,781,163	04/09/2013	04/09/2043	Interest Rate Swap			74982L-AQ-3	RACE POINT CLO LTD-SERIES 13-8A CLASS BR	1	10,775,000	10,781,163
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,350,000	15,282,460	04/09/2013	04/09/2043	Interest Rate Swap			14315J-RR-2	Carlyle US CLO 2013-4 Re Term Loan	1	15,350,000	15,282,460
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		55,000,000	850,987	04/09/2013	04/09/2043	Interest Rate Swap		(3,613,983)	55820R-AG-7	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS C	2	4,450,000	4,464,970
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,950,000	1,956,757	04/09/2013	04/09/2043	Interest Rate Swap			55954K-AE-5	MAGNETITE CLO LTD-SERIES 2017-19A CLASS C	1	1,950,000	1,956,757
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,850,000	22,887,703	04/09/2013	04/09/2043	Interest Rate Swap			14311C-RR-1	Carlyle US CLO 2017-1 Ri Term Loan	1	22,850,000	22,887,703
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,010,160	04/09/2013	04/09/2043	Interest Rate Swap			033292-AS-2	ANCHORAGE CAPITAL CLO 20-SERIES 13-1A CLASS A2R	1	10,000,000	10,010,160
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,190,000	5,184,831	04/09/2013	04/09/2043	Interest Rate Swap			00900A-AN-8	AIMCO-SERIES 14-AA CLASS C1R	1	5,190,000	5,184,831
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	7,001,701	04/09/2013	04/09/2043	Interest Rate Swap			50188Q-AC-5	LCM XIX LTD PARTNERSHIP SR NT CL B	1	7,000,000	7,001,701
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,825,000	4,827,456	04/09/2013	04/09/2043	Interest Rate Swap			89473L-AB-0	TREMAN PK CLO LTD SR SEC2 NT CL B-1	1	4,825,000	4,827,456
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	1,000,358	04/09/2013	04/09/2043	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	1,000,000	1,000,358
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	1,000,358	04/09/2013	04/09/2043	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANYC 2012-18A B	1	1,000,000	1,000,358

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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*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	28,040,398	32,808,690	05/19/2014	05/19/2044	Interest Rate Swap	2,924,536		77277L-G0-1	ROCKALL CLO BV EURO CL VF-1 SR SECD VAR FDG NT	1	28,040,398	29,884,154
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		45,000,000	44,999,505	05/19/2014	05/19/2044	Interest Rate Swap			13876J-AC-6	Canyon Capital CLO Ltd-CANVC 2012-1RA A	1	45,000,000	44,999,505
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,100,000	9,102,548	05/19/2014	05/19/2044	Interest Rate Swap			09627R-AN-4	BLUEMOUNTAIN CLO LTD-BLUEM 2014-3A BR	1	9,100,000	9,102,548
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,100,000	9,121,531	05/19/2014	05/19/2044	Interest Rate Swap			40436V-AC-5	HIGHBRIDGE LOAN MANAGEM-HLM 11A-17 C	1	9,100,000	9,121,531
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,950,000	8,977,074	05/19/2014	05/19/2044	Interest Rate Swap			50184N-AP-7	LOM LTD PARTNERSHIP-SERIES 15A CLASS CR	1	8,950,000	8,977,074
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,600,000	4,634,458	05/19/2014	05/19/2044	Interest Rate Swap			65341K-AJ-5	NEXTGEAR FLOORPLAN WASTE-SERIES 2016-1A CLASS A1	1	4,600,000	4,634,458
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,100,000	13,016,422	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	13,016,422
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		44,978,095	44,732,115	05/19/2014	05/19/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	44,978,095	44,732,115
57629*BE0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,042,857	23,063,826	05/19/2014	05/19/2044	Interest Rate Swap			14315J-ZZ-5	Carlyle US CLO 2017-2 Ri Term Loan	1	23,042,857	23,063,826
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	20,000,000	19,761,246	05/19/2014	05/19/2034	Interest Rate Swap		(248,514)	67105V-AW-4	CHA CREDIT PARTNERS LTD-OAKC 2013-9A B1R	1	20,000,000	20,009,760
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	49,883,250	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	49,883,250
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,999,776	05/19/2014	05/19/2034	Interest Rate Swap			64130P-AE-3	Neuberger Berman CLO Ltd-NEUB 2018-28A B	1	7,000,000	6,999,776
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,999,700	05/19/2014	05/19/2034	Interest Rate Swap			13080B-AB-7	SYMPHONY CLO LTD-SERIES 13-12A CLASS B1R	1	20,000,000	19,999,700
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,900,000	19,910,089	05/19/2014	05/19/2034	Interest Rate Swap			39808P-AL-0	Greywolf CLO V Ltd-GWOLF 2015-1A A1R	1	19,900,000	19,910,089
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,000,000	8,999,811	05/19/2014	05/19/2034	Interest Rate Swap			04017Q-AE-5	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	9,000,000	8,999,811
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	28,885,932	31,917,257	05/19/2014	05/19/2044	Interest Rate Swap		3,189,299	42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	28,885,932	28,727,958
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		34,000,000	33,998,912	05/19/2014	05/19/2044	Interest Rate Swap			03765D-AN-0	APIDOS CLO-APID 2014-18A A2AR C1FC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	34,000,000	33,998,912
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,994,103	3,999,976	05/19/2014	05/19/2044	Interest Rate Swap			17181T-AA-9	GOAL CAPITAL FUNDING TRU-SERIES 2006-1 CLASS B	1	3,994,103	3,999,976
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,659,016	6,635,049	05/19/2014	05/19/2044	Interest Rate Swap			38021B-AG-5	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	6,659,016	6,635,049
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,164,840	4,426,708	05/19/2014	05/19/2044	Interest Rate Swap			429827-AS-7	Palmer Square CLO 2018-1-PLMRS	1	4,164,840	4,426,708
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,966,440	05/19/2014	05/19/2044	Interest Rate Swap			69703P-AC-3	2018-1A A2	1	10,000,000	9,966,440
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,050,000	8,917,951	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	8,917,951
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,500,000	9,557,319	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	9,557,319
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,750,000	7,670,322	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	7,670,322
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,467,563	05/19/2014	05/19/2044	Interest Rate Swap			03330A-AE-2	Anchorage Capital CLO 3--ANCHC 2014-3RA C	1	7,500,000	7,467,563
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,923,072	05/19/2014	05/19/2044	Interest Rate Swap			38137H-BW-7	Goldentree Loan Opportun-SERIES 2015-11A CLASS BR2	1	8,000,000	7,923,072
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,964,200	05/19/2014	05/19/2044	Interest Rate Swap			39808P-AN-6	Greywolf CLO V Ltd-GWOLF 2015-1A A2R	1	8,000,000	7,964,200
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,050,000	7,961,474	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	7,961,474
57629*BG5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,800,000	5,731,728	05/19/2014	05/19/2044	Interest Rate Swap			01749B-AC-3	Allegro CLO VI Ltd-ALLEG 2017-2A C	1	5,800,000	5,731,728
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	15,000,000	18,146,772	05/19/2014	05/19/2044	Interest Rate Swap		3,141,777	00164B-AS-6	ALM LOAN FUNDING-SERIES 2013-7R2A CLASS A2R	1	15,000,000	15,004,995
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,539,367	2,519,860	05/19/2014	05/19/2044	Interest Rate Swap			784424-AE-3	SCL STUDENT LOAN TRUST 2-SERIES 07-1 CLASS B	1	2,539,367	2,519,860

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STATEMENT AS OF SEPTEMBER 30, 2018 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 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,014,145	05/19/2014	05/19/2044	Interest Rate Swap				67091H-AK-7	OHA LOAN FUNDING LTD-OHALF 2012-1A B1R	1	15,000,000	15,014,145
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,665,000	14,665,423	05/19/2014	05/19/2044	Interest Rate Swap				09628W-AC-6	BLUEMOUNTAIN CLO LTD-SERIES 16-2A CLASS A2	1	14,600,000	14,665,423
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,850,000	13,857,756	05/19/2014	05/19/2044	Interest Rate Swap				09626R-AQ-8	BLUEMOUNTAIN CLO LTD-BLUEM 2012-2A BR	1	13,850,000	13,857,756
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,850,000	13,887,991	05/19/2014	05/19/2044	Interest Rate Swap				11014P-AB-1	B1R BRISTOL PARK CLO LTD-SERIES 2016-1A CLASS B	1	13,850,000	13,887,991
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,150,000	12,160,716	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	12,160,716
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,926,010	4,027,181	05/19/2014	05/19/2044	Interest Rate Swap				23340L-AA-2	DRB PRIME STUDENT LOAN T-SERIES 2015-B CLASS A1	1	3,926,010	4,027,181
57629*BH3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		67,500,000	64,793,250	05/19/2014	05/19/2044	Interest Rate Swap				22101F-AA-6	CORVIAS CAMPUS LIVING - HU, LLC - Sr Seed Note	2	67,500,000	64,793,250
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	133,500,000	136,314,715	05/19/2014	05/19/2044	Interest Rate Swap		2,815,916		858102-AX-4	Steele Creek CLO 2016-1 -SERIES 2016-1A CLASS AR	1	133,500,000	133,498,799
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,780	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	9,999,780
57629*BJJ	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	6,999,454	05/19/2014	05/19/2044	Interest Rate Swap				48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR Steele Creek CLO 2014-1 -SERIES 14- 1A CLASS A	1	7,000,000	6,999,454
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	130,000,000	132,391,206	05/19/2014	05/19/2044	Interest Rate Swap		2,815,916		85816W-AC-8	1A CLASS A	1	130,000,000	129,575,290
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,000,195	05/19/2014	05/19/2044	Interest Rate Swap				88322U-AM-1	THACHER PARK CLO-THRPK 2014-1A BR SALEM FIELDS CLO LTD-SERIES 16-2A CLASS A2	1	15,000,000	15,000,195
57629*BK6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,150,000	9,149,991	05/19/2014	05/19/2044	Interest Rate Swap				79410U-AC-5	CIFC Funding 2018-IV Ltd-SERIES 18- 4A CLASS A1	1	9,150,000	9,149,991
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	4,992,629	7,870,196	05/19/2014	05/19/2044	Interest Rate Swap		2,870,226		17181T-AA-9	ATLAS SENIOR LOAN FUND L-SERIES 2017-8A CLASS B	1	4,992,629	4,999,970
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,300,000	25,348,247	05/19/2014	05/19/2044	Interest Rate Swap				04943A-AC-3	SYMPHONY CLO LTD-SYMP 2014-14A B1R Harbour Aircraft Investm Series	1	25,300,000	25,348,247
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,800,000	12,801,600	05/19/2014	05/19/2044	Interest Rate Swap				871590-BG-2	2017-1 C OHA Loan Funding 2013-2 -OHALF	1	12,800,000	12,801,600
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,673,241	24,603,097	05/19/2014	05/19/2044	Interest Rate Swap				64301U-AH-7	Wellfleet CLO 2016-1 Ltd-WELF 2016- 1A CR	1	24,673,241	24,603,097
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		79,100,000	78,847,196	05/19/2014	05/19/2044	Interest Rate Swap				67104L-AE-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	79,100,000	78,847,196
57629*BL4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,999,480	05/19/2014	05/19/2044	Interest Rate Swap				94949R-AW-7	SASOL CHEMICALS (USA) LL TERM LOAN	1	4,000,000	3,999,480
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	44,978,095	47,615,919	05/19/2014	05/19/2044	Interest Rate Swap		2,883,804		42086P-AC-7	AEGIS ASSET BACKED SECUR-SERIES 2005-4 CLASS M1	1	44,978,095	44,732,115
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,678,049	16,882,265	05/19/2014	05/19/2044	Interest Rate Swap				67818N-ZZ-5	EAIV Delta MSN 15181	1	17,678,049	16,882,265
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,367,279	6,638,898	05/19/2014	05/19/2044	Interest Rate Swap				00764M-GG-6	ATRIUM CDO CORP-ATRM 11A BR NEUBERGER BERMAN CLO LTD-NEUB 2017- 24A A	1	6,367,279	6,638,898
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,557,852	4,056,160	05/19/2014	05/19/2044	Interest Rate Swap				24735B-CC-6	NEUBERGER BERMAN CLO LTD-NEUB 2017- 24A B1	1	4,557,852	4,056,160
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,550,000	21,549,612	05/19/2014	05/19/2044	Interest Rate Swap				04964W-AQ-8	SENECA PARK CLO LTD-SPARK 2014-1A B1R	1	21,550,000	21,549,612
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,576,096	05/19/2014	05/19/2044	Interest Rate Swap				64130H-AA-9	LA Stadium Finance Compa Senior Secured	2	13,560,000	13,576,096
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,600,000	13,608,446	05/19/2014	05/19/2044	Interest Rate Swap				64130H-AC-5	EVERY POINT CLO LTD-SERIES 14-1A CLASS AR	1	13,600,000	13,608,446
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,000,150	05/19/2014	05/19/2044	Interest Rate Swap				817176-AN-0	CIFC Funding 2018-IV Ltd-SERIES 18- 4A CLASS A1	1	15,000,000	15,000,150
57629*BM2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,800,000	15,777,090	05/19/2014	05/19/2044	Interest Rate Swap				50512F-AE-2	ROCKALL CLO BV Variable Funding Note - GBP	1	15,800,000	15,777,090
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	135,000,000	130,592,324	133,583,146	05/19/2014	05/19/2044	Interest Rate Swap		2,974,237		05363U-AS-2	EVERY POINT CLO LTD-SERIES 14-1A CLASS AR	1	130,592,324	130,608,909
57629*BNO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,591,745	5,599,966	05/19/2014	05/19/2044	Interest Rate Swap				17181T-AA-9	2017-8A CLASS B	1	5,591,745	5,599,966
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	85,000,000	35,597,035	32,834,803	05/09/2014	05/09/2034	Interest Rate Swap		994,149		77277L-BB-9	Rockall CLO BV Variable Funding Note - GBP	1	35,597,035	31,840,654

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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*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,997,585	05/09/2014	05/09/2034	Interest Rate Swap			03765W-BC-1	Apollo Credit Funding IV-SERIES 4A CLASS A1BR	1	15,000,000	14,997,585
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,580,856	05/09/2014	05/09/2034	Interest Rate Swap			04016P-AC-2	ARES CLO LTD-SERIES 17-43A CLASS B	1	13,570,000	13,580,856
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,573,542	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	13,573,542
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,528,418	13,554,395	05/09/2014	05/09/2034	Interest Rate Swap			77342K-AA-8	ROCKFORD TOWER CLO 2018-ROCKT 2018-2A A	1	13,528,418	13,554,395
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	13,100,000	14,788,781	07/22/2014	07/22/2044	Interest Rate Swap		1,840,151	67707B-AB-6	CHA Credit Partners XV L-SERIES 17-15A CLASS B	1	13,100,000	12,948,630
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,300,000	13,298,630	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	13,298,630
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	8,000,000	07/22/2014	07/22/2044	Interest Rate Swap			67115W-AG-5	CHA Credit Funding 1 LTD-SERIES 18-1A CLASS B	1	8,000,000	8,000,000
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,999,475	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	14,999,475
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,430,732	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	13,430,732
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,961,572	12,016,903	07/22/2014	07/22/2044	Interest Rate Swap			247361-PP-9	DELTA AIR LINES INC AIRBUS A330-200 N856NW	1	11,961,572	12,016,903
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		35,000,000	35,062,265	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	35,062,265
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,900,000	5,916,266	07/22/2014	07/22/2044	Interest Rate Swap			40436X-AG-2	HIGHBRIDGE LOAN MANAGEMEN-SERIES 2014 CLASS BR	1	5,900,000	5,916,266
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,500,000	14,507,366	07/22/2014	07/22/2044	Interest Rate Swap			553205-AC-9	MP CLO III LTD-IMP3 2013-1A AR GT Loan Financing I Ltd-SERIES 2013-1A CLASS AR	1	14,500,000	14,507,366
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	20,000,000	21,850,178	07/22/2014	07/22/2044	Interest Rate Swap		1,851,518	36248M-AJ-6	WIND RIVER CLO LTD-SERIES 14-3A CLASS BR	1	20,000,000	19,998,660
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,400,000	11,400,160	07/22/2014	07/22/2044	Interest Rate Swap			88432D-AS-3	WIND RIVER CLO LTD-SERIES 17-2A CLASS A	1	11,400,000	11,400,160
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,590,000	19,607,102	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	19,607,102
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,500,000	19,510,374	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	19,510,374
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,505,763	07/22/2014	07/22/2044	Interest Rate Swap			15032T-AW-6	CIFC FUNDING LTD-SERIES 17-4A CLASS A2	1	8,500,000	8,505,763
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	8,004,904	07/22/2014	07/22/2044	Interest Rate Swap			12551J-AE-6	BABSON CLO LTD-SERIES 17-1A CLASS C	1	8,000,000	8,004,904
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,100,000	5,116,901	07/22/2014	07/22/2044	Interest Rate Swap			06760B-AJ-1	MARBLE POINT CLO X LTD-SERIES 2017-1A CLASS B	1	5,100,000	5,116,901
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,100,000	5,103,759	07/22/2014	07/22/2044	Interest Rate Swap			566061-AE-7	MADISON PARK FUNDING LTD-SERIES 15-17A CLASS CR	1	5,100,000	5,103,759
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,400,000	3,419,482	04/09/2013	04/09/2043	Interest Rate Swap			55818Y-BG-5	CHA CREDIT PARTNERS LTD-SERIES 2012-7A CLASS CR	1	3,400,000	3,419,482
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,975,000	2,980,709	04/09/2013	04/09/2043	Interest Rate Swap			67102Q-AP-3	TCI-CENT CLO 2016-1 LTD-TCENT 2016-1A A2	1	2,975,000	2,980,709
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,540,000	6,550,909	04/09/2013	04/09/2043	Interest Rate Swap			87231L-AC-5	WELLFLEET CLO LTD-WELF 2017-1A A1	1	6,540,000	6,550,909
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,250,000	9,257,668	04/09/2013	04/09/2043	Interest Rate Swap			94950G-AA-5	WIND RIVER CLO LTD-SERIES 16-2A CLASS B	1	9,250,000	9,257,668
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,750,000	5,751,472	04/09/2013	04/09/2043	Interest Rate Swap			88433B-AC-1	WIND RIVER CLO LTD-SERIES 16-2A CLASS B	1	5,750,000	5,751,472
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	17,000,000	18,851,688	07/22/2014	07/22/2044	Interest Rate Swap		1,851,518	04014W-AL-9	ARES CLO LTD-ARES 2014-1A A2R Steele Creek Clo 2018-2-SERIES 2018-2A CLASS A	1	17,000,000	17,000,170
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,977,072	15,967,888	07/22/2014	07/22/2044	Interest Rate Swap			85816L-AA-6	Carlyle US CLO 2013-1 Re Term Loan	1	15,977,072	15,967,888
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,550,000	22,581,570	07/22/2014	07/22/2044	Interest Rate Swap			14315J-SS-9	MADISON PARK FUNDING LTD-MDPK 2014-12A B1R	1	22,550,000	22,581,570
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,000,000	17,000,782	07/22/2014	07/22/2044	Interest Rate Swap			55818P-AN-0	REGATTA VI FUNDING LTD-SER 2016-1A CL A	1	17,000,000	17,000,782
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,305,963	8,230,370	07/22/2014	07/22/2044	Interest Rate Swap			75887N-AC-3		1	8,305,963	8,230,370

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STATEMENT AS OF SEPTEMBER 30, 2018 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 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,900,000	6,913,131	07/22/2014	07/22/2044	Interest Rate Swap				38136F-AL-7	Goldentree Loan Managem-GLM 2017-1A C	1	6,900,000	6,913,131
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,650,000	5,658,769	07/22/2014	07/22/2044	Interest Rate Swap				50184N-AN-2	LCM LTD PARTNERSHIP-SERIES 15A CLASS BR	1	5,650,000	5,658,769
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,091,006	8,929,357	07/22/2014	07/22/2044	Interest Rate Swap				61945C-AA-1	MOSAIC CO/THE-SENIOR UNSECURED NOTE	2	9,091,006	8,929,357
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,000,000	21,556,543	07/22/2014	07/22/2044	Interest Rate Swap				67332F-AG-8	RRPF Engine Leasing Ltd Senior Secured	2	23,000,000	21,556,543
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	7,000,000	8,805,903	07/22/2014	07/22/2044	Interest Rate Swap		1,806,050		040170-AE-5	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	7,000,000	6,999,853
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,600,000	7,607,752	07/22/2014	07/22/2044	Interest Rate Swap				75889K-AC-8	REGATTA VIII FUNDING LTD-SERIES 2017-1A CLASS B	1	7,600,000	7,607,752
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,460,000	7,468,325	07/22/2014	07/22/2044	Interest Rate Swap				00900C-AA-2	AIMCO-AIMCO 2017-AA A	1	7,460,000	7,468,325
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,400,000	28,308,041	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	28,308,041
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,805,752	11,809,180	07/22/2014	07/22/2044	Interest Rate Swap				26244Q-AB-9	DRYDEN SENIOR LOAN FUND-SERIES 17-49A CLASS B	1	11,805,752	11,809,180
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		41,979,555	41,749,974	07/22/2014	07/22/2044	Interest Rate Swap				42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	41,979,555	41,749,974
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,002,985	07/22/2014	07/22/2044	Interest Rate Swap				46619T-AA-0	JFIN CLO 2016 LTD - Sr Seed Nt CIA-1	1	15,000,000	15,002,985
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,200,000	6,199,752	07/22/2014	07/22/2044	Interest Rate Swap				09625J-AW-4	BLUEMOUNTAIN CLO LTD-SERIES 2013-34 CLASS DR	2	6,200,000	6,199,752
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	4,478,376	5,811,241	07/22/2014	07/22/2044	Interest Rate Swap		1,817,417		247358-XT-6	EAI V Delta MSN 15166	1	4,478,376	3,993,824
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,945,845	6,962,000	07/22/2014	07/22/2044	Interest Rate Swap				91754R-ZG-5	STATE BOARD OF REGENTS 0-SERIES JSBR 2017-1 CLASS B	1	6,945,845	6,962,000
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,272,893	5,255,564	07/22/2014	07/22/2044	Interest Rate Swap				78443K-AK-2	SLM STUDENT LOAN TRUST 2-SERIES 06-9 CLASS B	1	5,272,893	5,255,564
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,200,000	15,095,485	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	15,095,485
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,651,787	4,660,678	07/22/2014	07/22/2044	Interest Rate Swap				57643L-FG-6	MASTR ASSET BACKED SECUR-SERIES 2004-OPT2 CLASS A1	1	4,651,787	4,660,678
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,295,000	5,316,768	07/22/2014	07/22/2044	Interest Rate Swap				037666-AG-7	APIDOS CLO-SERIES 17-26A CLASS B	1	5,295,000	5,316,768
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,219,058	13,177,978	07/22/2014	07/22/2044	Interest Rate Swap				38021G-AC-3	GOAL STRUCTURED SOLUTION-SERIES 2016-B CLASS A2	1	13,219,058	13,177,978
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,300,000	16,314,980	07/22/2014	07/22/2044	Interest Rate Swap				33882G-AA-6	FLATIRON CLO LTD-FLAT 2017-1A A	1	16,300,000	16,314,980
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,280,000	16,277,818	07/22/2014	07/22/2044	Interest Rate Swap				150323-AQ-6	CEDAR FUNDING LTD-SERIES 14-4A CLASS BR	1	16,280,000	16,277,818
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,510,000	12,549,682	07/22/2014	07/22/2044	Interest Rate Swap				04943A-AE-9	ATLAS SENIOR LOAN FUND L-SERIES 17-8A CLASS C	1	12,510,000	12,549,682
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,854,780	07/22/2014	07/22/2044	Interest Rate Swap				44330G-AE-3	Highbridge Loan Managem-SERIES 4A-2014 CLASS A2R	1	11,900,000	11,854,780
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,250,000	4,266,248	07/22/2014	07/22/2044	Interest Rate Swap				76761R-AE-9	Reserva Clo Ltd-SERIES 2016-3A CLASS C1	1	4,250,000	4,266,248
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,533,193	07/22/2014	07/22/2044	Interest Rate Swap				87231L-AA-9	TCI-CENT CLO 2016-1 LTD--TCENT 2016-1A A1	1	8,500,000	8,533,193
57629*B10	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	998,414	07/22/2014	07/22/2044	Interest Rate Swap				62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	1,000,000	998,414
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	10,555,804	10,344,968	08/27/2014	08/27/2044	Interest Rate Swap		(155,022)		67092R-AA-6	OCP CLO 2016-12 Ltd-SERIES 16-12A CLASS A1	1	10,555,804	10,499,990
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,077,066	11,211,929	08/27/2014	08/27/2044	Interest Rate Swap				78443G-AJ-4	SLM STUDENT LOAN TRUST 2-SERIES 06-7 CLASS B	1	11,077,066	11,211,929
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,900,000	7,850,262	08/27/2014	08/27/2044	Interest Rate Swap				92916Q-AC-6	VOYA CLO 2017-4 LTD-SERIES 17-4A CLASS B	1	7,900,000	7,850,262
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	15,003,915	08/27/2014	08/27/2044	Interest Rate Swap				14314B-AC-1	CARLYLE GLOBAL MARKET ST-CGMS 2017-1A A2	1	15,000,000	15,003,915
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,560,000	8,570,743	08/27/2014	08/27/2044	Interest Rate Swap				85816B-CQ-1	STEELE CREEK CLO LTD-SERIES 15-1A CLASS BR	1	8,560,000	8,570,743

STATEMENT AS OF SEPTEMBER 30, 2018 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*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,050,000	9,061,964	08/27/2014	08/27/2044	Interest Rate Swap			92912V-AN-5	VOYA CLO LTD-VOYA 2014-2A A1R	1	9,050,000	9,061,964
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	60,500,000	60,369,447	08/27/2014	08/27/2044	Interest Rate Swap	(136,785)		126612-AJ-9	CVP CASCADE CLO LTD-CVPC 2013-CLO1 A1R	1	60,500,000	60,506,232
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	6,800,000	6,618,907	08/27/2014	08/27/2044	Interest Rate Swap	(182,378)		398080-AN-1	GREYWOLF CLO LTD-SERIES 2014-2A CLASS BR	1	6,800,000	6,801,285
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,800,000	6,799,497	08/27/2014	08/27/2044	Interest Rate Swap			00900A-AJ-7	AIMCO-SERIES 14-AA CLASS B1R	1	6,800,000	6,799,497
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,250,000	14,248,205	08/27/2014	08/27/2044	Interest Rate Swap			67112K-AB-5	OOP CLO Ltd-SERIES 18-15A CLASS A2	1	14,250,000	14,248,205
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,600,000	3,600,450	08/27/2014	08/27/2044	Interest Rate Swap			87154E-AQ-3	SYMPHONY CLO LTD-SYMP 2014-15A DR	2	3,600,000	3,600,450
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,100,000	14,112,507	08/27/2014	08/27/2044	Interest Rate Swap			06759Y-AA-3	BARINGS CLO LTD-BABSN 2016-3A A1	1	14,100,000	14,112,507
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,350,000	2,366,213	08/27/2014	08/27/2044	Interest Rate Swap			14954W-AQ-9	BAIN CAPITAL CREDIT CLO -SERIES 2017-2A CLASS CR	1	2,350,000	2,366,213
57629*CB5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,653,184	2,641,497	08/27/2014	08/27/2044	Interest Rate Swap			045487-AA-3	ASSOC BANC-CORP-SR UNSECURED Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	2	2,653,184	2,641,497
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	50,000,000	22,470,402	22,257,582	08/27/2014	08/27/2044	Interest Rate Swap	(214,293)		94949J-AA-3	ALM XIV Ltd-SERIES 14-14A CLASS A1R2	1	22,470,402	22,471,875
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,900,000	15,877,502	08/27/2014	08/27/2044	Interest Rate Swap			74988L-AA-2	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A1	1	15,900,000	15,877,502
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,475,000	16,324,814	08/27/2014	08/27/2044	Interest Rate Swap			06760G-AA-9	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A1	1	16,475,000	16,324,814
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	100,000,000	99,096,580	09/08/2014	09/08/2044	Interest Rate Swap	(583,420)		420860-AA-9	Kingsland VI Ltd-KING 2013-6A AR	1	100,000,000	99,680,000
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,465,000	29,766,933	09/08/2014	09/08/2044	Interest Rate Swap			Z22066-36-8	AUST & NZ BANKING GROUP-SUBORDINATED NOTE	1	21,465,000	29,766,933
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,380,000	11,381,468	09/08/2014	09/08/2044	Interest Rate Swap			55818R-AT-3	MADISON PARK FUNDING LTD-SERIES 14-14A CLASS C1R	1	11,380,000	11,381,468
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,750,000	2,711,055	09/08/2014	09/08/2044	Interest Rate Swap			04015U-AK-4	Ares XXXVIII CLO Ltd-SERIES 2015-38A CLASS CR	1	2,750,000	2,711,055
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,590,000	2,596,014	09/08/2014	09/08/2044	Interest Rate Swap			88433R-AG-7	WIND RIVER CLO LTD-SERIES 17-2A CLASS C1	1	2,590,000	2,596,014
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,473,473	09/08/2014	09/08/2044	Interest Rate Swap			00900L-AJ-3	AIMCO CLO Series 2015-A-SERIES 15-AA CLASS CR	1	2,500,000	2,473,473
57629*CE9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,500,000	10,395,189	09/08/2014	09/08/2044	Interest Rate Swap			14315L-AC-8	Carlyle Global Market St-SERIES 14-38A CLASS A1B	1	10,500,000	10,395,189
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	55,000,000	10,850,000	9,654,055	10/06/2014	10/06/2034	Interest Rate Swap	(1,202,390)		03763Y-AQ-9	APIDOS CLO-APID 2012-11A BR	1	10,850,000	10,856,445
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,100,000	19,855,845	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	19,855,845
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,100,000	20,110,070	10/06/2014	10/06/2034	Interest Rate Swap			77341D-AA-5	Rockford Tower CLO 2017-HOOKT 2017-3A A	1	20,100,000	20,110,070
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,001,165	10/06/2014	10/06/2034	Interest Rate Swap			817176-AS-9	SENECA PARK CLO LTD-SPARK 2014-1A CR	1	5,000,000	5,001,165
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	100,000,000	46,517,415	45,122,161	10/06/2014	10/06/2044	Interest Rate Swap	(940,172)		28108R-AA-0	Edline Student Loan Fund-ESLFT 2017-A A	1	46,517,415	46,062,333
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,192,047	7,206,011	10/06/2014	10/06/2044	Interest Rate Swap			61744C-NB-8	MORGAN STANLEY CAPITAL I-SERIES 2005-HE2 CLASS M1	1	7,192,047	7,206,011
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,900,000	4,907,541	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	4,907,541
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,950,000	2,951,269	10/06/2014	10/06/2044	Interest Rate Swap			13080B-AD-3	SYMPHONY CLO LTD-SERIES 13-12A CLASS CR	1	2,950,000	2,951,269
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	20,005,200	10/06/2014	10/06/2044	Interest Rate Swap			94950G-AC-1	WELLFLEET CLO LTD-WELF 2017-1A A2	1	20,000,000	20,005,200
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,000,000	14,947,950	10/06/2014	10/06/2044	Interest Rate Swap			55952Y-AR-8	Magnetite VIII Ltd-MAGNE 2014-8A BR2	1	15,000,000	14,947,950
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,400,000	4,395,622	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	4,395,622
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	175,000,000	60,000,000	54,829,346	10/10/2014	10/10/2044	Interest Rate Swap	(4,075,714)		67332F-AD-5	RRPF Engine Leasing Ltd Senior Secured	2	60,000,000	58,905,060

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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*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		27,328,755	28,330,500	10/10/2014	10/10/2044	Interest Rate Swap			629394-AA-5	NTC CAPITAL I-UNSECURED BOND	2	27,328,755	28,330,500
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2	125,000,000	80,000,000	77,051,398	11/04/2014	11/04/2044	Interest Rate Swap		(2,947,242)	87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	80,000,000	79,998,640
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		20,951,288	20,512,257	10/10/2014	10/10/2044	Interest Rate Swap			230000-AB-7	NOTE CULLEN/FROST CAP TR II-SUBORDINATED	2	20,951,288	20,512,257
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		20,500,000	20,503,526	10/10/2014	10/10/2044	Interest Rate Swap			09627X-AW-1	BLIEMOUNTAIN CLO LTD-SERIES 2015-1A CLASS A2R	1	20,500,000	20,503,526
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		16,200,000	16,197,327	10/10/2014	10/10/2044	Interest Rate Swap			16409T-AC-3	CHENANGO PARK CLO LTD-SERIES 18-1A CLASS A1B	1	16,200,000	16,197,327
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		16,100,000	16,113,508	10/10/2014	10/10/2044	Interest Rate Swap			873549-AC-3	Taconic Park CLO Ltd 201-SERIES 2016-1A CLASS A2	1	16,100,000	16,113,508
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		7,000,000	7,001,827	10/10/2014	10/10/2044	Interest Rate Swap			38862E-AB-0	GRIPPEN PARK CLO LTD-SERIES 17-1A CLASS B	1	7,000,000	7,001,827
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		3,554,771	3,551,356	10/10/2014	10/10/2044	Interest Rate Swap			26251B-AN-6	Dryden XVIII Senior Loa-DRSLF 2013-2BA AZLR	1	3,554,771	3,551,356
57629*CJ8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	2		6,068,731	6,767,855	10/10/2014	10/10/2044	Interest Rate Swap			78442G-RC-2	SLMA 2005-9 STUDENT LN-BKD NT CL B	1	6,068,731	6,767,855
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	80,000,000	77,051,398	11/04/2014	11/04/2044	Interest Rate Swap		(2,947,242)	87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	80,000,000	79,998,640
57629*CK5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		50,000,000	50,005,800	11/04/2014	11/04/2044	Interest Rate Swap			04964W-AL-9	ATRIUM CDO CORP-ATRM 11A A1R	1	50,000,000	50,005,800
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	65,000,000	62,091,716	11/04/2014	11/04/2044	Interest Rate Swap		(2,924,339)	949496-AC-7	WELFLEET CLO 2015-1 LTD-SR SECD NT CL A-1 144A	1	65,000,000	65,016,055
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		38,750,000	38,750,504	11/04/2014	11/04/2044	Interest Rate Swap			67106J-AQ-3	CHA CREDIT PARTNERS LTD-OAKC 2014-10A BR	1	38,750,000	38,750,504
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,445,000	22,408,751	11/04/2014	11/04/2044	Interest Rate Swap			08181J-AA-0	Benefit Street Partners -SERIES 18-5BA CLASS A1A	1	22,445,000	22,408,751
57629*CL3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,000,000	1,000,000	11/04/2014	11/04/2044	Interest Rate Swap			48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2	1	1,000,000	1,000,000
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	50,000,000	47,274,435	11/04/2014	11/04/2044	Interest Rate Swap		(2,741,115)	67106J-AN-0	CHA CREDIT PARTNERS LTD-OAKC 2014-10A AR	1	50,000,000	50,015,550
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		45,977,608	45,726,162	11/04/2014	11/04/2044	Interest Rate Swap			42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	45,977,608	45,726,162
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,000,000	30,060,540	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	30,060,540
57629*CM1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,200,000	1,200,000	11/04/2014	11/04/2044	Interest Rate Swap			48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2	1	1,200,000	1,200,000
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	14,404,435	11,256,583	11/04/2014	11/04/2044	Interest Rate Swap		(2,718,212)	66776M-ZZ-9	ORANGE GROVE ENERGY, L.P DELAYED DRAW TE	2	14,404,435	13,974,795
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,170,981	3,759,309	11/04/2014	11/04/2044	Interest Rate Swap			247358-BB-9	EAIV Delta MSN 15153	1	4,170,981	3,759,309
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,057,609	3,649,413	11/04/2014	11/04/2044	Interest Rate Swap			247358-DD-3	EAIV Delta MSN 15161	1	4,057,609	3,649,413
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,180,340	3,770,879	11/04/2014	11/04/2044	Interest Rate Swap			247358-PP-3	EAIV Delta MSN 15147	1	4,180,340	3,770,879
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,180,505	3,679,497	11/04/2014	11/04/2044	Interest Rate Swap			247358-RR-7	EAIV 2017 Delta MSN 15146	1	4,180,505	3,679,497
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,057,609	3,649,413	11/04/2014	11/04/2044	Interest Rate Swap			247358-RW-6	EAIV Delta MSN 15162	1	4,057,609	3,649,413
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		47,153,112	47,696,882	11/04/2014	11/04/2044	Interest Rate Swap			83416T-RR-3	Arpad Solar Borrower LLC Term Loan	2	47,153,112	47,696,882
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		26,700,000	26,702,777	11/04/2014	11/04/2044	Interest Rate Swap			291080-AY-8	EMERSON PARK CLO LTD-SERIES 13-1A	1	26,700,000	26,702,777
57629*CN9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,500,000	22,088,250	11/04/2014	11/04/2044	Interest Rate Swap			G1093*-AA-7	BIF III SAFE HARBOR HOLDINGS LLC	2	22,500,000	22,088,250
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	48,000,000	45,425,857	11/04/2014	11/04/2044	Interest Rate Swap		(2,649,503)	04964K-AL-5	ATRIUM CDO CORP-SERIES 9A CLASS AR	1	48,000,000	48,075,360
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		28,500,000	28,497,663	11/04/2014	11/04/2044	Interest Rate Swap			05682V-AA-3	BAIN CAPITAL CREDIT CLO -SERIES 18-2A CLASS A1	1	28,500,000	28,497,663
57629*CP4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		53,704,761	54,026,435	11/04/2014	11/04/2044	Interest Rate Swap			13345*-AA-5	CAMERON LNG CONSTRUCTION FA	1	53,704,761	54,026,435
57629*CO2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	72,000,000	69,497,348	11/04/2014	11/04/2044	Interest Rate Swap		(2,512,084)	46617N-AQ-0	JFIN CLO LTD-SERIES 14-2A CLASS A1AR	1	72,000,000	72,009,432

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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*CO2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		37,400,000	37,774,000	11/04/2014	11/04/2044	Interest Rate Swap			74982*-AB-1	RXR Realty, LLC Senior Secured	2	37,400,000	37,774,000
57629*CO2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,490,000	10,490,000	11/04/2014	11/04/2044	Interest Rate Swap			40437L-AG-7	HPS Loan Management 13-2-HLM 13A-18	1	10,490,000	10,490,000
57629*CO2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,300	11/04/2014	11/04/2044	Interest Rate Swap			40436Q-AL-6	HPS Loan Management 9-20-HLM 9A-2016 A1BR	1	10,000,000	9,999,300
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	16,600,000	14,023,330	11/04/2014	11/04/2044	Interest Rate Swap		(2,534,987)	92915P-AK-1	Voya CLO 2014-1 Ltd-INGIM 2014-1A ABR2	1	16,600,000	16,558,317
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,660,000	13,675,914	11/04/2014	11/04/2044	Interest Rate Swap			05363U-AW-3	AVERY POINT IV CLO LTD-SERIES 14-1A CLASS CR	1	13,660,000	13,675,914
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,660,000	13,695,530	11/04/2014	11/04/2044	Interest Rate Swap			04964K-AS-0	ATRIUM CDO CORP-SERIES 9A CLASS CR	1	13,660,000	13,695,530
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	11,792,079	11/04/2014	11/04/2044	Interest Rate Swap			67332F-AH-6	FRPF Engine Leasing Ltd Senior Secured	2	13,000,000	11,792,079
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,998,640	11/04/2014	11/04/2044	Interest Rate Swap			04941Y-AJ-8	Atlas Senior Loan Fund X-ATLO 2018-11A B	1	10,000,000	9,998,640
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		30,000,000	30,028,890	11/04/2014	11/04/2044	Interest Rate Swap			87806L-AC-0	TCI-CENT CLO 2016-1 LTD-SERIES 17-1A CLASS A1	1	30,000,000	30,028,890
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	20,023,880	11/04/2014	11/04/2044	Interest Rate Swap			12550Y-AC-8	CIFC FUNDING LTD-CIFC 2017-2A A	1	20,000,000	20,023,880
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,205,877	9,925,872	11/04/2014	11/04/2044	Interest Rate Swap			035242-AP-1	ANHEUSER-BUSCH INBEV FIN GTD NT	2	10,205,877	9,925,872
57629*CR0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,798,062	1,732,666	11/04/2014	11/04/2044	Interest Rate Swap			664397-AK-2	EVERSOURCE ENERGY-UNSECURED NOTE MADISON PARK FUNDING LTD-SERIES	2	1,798,062	1,732,666
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	12,740,000	10,253,507	11/04/2014	11/04/2044	Interest Rate Swap		(2,489,181)	55818X-AV-9	2015-16A CLASS A2R	1	12,740,000	12,742,688
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,675,000	12,676,027	11/04/2014	11/04/2044	Interest Rate Swap			55953E-AJ-9	MAGNETITE CLO LTD-SERIES 14-11A CLASS A1R	1	12,675,000	12,676,027
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,240,000	12,239,816	11/04/2014	11/04/2044	Interest Rate Swap			03766G-AE-2	APIDOS CLO-SERIES 17-26A CLASS A2	1	12,240,000	12,239,816
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,980,000	11,993,250	11/04/2014	11/04/2044	Interest Rate Swap			149420-AE-1	CATSKILL PARK CLO LTD-SERIES 17-1A CLASS A2	1	11,980,000	11,993,250
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,995,026	11/04/2014	11/04/2044	Interest Rate Swap			88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	5,000,000	4,995,026
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,100,000	21,143,107	11/04/2014	11/04/2044	Interest Rate Swap			48250L-AL-3	KKR FINANCIAL CLO LTD-SERIES 9 CLASS AR	1	21,100,000	21,143,107
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,100,000	23,038,415	11/04/2014	11/04/2044	Interest Rate Swap			24824T-AQ-3	Denali Capital CLO XII L-DEV12 2016-1A A1R	1	23,100,000	23,038,415
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,250,000	10,217,005	11/04/2014	11/04/2044	Interest Rate Swap			443300-AB-7	Highbridge Loan Managem-SERIES 12A-18 CLASS A1B	1	10,250,000	10,217,005
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,100,000	18,140,164	11/04/2014	11/04/2044	Interest Rate Swap			40436V-AA-9	HIGHBRIDGE LOAN MANAGEM-HLM 11A-17A	1	18,100,000	18,140,164
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	39,886,346	28,590,746	12/16/2014	12/16/2044	Interest Rate Swap		(12,083,963)	39808C-A8-4	GRIDIRON FDG LLC Term Facility	2	39,886,346	40,674,709
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		26,882,610	26,324,083	12/16/2014	12/16/2044	Interest Rate Swap			66704J-CB-2	NORTHSTAR EDUCATION FINA-SERIES 07-1 CLASS B	1	26,882,610	26,324,083
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,445,885	11,209,453	12/16/2014	12/16/2044	Interest Rate Swap			05874P-AE-6	BALLYROCK LTD-SERIES 2013-1A CLASS C	1	11,445,885	11,209,453
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,980,000	12/16/2014	12/16/2044	Interest Rate Swap			03331J-AA-0	Anchorage Capital CLO Lt-ANHC 2018-10A A1A	1	20,000,000	19,980,000
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,200,000	16,120,895	12/16/2014	12/16/2044	Interest Rate Swap			06760J-AE-5	Barings CLO Ltd 2018-II-SERIES 2018-2A CLAS A1B	1	16,200,000	16,120,895
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,702,566	12/16/2014	12/16/2044	Interest Rate Swap			06760B-AC-6	BABSON CLO LTD-SERIES 17-1A CLASS A2	1	6,700,000	6,702,566
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,960,000	4,970,952	12/16/2014	12/16/2044	Interest Rate Swap			55820R-AE-2	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS B	1	4,960,000	4,970,952
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,575,000	2,562,316	12/16/2014	12/16/2044	Interest Rate Swap			08179H-AC-4	Benefit Street Partners -BSP 2017-12A B	1	2,575,000	2,562,316
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,057,437	10,002,990	12/16/2014	12/16/2044	Interest Rate Swap			38137Q-AA-6	GOLDENTREE LOAN OPPORTUN-SERIES 14-9A CLASS AR	1	10,057,437	10,002,990
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,100,000	8,115,633	12/16/2014	12/16/2044	Interest Rate Swap			001626-AC-4	ALM XIX Ltd SR SECD NT CL A-2	1	8,100,000	8,115,633

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STATEMENT AS OF SEPTEMBER 30, 2018 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*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,425,000	6,368,492	12/16/2014	12/16/2044	Interest Rate Swap			08180X-AQ-5	Benefit Street Partners -BSP 2015-8A A1BR	1	6,425,000	6,368,492
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,257,623	8,199,992	12/16/2014	12/16/2044	Interest Rate Swap			67092R-AB-4	OPC CLO 2016-12 Ltd-SERIES 2016-12A CLASS A2	1	8,257,623	8,199,992
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	150,000,000	24,662,500	12,640,370	12/16/2014	12/16/2044	Interest Rate Swap		(12,359,630)	144577-TT-0	Carrix, Inc. Senior Term Loa	2	24,662,500	25,000,000
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,470,000	14,486,206	12/16/2014	12/16/2044	Interest Rate Swap			55820R-AC-6	MADISON PARK FUNDING LTD-SERIES 17-25A CLASS A2	1	14,470,000	14,486,206
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		34,915,536	34,996,430	12/16/2014	12/16/2044	Interest Rate Swap			04941Y-AC-3	Atlas Senior Loan Fund X-SERIES 18-11A CLASS A1L	1	34,915,536	34,996,430
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,341,459	6,297,446	12/16/2014	12/16/2044	Interest Rate Swap			92557W-AE-3	VIBRANT CLO IV LTD-SR SEC2 NT CL B 144A	1	6,341,459	6,297,446
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		65,000,000	64,997,725	12/16/2014	12/16/2044	Interest Rate Swap			04624H-AC-1	ASSURANT CLO III LTD-SERIES 2018-2A CLASS A	1	65,000,000	64,997,725
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,433,629	9,498,794	12/16/2014	12/16/2044	Interest Rate Swap			48252W-AC-7	KKR CLO LTD 22-SERIES 22A CLASS B	1	9,433,629	9,498,794
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,000,000	7,002,765	12/16/2014	12/16/2044	Interest Rate Swap			05618D-AN-4	BABSON CLO LTD-BABSN 2014-1A BR	1	7,000,000	7,002,765
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,045,000	2,031,736	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	2,031,736
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,858,165	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	3,858,165
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	36,000,000	15,727,896	12/16/2014	12/16/2044	Interest Rate Swap		(20,002,104)	39808C-AA-3	Gridiron Fdg LLC Sr Secd Nt	2	36,000,000	35,730,000
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,900,000	25,864,543	12/16/2014	12/16/2044	Interest Rate Swap			14307P-AE-5	Carlyle Global Market St-SERIES C17A CLASS A1BR	1	25,900,000	25,864,543
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,500,000	23,500,329	12/16/2014	12/16/2044	Interest Rate Swap			05618D-AL-8	BABSON CLO LTD-BABSN 2014-1A A2R	1	23,500,000	23,500,329
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,100,000	23,124,116	12/16/2014	12/16/2044	Interest Rate Swap			83610K-AA-1	SOUND POINT CLO LTD-SERIES 2017-2A CLASS A	1	23,100,000	23,124,116
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,766,014	12/16/2014	12/16/2044	Interest Rate Swap			50184K-AU-2	LGM LTD PARTNERSHIP-SERIES 13A CLASS BR	1	12,750,000	12,766,014
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		15,089,088	14,858,890	12/16/2014	12/16/2044	Interest Rate Swap			88576P-AE-3	321 HENDERSON RECEIVABLE-SERIES 05-1A CLASS A1	1	15,089,088	14,858,890
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,600,000	22,602,305	12/16/2014	12/16/2044	Interest Rate Swap			09627R-AJ-3	BLUEMOUNTAIN CLO LTD-BLUEM 2014-3A A1R	1	22,600,000	22,602,305
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		20,000,000	19,999,680	12/16/2014	12/16/2044	Interest Rate Swap			58806P-AC-2	MERCER FIELD CLO LP-MERCL 2017-1A A2	1	20,000,000	19,999,680
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,500,000	10,500,830	12/16/2014	12/16/2044	Interest Rate Swap			03765D-AS-9	APIDOS CLO-APID 2014-18A BR	1	10,500,000	10,500,830
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,470,402	22,471,875	12/16/2014	12/16/2044	Interest Rate Swap			94949J-AA-3	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	1	22,470,402	22,471,875
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,950,000	5,957,878	12/16/2014	12/16/2044	Interest Rate Swap			10302V-BG-9	BOWMAN PARK CLO LTD-BOWPK 2014-1A CR	1	5,950,000	5,957,878
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,112,435	13,032,422	12/16/2014	12/16/2044	Interest Rate Swap			87230A-AA-4	TCI-FLATIRON CLO 2016-1 LTD SR SEC2 NT CL A	1	13,112,435	13,032,422
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,690,000	14,690,353	12/16/2014	12/16/2044	Interest Rate Swap			817176-AL-4	SENECA PARK CLO LTD-SPARK 2014-1A AR	1	14,690,000	14,690,353
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,503,537	12/16/2014	12/16/2044	Interest Rate Swap			38136F-AG-8	Goldentree Loan Managem-GLM 2017-1A B1	1	13,500,000	13,503,537
57629*CIW9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,100,000	10,962,438	12/16/2014	12/16/2044	Interest Rate Swap			12481Q-AE-5	Obam 2018-5 Ltd-SERIES 18-5A CLASS B1	1	11,100,000	10,962,438
57629*CV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	250,000,000	328,073,426	295,877,275	12/16/2014	12/16/2044	Interest Rate Swap		(20,875,050)	57542Z-AQ-7	REVENUE NT	1	328,073,426	316,752,325
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	200,000,000	16,900,000	(142,433)	12/16/2014	12/16/2044	Interest Rate Swap		(17,067,597)	03328Q-AN-1	ANCHORAGE CAPITAL CLO LT-SERIES 2015-6A CLASS AR	1	16,900,000	16,925,164
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,380	12/16/2014	12/16/2044	Interest Rate Swap			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	5,000,000	4,999,380
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,780,000	6,739,598	12/16/2014	12/16/2044	Interest Rate Swap			33882G-AB-4	FLATIRON CLO LTD-FLAT 2017-1A B	1	6,780,000	6,739,598
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,750,000	9,753,686	12/16/2014	12/16/2044	Interest Rate Swap			36361U-AC-4	GALLATIN CLO LTD-SERIES 17-1A CLASS B	1	9,750,000	9,753,686

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STATEMENT AS OF SEPTEMBER 30, 2018 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*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,400,000	10,400,000	12/16/2014	12/16/2044	Interest Rate Swap			67115W-AE-0	QHA Credit Funding 1 LTD-SERIES 18-1A CLASS A2	1	10,400,000	10,400,000
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,220,000	22,231,888	12/16/2014	12/16/2044	Interest Rate Swap			83609J-AA-7	SOUND POINT CLO XI LTD-SR SEC0 NT CL A 144A	1	22,220,000	22,231,888
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,675,000	9,685,894	12/16/2014	12/16/2044	Interest Rate Swap			08179H-AA-8	BENEFIT STREET PARTNERS -SERIES 2017-12A CLASS A1	1	9,675,000	9,685,894
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,500,000	8,499,864	12/16/2014	12/16/2044	Interest Rate Swap			78109Q-AE-8	PRR 2 LTD-SERIES 17-2A CLASS A2	1	8,500,000	8,499,864
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		17,120,000	17,149,429	12/16/2014	12/16/2044	Interest Rate Swap			674000-AN-4	OAKTREE CLO LTD-SERIES 14-1A CLASS A1R	1	17,120,000	17,149,429
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,075,000	19,046,388	12/16/2014	12/16/2044	Interest Rate Swap			14315J-NN-5	Carlyle US CLO 2013-3 Re Term Loan	1	19,075,000	19,046,388
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,600,000	16,600,797	12/16/2014	12/16/2044	Interest Rate Swap			05874P-AC-0	BALLYROCK LTD-SERIES 2013-1A CLASS B	1	16,600,000	16,600,797
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		56,000,000	54,067,562	12/16/2014	12/16/2044	Interest Rate Swap			57542Z-AO-7	MASSMUTUAL ASSET FIN LLC SR SEC0 REV NT	1	56,000,000	54,067,562
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,400,000	6,305,254	12/16/2014	12/16/2044	Interest Rate Swap			00900L-AH-7	AIMCO CLO Series 2015-A-SERIES 15-AA CLASS BR	1	6,400,000	6,305,254
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,570,000	13,570,176	12/16/2014	12/16/2044	Interest Rate Swap			55818R-AS-5	MADISON PARK FUNDING LTD-SERIES 14-14A CLASS BR	1	13,570,000	13,570,176
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,100,000	(10,399,525)	02/05/2015	02/05/2045	Interest Rate Swap		(20,499,374)	50181G-AS-9	LOM LTD PARTNERSHIP-SERIES 16A CLASS BR	1	10,100,000	10,099,849
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,020,000	10,047,254	02/05/2015	02/05/2045	Interest Rate Swap			92912V-AS-4	VOYA CLO LTD-VOYA 2014-2A BR	1	10,020,000	10,047,254
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,508,430	10,475,179	02/05/2015	02/05/2045	Interest Rate Swap			56475Y-OB-7	MANUF & TRADERS TRUST CO-SUBORDINATED NOTE	1	10,508,430	10,475,179
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,521,695	02/05/2015	02/05/2045	Interest Rate Swap			87806L-AE-6	TCI-CENT CLO 2016-1 LTD.-SERIES 17-1A CLASS A2	1	13,500,000	13,521,695
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,500,000	13,515,890	02/05/2015	02/05/2045	Interest Rate Swap			06760B-AE-2	BABSON CLO LTD-SERIES 17-1A CLASS B1	1	13,500,000	13,515,890
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,700,000	12,700,584	02/05/2015	02/05/2045	Interest Rate Swap			398080-AL-5	GREYWOLF CLO LTD-SERIES 2014-2A CLASS A2R	1	12,700,000	12,700,584
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,700,000	12,709,881	02/05/2015	02/05/2045	Interest Rate Swap			40436X-AE-7	HIGHBRIDGE LOAN MANAGEME-SERIES 2014 CLAS A2R	1	12,700,000	12,709,881
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,400,000	11,450,958	02/05/2015	02/05/2045	Interest Rate Swap			14954W-AN-6	BAIN CAPITAL CREDIT CLO -SERIES 17-2A CLASS BR	1	11,400,000	11,450,958
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,211,592	02/05/2015	02/05/2045	Interest Rate Swap			05682Q-AC-0	BAIN CAPITAL CREDIT CLO -SERIES 17-1A CLASS A1	1	11,200,000	11,211,592
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,853,505	02/05/2015	02/05/2045	Interest Rate Swap			09628J-AN-1	BlueMountain CLO 2015-3 -BLUEM 2015-3A A2R	1	13,900,000	13,853,505
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,300,000	11,300,124	02/05/2015	02/05/2045	Interest Rate Swap			053633-AH-6	AVERY POINT CLO LTD-SERIES 13-3A CLASS B1R	1	11,300,000	11,300,124
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,734,374	6,606,242	02/05/2015	02/05/2045	Interest Rate Swap			00287Y-AL-3	AbbVie Inc-SENIOR UNSECURED NOTE	2	6,734,374	6,606,242
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,400,000	7,282,680	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	7,282,680
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,085,000	1,083,249	02/05/2015	02/05/2045	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	1,085,000	1,083,249
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	5,280,000	(15,388,281)	02/05/2015	02/05/2045	Interest Rate Swap		(20,685,135)	00900C-AE-4	AIMCO-AIMCO 2017-AA C	1	5,280,000	5,296,854
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		19,072,126	19,074,110	02/05/2015	02/05/2045	Interest Rate Swap			053633-AG-8	AVERY POINT CLO LTD-SERIES 13-3A CLASS AR	1	19,072,126	19,074,110
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		32,100,000	32,100,514	02/05/2015	02/05/2045	Interest Rate Swap			05363U-AU-7	AVERY POINT IV CLO LTD-SERIES 14-1A CLASS BR	1	32,100,000	32,100,514
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		24,654,011	24,226,503	02/05/2015	02/05/2045	Interest Rate Swap			66704J-AY-4	NORTHSTAR EDUCATION FINA-SERIES 2004-1 CLASS B1	1	24,654,011	24,226,503
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,000,000	26,865,270	02/05/2015	02/05/2045	Interest Rate Swap			75887X-AA-5	Regatta Funding Ltd.-REG11 2018-1A	1	27,000,000	26,865,270
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,900,000	11,842,975	02/05/2015	02/05/2045	Interest Rate Swap			449258-AA-0	1CG US CLO 2018-1 LTD-SERIES 2018-1A CLASS A1	1	11,900,000	11,842,975
57629*CV1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,266,138	5,165,512	02/05/2015	02/05/2045	Interest Rate Swap			00507U-AS-0	ACTAVIS FUNDING SCS-SENIOR UNSECURED NOTE	2	5,266,138	5,165,512

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STATEMENT AS OF SEPTEMBER 30, 2018 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

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

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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*CZ2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,507,931	10,446,191	02/05/2015	02/05/2045	Interest Rate Swap			64131B-AB-9	Neuberger Berman CLO XXI-SERIES 2016-22A CLASS B	1	10,507,931	10,446,191
57629*CZ2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,200,000	11,199,910	02/05/2015	02/05/2045	Interest Rate Swap			17181T-AC-5	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A2	1	11,200,000	11,199,910
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	24,425,000	3,906,353	02/05/2015	02/05/2045	Interest Rate Swap		(20,521,090)	14315J-TT-6	Carlyle US CLO 2015-1 Ri Term Loan	1	24,425,000	24,427,443
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		27,200,000	27,202,666	02/05/2015	02/05/2045	Interest Rate Swap			55818R-AQ-9	MADISON PARK FUNDING LTD-MDPK 2014-14A ATR	1	27,200,000	27,202,666
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,600,000	11,562,706	02/05/2015	02/05/2045	Interest Rate Swap			04942J-AE-1	Atlas Senior Loan Fund X-ATCLO 2018-10A B	1	11,600,000	11,562,706
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		18,090,000	18,138,970	02/05/2015	02/05/2045	Interest Rate Swap			77340E-AC-0	ROCKFORD TOWER CLO LTD-ROCKT 2017-1A B	1	18,090,000	18,138,970
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,730,000	5,734,865	02/05/2015	02/05/2045	Interest Rate Swap			64129J-AU-4	NEUBERGER BERMAN CLO LTD-NEUB 2013-14A BTR	1	5,730,000	5,734,865
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,900,000	25,737,529	02/05/2015	02/05/2045	Interest Rate Swap			04016V-AC-9	ARES XLVII CLO Ltd-SERIES 18-47A CLASS A2	1	25,900,000	25,737,529
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,300,000	4,316,809	02/05/2015	02/05/2045	Interest Rate Swap			87248T-AE-5	TICP CLO LTD-SERIES 2017 CLASS 7A OCP CLO 2017-14 Ltd-SERIES 17-14A CLASS A2	1	4,300,000	4,316,809
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,400,000	11,327,507	02/05/2015	02/05/2045	Interest Rate Swap			67097Q-AE-5	Benefit Street Partners -SERIES 18-14A CLASS A2	1	11,400,000	11,327,507
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,400,000	13,228,480	02/05/2015	02/05/2045	Interest Rate Swap			08179L-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	13,400,000	13,228,480
57629*DA6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,380	02/05/2015	02/05/2045	Interest Rate Swap			94950J-AC-5	BAIN CAPITAL CREDIT CLO -SERIES 2017-2A CLASS AR	1	5,000,000	4,999,380
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	45,000,000	24,213,883	02/05/2015	02/05/2045	Interest Rate Swap		(20,822,117)	05683H-AC-9	MAGNETITE CLO LTD-SERIES 17-19A CLASS B	1	45,000,000	45,036,000
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,325,000	7,343,503	02/05/2015	02/05/2045	Interest Rate Swap			06760E-AA-4	VOYA CLO LTD-SERIES 2017-3A CLASS A2	1	7,325,000	7,343,503
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,200,000	7,212,629	02/05/2015	02/05/2045	Interest Rate Swap			92915Q-AG-8	HPS Loan Management 9-20-HLM 9A-2016 A2R	1	7,200,000	7,212,629
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,750,000	12,748,955	02/05/2015	02/05/2045	Interest Rate Swap			40436Q-AN-2	AIMCO-SERIES 14-AA CLASS B1R	1	12,750,000	12,748,955
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,999,408	02/05/2015	02/05/2045	Interest Rate Swap			00900A-AJ-7	TICP CLO Ltd-TICP 2018-11A A	1	8,000,000	7,999,408
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		25,000,000	25,000,000	02/05/2015	02/05/2045	Interest Rate Swap			87249Q-AA-8	Babson CLO Ltd 2013-I-SERIES 2013-1A CLASS AR	1	25,000,000	25,000,000
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,425,000	14,361,790	02/05/2015	02/05/2045	Interest Rate Swap			06760E-AA-4	Statoil ASA-SENIOR UNSECURED NOTE -BLUEMOUNTAIN CLO 2015-1 LTD-SR SEC DEF NT CL C	1	14,425,000	14,361,790
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		21,132,368	24,521,123	02/05/2015	02/05/2045	Interest Rate Swap			24820R-AA-6	Grupo Aeromexico S.A.B. Floating Rate S	1	21,132,368	24,521,123
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,685,451	2,700,734	02/05/2015	02/05/2045	Interest Rate Swap			09627X-AG-6	SMB PRIVATE ED LN TR 201-SMB PRIVATE ED LN TR 2016-A NT	2	2,685,451	2,700,734
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	12,586,419	(685,638)	12/05/2016	12/05/2046	Interest Rate Swap		(13,411,511)	MXP001-TT-1	NAVIENT STUDENT LOAN TRU-SERIES 16-2 CLASS A3	1	12,586,419	12,725,873
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,966,064	24,757,084	12/05/2016	12/05/2046	Interest Rate Swap			78449F-AC-5	ECMC GROUP STUDENT LOAN -SERIES 2016-1A CLASS A	1	23,966,064	24,757,084
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		22,420,000	23,367,734	12/05/2016	12/05/2046	Interest Rate Swap			63940F-AC-1	BABSON CLO LTD-BABSN 2014-11A BR	1	22,420,000	23,367,734
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,386,977	11,608,651	12/05/2016	12/05/2046	Interest Rate Swap			26827X-AA-1	VOYA CLO LTD-VOYA 2017-1A A2	1	11,386,977	11,608,651
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,250,000	13,250,411	12/05/2016	12/05/2046	Interest Rate Swap			05618L-AG-1	BABSON CLO LTD-BABSN 2014-11A AR	1	13,250,000	13,250,411
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,500,000	11,502,967	12/05/2016	12/05/2046	Interest Rate Swap			92916M-AB-7	Oak Hill Credit Partners-SERIES 15-12A CLASS A2R	1	11,500,000	11,502,967
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,000,000	11,000,440	12/05/2016	12/05/2046	Interest Rate Swap			05618L-AF-3	STEELE GREEK CLO LTD-SERIES 15-1A CLASS CR	1	11,000,000	11,000,440
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,820	12/05/2016	12/05/2046	Interest Rate Swap			67109Y-AN-4	Benefit Street Partners -BSP 2015-8A BR	1	10,000,000	9,999,820
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,330,000	4,343,419	12/05/2016	12/05/2046	Interest Rate Swap			85816B-CS-7		1	4,330,000	4,343,419
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,200,000	4,143,859	12/05/2016	12/05/2046	Interest Rate Swap			08180X-AU-6		1	4,200,000	4,143,859

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STATEMENT AS OF SEPTEMBER 30, 2018 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*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,380,000	4,387,258	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	4,387,258
57629*DK4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,570	12/05/2016	12/05/2046	Interest Rate Swap			04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	9,999,570
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,924,783	(2,341,577)	12/05/2016	12/05/2046	Interest Rate Swap		(13,387,403)	MXP001-TT-1	Grupo Aeromexico S.A.B. Floating Rate S	1	10,924,783	11,045,826
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,058,093	14,293,423	12/05/2016	12/05/2046	Interest Rate Swap			78442G-PQ-3	SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS A4	1	14,058,093	14,293,423
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,675,314	2,683,968	12/05/2016	12/05/2046	Interest Rate Swap			49327H-AG-0	KEYCORP STUDENT LOAN TRU-SERIES 2006-A CLASS 2A4	1	2,675,314	2,683,968
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,448,580	9,571,234	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BR-1	MELNET STUDENT LOAN TRUS-SERIES 2005-1 CLASS A5	1	9,448,580	9,571,234
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,965,828	12,177,951	12/05/2016	12/05/2046	Interest Rate Swap			78448Q-AD-0	SMB PRIVATE EDUCATION LC-SMB 2015-B A3	1	11,965,828	12,177,951
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,743,929	11,234,613	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	10,743,929	11,234,613
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,426,372	5,499,206	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EX-0	SLM STUDENT LOAN TRUST-SERIES 2002-7CLASS A11	1	5,426,372	5,499,206
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,618,569	10,720,934	12/05/2016	12/05/2046	Interest Rate Swap			10620N-AX-6	BRAZOS HIGHER EDUCATION -SER 2006-2 STUDENT LN REV NT	1	10,618,569	10,720,934
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,902,330	8,053,185	12/05/2016	12/05/2046	Interest Rate Swap			64031Q-BX-8	MELNET STUDENT LOAN TRUS-SERIES 2005-2 CLASS A5	1	7,902,330	8,053,185
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,816,986	10,141,563	12/05/2016	12/05/2046	Interest Rate Swap			83715R-AF-9	SOUTH CAROLINA STUDENT L-SERIES 14-1 CLASS A2	1	9,816,986	10,141,563
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,691,280	3,680,667	12/05/2016	12/05/2046	Interest Rate Swap			00432C-AV-3	ACCESS GROUP INC-SERIES 2003-A CLASS A3	1	3,691,280	3,680,667
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,002,310	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	5,002,310
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,000,000	12,999,714	12/05/2016	12/05/2046	Interest Rate Swap			75887X-AC-1	ROCKALL CLO BV Variable Funding Note- USD	1	13,000,000	12,999,714
57629*DJK	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	1	4,626,289	4,626,289
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,300,000	4,313,833	12/05/2016	12/05/2046	Interest Rate Swap			92558A-AA-8	CLASS A CIFC Funding 2018-I Ltd-SERIES 18-	1	4,300,000	4,313,833
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,350,000	7,258,301	12/05/2016	12/05/2046	Interest Rate Swap			12551R-AC-2	2016-6A CLASS A3	1	7,350,000	7,258,301
57629*DJK	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,995,026	12/05/2016	12/05/2046	Interest Rate Swap			88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	5,000,000	4,995,026
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	16,263,029	2,739,990	12/05/2016	12/05/2046	Interest Rate Swap		(13,703,228)	MXP001-TT-1	Grupo Aeromexico S.A.B. Floating Rate S	1	16,263,029	16,443,218
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		65,300,000	67,730,512	12/05/2016	12/05/2046	Interest Rate Swap			63940L-AC-8	NAVIENT STUDENT LOAN TRU-SERIES 2016-6A CLASS A3	1	65,300,000	67,730,512
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		23,085,786	23,779,643	12/05/2016	12/05/2046	Interest Rate Swap			61205P-AL-3	MONTANA HIGHER EDUCATION-SERIES 12-1 CLASS A3	1	23,085,786	23,779,643
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	9,999,570	12/05/2016	12/05/2046	Interest Rate Swap			04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	9,999,570
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		896,602	901,060	12/05/2016	12/05/2046	Interest Rate Swap			78442G-EW-2	SLM STUDENT LOAN TRUST-SERIES 2002-7 CLASS A10	1	896,602	901,060
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,818,264	1,777,401	12/05/2016	12/05/2046	Interest Rate Swap			429827-AK-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A10	1	1,818,264	1,777,401
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,183,564	1,175,688	12/05/2016	12/05/2046	Interest Rate Swap			429827-AP-3	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A14	1	1,183,564	1,175,688
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,096,138	1,126,008	12/05/2016	12/05/2046	Interest Rate Swap			429827-AB-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A2	1	1,096,138	1,126,008
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,864,014	1,912,669	12/05/2016	12/05/2046	Interest Rate Swap			83715A-AJ-8	SOUTH CAROLINA STUDENT L-SR UNSECURED	1	1,864,014	1,912,669
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,657,935	1,782,583	12/05/2016	12/05/2046	Interest Rate Swap			784427-AF-3	SLC STUDENT LN TR 2006-1 ASSET BK NT CL A-6	1	1,657,935	1,782,583
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,692,495	1,710,733	12/05/2016	12/05/2046	Interest Rate Swap			64033Q-AC-3	MELNET STUDENT LOAN TRUS-SERIES 2015-2A CLASS B	1	1,692,495	1,710,733
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,861,340	1,940,904	12/05/2016	12/05/2046	Interest Rate Swap			46259Q-JT-8	IOWA STUDENT LOAN LIQUID-SERIES 2012-1 CLASS B	1	1,861,340	1,940,904

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STATEMENT AS OF SEPTEMBER 30, 2018 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*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,438,091	1,421,508	12/05/2016	12/05/2046	Interest Rate Swap			709163-GJ-2	PENNSYLVANIA ST HGR EDU -SERIES 2006 CL B	1	1,438,091	1,421,508
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,120,670	1,169,060	12/05/2016	12/05/2046	Interest Rate Swap			17284L-AB-0	CIT EDUCATION LOAN TRUST-SERIES 2007-1 CLASS B	1	1,120,670	1,169,060
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,340,080	1,345,078	12/05/2016	12/05/2046	Interest Rate Swap			78448C-AH-2	SLM STUDENT LOAN TRUST-SERIES 2013-6 CLASS B	1	1,340,080	1,345,078
57629*DH1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	3,959,988	12/05/2016	12/05/2046	Interest Rate Swap			056162-AS-9	Babson CLO Ltd 2015-1-BABSN 2015-1A CR	1	4,000,000	3,959,988
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	13,655,979	106,466	12/05/2016	12/05/2046	Interest Rate Swap		(13,700,817)	MXP001-TT-1	Grupo Aeromexico S.A.B. Floating Rate S	1	13,655,979	13,807,283
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,281,851	6,531,085	12/05/2016	12/05/2046	Interest Rate Swap			78448R-AD-8	SMB PRIVATE ED LN TR 2015-C LN BCK NT CL A-3	1	6,281,851	6,531,085
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,496,425	5,720,744	12/05/2016	12/05/2046	Interest Rate Swap			78448P-AD-2	SMB PRIVATE ED LOAN TR 2015-A LN BACKED NT A-3	1	5,496,425	5,720,744
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,301,377	3,290,277	12/05/2016	12/05/2046	Interest Rate Swap			69847R-AB-8	PANHANDLE-PLAINS TX STUD-SERIES 2001-1 CLASS A2	1	3,301,377	3,290,277
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,331,510	4,334,387	12/05/2016	12/05/2046	Interest Rate Swap			19458L-BH-2	COLLEGIATE FUNDING SERVI-SERIES 2005-B CLASS A4	1	4,331,510	4,334,387
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,676,407	4,720,368	12/05/2016	12/05/2046	Interest Rate Swap			78446D-AC-3	SLM STUDENT LOAN TRUST-SERIES 2011-A CLASS A3	1	4,676,407	4,720,368
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,819,542	3,943,369	12/05/2016	12/05/2046	Interest Rate Swap			63938E-AD-6	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS A4	1	3,819,542	3,943,369
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		224,539	224,513	12/05/2016	12/05/2046	Interest Rate Swap			00432C-CF-6	ACCESS GROUP INC DEL 2005-1 ASSET BDK CTF CL A-3	1	224,539	224,513
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		16,233,781	16,492,658	12/05/2016	12/05/2046	Interest Rate Swap			840555-DA-1	SOUTH TX HIGHER ED AUTH REV SER 1 CL A-3	1	16,233,781	16,492,658
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,537,444	9,766,915	12/05/2016	12/05/2046	Interest Rate Swap			00432C-CW-9	ACCESS GROUP INC-SERIES 2005-B CLASS A3	1	9,537,444	9,766,915
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,982,702	10,542,771	12/05/2016	12/05/2046	Interest Rate Swap			28148W-AC-7	EDUCATIONAL FUNDING OF T-SERIES 2011-1 CLASS B	1	9,982,702	10,542,771
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,283,172	9,963,954	12/05/2016	12/05/2046	Interest Rate Swap			78444C-AE-3	SLM STUDENT LOAN TRUST-SERIES 07-6 CLASS A5	1	9,283,172	9,963,954
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,666,418	9,172,363	12/05/2016	12/05/2046	Interest Rate Swap			78443F-AF-4	SLM STUDENT LOAN TRUST-SERIES 2007-5 CLASS A6	1	8,666,418	9,172,363
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,506,889	7,664,895	12/05/2016	12/05/2046	Interest Rate Swap			00400V-AB-3	ACADEMIC LOAN FUNDING TR-ALFT 2012-1A A2	1	7,506,889	7,664,895
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		764,974	840,739	12/05/2016	12/05/2046	Interest Rate Swap			462592-AD-8	IOWA STUDENT LOAN LIQUID-SERIES 2005-1 CLASS B	1	764,974	840,739
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,097,394	9,204,712	12/05/2016	12/05/2046	Interest Rate Swap			78442G-OA-7	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	9,097,394	9,204,712
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,655,075	1,761,600	12/05/2016	12/05/2046	Interest Rate Swap			38021F-AB-7	GOAL CAPITAL FUNDING TRU-SERIES 2015-1 CLASS B	1	1,655,075	1,761,600
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,673,879	1,778,119	12/05/2016	12/05/2046	Interest Rate Swap			28138J-AB-0	EDUCATIONAL SERVICES OF -SERIES 15-2 CLASS B	1	1,673,879	1,778,119
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,513,776	2,543,827	12/05/2016	12/05/2046	Interest Rate Swap			78442G-GM-2	SLM STUDENT LOAN TRUST 2003-4 LN BDK CTF CL B	1	2,513,776	2,543,827
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,353,233	1,367,130	12/05/2016	12/05/2046	Interest Rate Swap			28090A-AB-5	EDUCATIONAL SERVICES OF -2014-4 SERIES B	1	1,353,233	1,367,130
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		483,914	488,312	12/05/2016	12/05/2046	Interest Rate Swap			83401L-AA-2	SOCIAL PROFESSIONAL LOAN-SERIES 2015-A CLASS A1	1	483,914	488,312
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,200,000	7,199,093	12/05/2016	12/05/2046	Interest Rate Swap			03767M-AE-8	Apidos CLO-SERIES 18-29A CLASS A1B	1	7,200,000	7,199,093
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,400,000	4,355,890	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	4,355,890
57629*DG3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	4,999,930	12/05/2016	12/05/2046	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	5,000,000	4,999,930
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	7,526,480	(7,621,041)	12/06/2016	12/06/2046	Interest Rate Swap		(14,907,790)	281397-AP-4	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A1	1	7,526,480	7,286,749
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,917,945	12,049,992	12/05/2016	12/05/2046	Interest Rate Swap			MXP001-TT-1	Grupo Aeromexico S.A.B. Floating Rate S	1	11,917,945	12,049,992
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,523,521	4,583,294	12/06/2016	12/06/2046	Interest Rate Swap			66705R-AA-7	NORTHSTAR EDUCATION FINA-NEF 2016-1A	1	4,523,521	4,583,294

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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*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,659,018	6,783,100	12/06/2016	12/06/2046	Interest Rate Swap			281397-AB-5	EDUCATION LOAN ASSET-BAC-SERIES 2003-1 CLASS A2	1	6,659,018	6,783,100
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,279,447	5,625,503	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-CX-5	MELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R1	1	5,279,447	5,625,503
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,794,646	5,006,409	12/06/2016	12/06/2046	Interest Rate Swap			78443G-AG-0	SLM STUDENT LOAN TRUST-SERIES 2006-7 CLASS A6B	1	4,794,646	5,006,409
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,244,474	4,824,720	12/06/2016	12/06/2046	Interest Rate Swap			106238-LJ-5	BRAZOS TX HGR EDU AUTH REVENUE BOND	1	4,244,474	4,824,720
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,542,577	5,880,530	12/06/2016	12/06/2046	Interest Rate Swap			281080-AB-0	EDLINC STUDENT LOAN FUND-SERIES 2012-1 CLASS B	1	5,542,577	5,880,530
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,450,000	4,248,380	12/06/2016	12/06/2046	Interest Rate Swap			281397-AQ-2	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A2	1	4,450,000	4,248,380
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,845,115	2,907,368	12/06/2016	12/06/2046	Interest Rate Swap			38021E-AA-2	GOAL CAPITAL FUNDING TR 2010-1 STUDENT LN BKO NT	1	2,845,115	2,907,368
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,632,923	4,118,256	12/06/2016	12/06/2046	Interest Rate Swap			64031Q-CM-1	MELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R2	1	3,632,923	4,118,256
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,742,658	3,844,156	12/06/2016	12/06/2046	Interest Rate Swap			658262-GD-6	NORTH CAROLINA STATE EDU-SERIES 2011-2 CLASS A3	1	3,742,658	3,844,156
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,895,174	1,989,572	12/06/2016	12/06/2046	Interest Rate Swap			78442G-KW-5	SLM STUDENT LOAN TRUST-SERIES 2004-1 CLASS A6	1	1,895,174	1,989,572
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,633,081	15,133,674	12/06/2016	12/06/2046	Interest Rate Swap			83149E-AG-2	SLM STUDENT LN TR 2006-5-NOTE CL B	1	14,633,081	15,133,674
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,900,000	13,806,064	12/06/2016	12/06/2046	Interest Rate Swap			26251L-AE-4	Dryden 64 CLO Ltd-DRSLF 2018-64A B	1	13,900,000	13,806,064
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,082,052	4,207,371	12/06/2016	12/06/2046	Interest Rate Swap			23341K-AA-3	DRB PRIME STUDENT LOAN T-SERIES 2015-D CLASS A1	1	4,082,052	4,207,371
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,765,239	8,890,033	12/06/2016	12/06/2046	Interest Rate Swap			64031C-AB-8	MELNET STUDENT LOAN TRUS-SERIES 2012-2A CLASS B	1	8,765,239	8,890,033
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,146,619	13,407,520	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PS-9	SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS B	1	13,146,619	13,407,520
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,900,000	3,903,444	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	3,903,444
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,000,000	7,943,176	12/06/2016	12/06/2046	Interest Rate Swap			03328T-AS-4	ANCHORAGE CAPITAL CLO 7 -ANCHC 2015-7A B1R	1	8,000,000	7,943,176
57629*DF5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	2,995,158	12/06/2016	12/06/2046	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	3,000,000	2,995,158
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	10,924,783	(3,596,750)	12/06/2016	12/06/2046	Interest Rate Swap	(14,642,576)		MXP001-TT-1	Grupo Aeromexico S.A.B. Floating Rate S	1	10,924,783	11,045,826
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,388,010	9,622,977	12/05/2016	12/05/2046	Interest Rate Swap			83715R-AG-7	SOUTH CAROLINA STUDENT L-SERIES 2014-1 CLASS B	1	9,388,010	9,622,977
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,010,570	6,659,994	12/06/2016	12/06/2046	Interest Rate Swap			784420-AE-1	SLC STUDENT LOAN TRUST-SERIES 2005-1 CLASS B	1	6,010,570	6,659,994
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,639,182	5,937,505	12/06/2016	12/06/2046	Interest Rate Swap			78442G-QT-6	SLM STUDENT LOAN TRUST-SERIES 2005-8 CLASS B	1	5,639,182	5,937,505
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,664,256	5,871,358	12/06/2016	12/06/2046	Interest Rate Swap			78442G-PD-2	SLM STUDENT LOAN TRUST-SERIES 2005-3 CLASS B	1	5,664,256	5,871,358
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,440,201	3,695,893	12/06/2016	12/06/2046	Interest Rate Swap			493268-AU-0	KEYCORP STUDENT LOAN TRU-SERIES 1999-B CLASS CTFS	1	3,440,201	3,695,893
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,644,440	6,684,139	12/06/2016	12/06/2046	Interest Rate Swap			78446C-AB-7	SLM STUDENT LOAN TRUST-SERIES 2013-2 CLASS B	1	6,644,440	6,684,139
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,955,000	6,572,845	12/06/2016	12/06/2046	Interest Rate Swap			63938E-AE-4	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS B	1	6,955,000	6,572,845
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,247,256	5,165,978	12/06/2016	12/06/2046	Interest Rate Swap			64031A-AJ-5	MELNET STUDENT LOAN TRUS-SERIES 2006-3 CLASS B	1	5,247,256	5,165,978
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,183,974	6,822,648	12/06/2016	12/06/2046	Interest Rate Swap			63939L-AC-1	NAVIENT STUDENT LOAN TRU-SERIES 2015-3 CLASS B	1	6,183,974	6,822,648
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,500,000	6,649,634	12/06/2016	12/06/2046	Interest Rate Swap			78447M-AD-0	SLM STUDENT LOAN TRUST-SERIES 2013-1 CLASS B	1	6,500,000	6,649,634
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,369,345	5,601,640	12/06/2016	12/06/2046	Interest Rate Swap			64033J-AB-1	MELNET STUDENT LOAN TRUS-SERIES 2014-1A CLASS B	1	5,369,345	5,601,640
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,653,736	3,758,851	12/06/2016	12/06/2046	Interest Rate Swap			194266-AE-2	COLLEGE LOAN CORPORATION-SERIES 2005-2 CLASS B	1	3,653,736	3,758,851

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STATEMENT AS OF SEPTEMBER 30, 2018 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 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,467,522	4,660,070	12/06/2016	12/06/2046	Interest Rate Swap				64033N-AB-2	NELNET STUDENT LOAN TRUS-SERIES 2014-5A CLASS B	1	4,467,522	4,660,070
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,592,688	3,839,066	12/06/2016	12/06/2046	Interest Rate Swap				194262-CF-6	COLLEGE LOAN CORPORATION-SERIES 2004-1 CLASS B	1	3,592,688	3,839,066
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,779,349	2,910,354	12/06/2016	12/06/2046	Interest Rate Swap				78442G-LJ-3	SLM STUDENT LOAN TRUST-SERIES 2004-3 CLASS B	1	2,779,349	2,910,354
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,650,000	3,468,371	12/06/2016	12/06/2046	Interest Rate Swap				64032A-AB-1	NELNET STUDENT LOAN TRUS-SERIES 2012-1A CLASS B	1	3,650,000	3,468,371
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,037,436	3,353,479	12/06/2016	12/06/2046	Interest Rate Swap				64032F-AH-7	NELNET STUDENT LOAN TRUS-SERIES 2007-2A CLASS A4A2	1	3,037,436	3,353,479
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,181,179	3,092,489	12/06/2016	12/06/2046	Interest Rate Swap				64033L-AD-2	NELNET STUDENT LOAN TRUS-SERIES 2014-2A CLASS B	1	3,181,179	3,092,489
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,240,000	3,184,055	12/06/2016	12/06/2046	Interest Rate Swap				64033K-AB-8	NELNET STUDENT LOAN TRUS-SERIES 2014-3A CLASS B	1	3,240,000	3,184,055
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		14,750,000	14,747,891	12/06/2016	12/06/2046	Interest Rate Swap				03767M-AG-3	Apidos CLO-SERIES 18-29A CLASS A2 Magnetite VIII Ltd-MAGNE 2014-8A	1	14,750,000	14,747,891
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,471,335	12/06/2016	12/06/2046	Interest Rate Swap				55952Y-AT-4	CR2	1	4,500,000	4,471,335
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,501,838	12/06/2016	12/06/2046	Interest Rate Swap				94949L-AE-0	WELLFLEET CLO LTD-WELF 2016-2A B Ares XXVIII CLO Ltd-SERIES 15-38A	1	2,500,000	2,501,838
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,632,417	12/06/2016	12/06/2046	Interest Rate Swap				04015U-AJ-7	CLASS BR	1	6,700,000	6,632,417
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,000,000	3,000,000	12/06/2016	12/06/2046	Interest Rate Swap				48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2 ATRIUM CDO CORP-SERIES 8A CLASS BR	1	3,000,000	3,000,000
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	8,900,000	(6,090,210)	12/06/2016	12/06/2046	Interest Rate Swap		(14,992,177)		04964H-AN-8	Grupo Aeromexico S.A.B. Floating Rate S	1	8,900,000	8,901,967
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		993,162	1,004,166	12/05/2016	12/05/2046	Interest Rate Swap				MXP001-TT-1	TICP CLO LTD-SERIES 2016-6A CLASS B	1	993,162	1,004,166
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,900,000	8,910,778	12/06/2016	12/06/2046	Interest Rate Swap				87246M-AB-8	ATLAS SENIOR LOAN FUND L-ATCLO 2016-7A B1	1	8,900,000	8,910,778
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,855,938	12/06/2016	12/06/2046	Interest Rate Swap				04941T-AE-0	CARLYLE GLOBAL MARKET ST-SERIES 2012-4A CLASS BR	1	8,850,000	8,855,938
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,859,682	12/06/2016	12/06/2046	Interest Rate Swap				14309Y-AQ-7	APIDOS CLO-SERIES 2014-17A CLASS A2R	1	8,850,000	8,859,682
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,850,000	8,852,177	12/06/2016	12/06/2046	Interest Rate Swap				03764X-AJ-6	BARINGS CLO LTD-BABSN 2016-3A A2 Anchorage Capital CLO Lt-ANCHC	1	8,850,000	8,852,177
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,500,000	7,506,615	12/06/2016	12/06/2046	Interest Rate Swap				06759Y-AC-9	2018-10A B Babson CLO Ltd 2015-1-BABSN 2015-1A	1	7,500,000	7,506,615
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		11,050,000	11,038,950	12/06/2016	12/06/2046	Interest Rate Swap				03331J-AJ-1	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS B	1	11,050,000	11,038,950
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		12,575,000	12,518,463	12/06/2016	12/06/2046	Interest Rate Swap				056162-AN-0	SLM STUDENT LOAN TRUST-SERIES 2013-4 CLASS B	1	12,575,000	12,518,463
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,000,000	10,007,200	12/06/2016	12/06/2046	Interest Rate Swap				83609Y-AE-6	ACCESS GROUP INC-SERIES 2006-1 CLASS B	1	10,000,000	10,007,200
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,200,000	3,199,997	12/06/2016	12/06/2046	Interest Rate Swap				78448A-AD-5	SLM STUDENT LOAN TRUST-SERIES 2003-14 CLASS A6	1	3,200,000	3,199,997
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,788,775	1,965,751	12/06/2016	12/06/2046	Interest Rate Swap				00432C-DE-8	KEYCORP STUDENT LOAN TRU-SERIES 2004-A CLASS 1B	1	1,788,775	1,965,751
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,479,601	2,498,763	12/06/2016	12/06/2046	Interest Rate Swap				78442G-KN-5	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B1	1	2,479,601	2,498,763
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,753,091	1,720,972	12/06/2016	12/06/2046	Interest Rate Swap				493268-BW-5	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	1,753,091	1,720,972
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		601,720	652,655	12/06/2016	12/06/2046	Interest Rate Swap				429827-AR-9	NELNET STUDENT LOAN TRUS-SERIES 2015-3A CLASS B	1	601,720	652,655
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,027,330	2,154,800	12/06/2016	12/06/2046	Interest Rate Swap				429827-AS-7	COLLEGIATE FUNDING SERVI-SERIES 2005-A CLASS B	1	2,027,330	2,154,800
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,942,261	2,139,307	12/06/2016	12/06/2046	Interest Rate Swap				64033T-AB-9	ACCESS GROUP INC-SERIES 2015-1 CLASS B	1	1,942,261	2,139,307
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,565,913	1,553,477	12/06/2016	12/06/2046	Interest Rate Swap				19458L-BD-1		1	1,565,913	1,553,477
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,881,106	1,962,354	12/06/2016	12/06/2046	Interest Rate Swap				00435T-AB-7		1	1,881,106	1,962,354

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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*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,832,324	2,884,173	12/06/2016	12/06/2046	Interest Rate Swap			78442G-RY-4	SLM STUDENT LOAN TRUST-SERIES 2006-2 CLASS B	1	2,832,324	2,884,173
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		3,221,748	2,982,047	12/06/2016	12/06/2046	Interest Rate Swap			194267-AM-2	COLLEGE LOAN CORPORATION-SERIES 2007-1 CLASS B2	1	3,221,748	2,982,047
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,522,004	2,411,903	12/06/2016	12/06/2046	Interest Rate Swap			92978J-AH-6	WACHOVIA STUDENT LOAN TR-SERIES 2006-1 CLASS B	1	2,522,004	2,411,903
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,069,265	2,156,608	12/06/2016	12/06/2046	Interest Rate Swap			83715R-AH-5	SOUTH CAROLINA STUDENT L-SERIES 15-A CLASS A	1	2,069,265	2,156,608
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,485,794	2,449,958	12/06/2016	12/06/2046	Interest Rate Swap			28137T-AB-9	EDUCATIONAL SERVICES OF -SERIES 2014-2 CLASS B	1	2,485,794	2,449,958
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,925,023	1,991,182	12/06/2016	12/06/2046	Interest Rate Swap			78443B-AK-2	SLM STUDENT LOAN TRUST-SERIES 2006-10 CLASS B	1	1,925,023	1,991,182
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,389,035	2,322,433	12/06/2016	12/06/2046	Interest Rate Swap			69340Q-AB-2	PENNSYLVANIA HIGHER EDUC-SERIES 2015-1A CLASS B	1	2,389,035	2,322,433
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,146,680	2,256,491	12/06/2016	12/06/2046	Interest Rate Swap			281378-AB-5	EDUCATIONAL SERVICES OF -SERIES 2015-1 CLASS B	1	2,146,680	2,256,491
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		1,343,861	1,437,497	12/06/2016	12/06/2046	Interest Rate Swap			00432C-AR-2	ACCESS GROUP-STUDENT LN REVENUE NT	1	1,343,861	1,437,497
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,087,458	7,171,020	12/06/2016	12/06/2046	Interest Rate Swap			63939D-AD-7	NAVIENT STUDENT LOAN TRUST 2014-8 CL B	1	7,087,458	7,171,020
57629*DD0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		9,900,000	9,836,472	12/06/2016	12/06/2046	Interest Rate Swap			69688X-AU-5	Palmer Square CLO 2014-1-SERIES 2014-1A CLASS A2R	1	9,900,000	9,836,472
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1	125,000,000	23,500,000	8,510,883	12/06/2016	12/06/2046	Interest Rate Swap		(14,987,355)	92558V-AC-8	Vibrant CLO Ltd-SERIES 18-9A CLASS A2	1	23,500,000	23,498,238
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		10,800,000	10,781,100	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	10,781,100
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,580,776	13,536,955	12/06/2016	12/06/2046	Interest Rate Swap			04017E-AE-2	ARES XXXIIR CLO LTD-SERIES 14-32RA CLASS A1B	1	13,580,776	13,536,955
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,790,000	8,765,801	12/06/2016	12/06/2046	Interest Rate Swap			55951P-BC-0	Magnetite VII Ltd-MAGNE 2012-7A A2R2	1	8,790,000	8,765,801
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		13,560,000	13,559,973	12/06/2016	12/06/2046	Interest Rate Swap			40436V-AB-7	HIGHBRIDGE LOAN MANAGEME-HLM 11A-17 B	1	13,560,000	13,559,973
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,021,179	2,007,824	12/06/2016	12/06/2046	Interest Rate Swap			87230A-AD-8	TCI-FLATIRON CLO LTD-TFLAT 2016-1A D	3	2,021,179	2,007,824
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		8,200,000	8,202,952	12/06/2016	12/06/2046	Interest Rate Swap			04964H-AQ-1	ATRIUM VIII-DEF NT CL C-R	1	8,200,000	8,202,952
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		7,516,250	7,533,432	12/06/2016	12/06/2046	Interest Rate Swap			06759Y-AE-5	BARINGS CLO LTD-BABSN 2016-3A B LCM LTD PARTNERSHIP-SERIES 25A CLASS C2	1	7,516,250	7,533,432
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		2,500,000	2,505,695	12/06/2016	12/06/2046	Interest Rate Swap			50189P-AN-2	WIND RIVER CLO LTD-WINDR 2012-1A CR	1	2,500,000	2,505,695
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,761,835	6,754,929	12/06/2016	12/06/2046	Interest Rate Swap			87244A-BE-9	CARLYLE GLOBAL MARKET ST-SERIES 2012-4A CLASS C1R	1	6,761,835	6,754,929
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,700,000	6,709,400	12/06/2016	12/06/2046	Interest Rate Swap			14309Y-AY-0	ALM LOAN FUNDING-SERIES ALM 2013-7R2A CLASS BR	1	6,700,000	6,709,400
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,002,820	12/06/2016	12/06/2046	Interest Rate Swap			00164B-AU-1	ANCHORAGE CAPITAL CLO LT-ANCHC 2016-9A C	1	5,000,000	5,002,820
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		5,000,000	5,013,360	12/06/2016	12/06/2046	Interest Rate Swap			03328W-AE-8	MADISON PARK FUNDING LTD-MDPK 2016-24A C1	1	5,000,000	5,013,360
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,750,000	4,762,284	12/06/2016	12/06/2046	Interest Rate Swap			55820N-AE-1	QHA LOAN FUNDING LTD-SERIES 2012-1A CLASS CR	1	4,750,000	4,762,284
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,500,000	4,505,211	12/06/2016	12/06/2046	Interest Rate Swap			67091H-AP-6	Rockford Tower CLO 2017--SERIES 17-3A CLASS B	1	4,500,000	4,505,211
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		6,750,000	6,664,248	12/06/2016	12/06/2046	Interest Rate Swap			77341D-AE-7	KKR FINANCIAL CLO LTD-KKR 16 B1	1	6,750,000	6,664,248
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,375,000	4,381,838	12/06/2016	12/06/2046	Interest Rate Swap			48251B-AE-0	APIDOS CLO-SERIES 12-11A CLASS CR	1	4,375,000	4,381,838
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,200,000	4,202,453	12/06/2016	12/06/2046	Interest Rate Swap			03763Y-AS-5	BLUEMOUNTAIN CLO LTD-BLUEM 2012-2A CR	1	4,200,000	4,202,453
57629*DC2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corp Bonds	1		4,000,000	4,003,964	12/06/2016	12/06/2046	Interest Rate Swap			09626R-AS-4	US TREASURY 3.125% TO 5/15/2019	1	4,000,000	4,003,964
Awaiting PPN	Inverse JPY Long Term Bond	1	50,000,000	59,749,437	62,617,874	03/28/2017	03/28/2019	Currency Forward		2,388,196		US TREASURY STRIP 0% DUE 05/15/2023	1	59,749,437	60,229,678
Awaiting PPN	Inverse JPY Long Term Bond	1	50,000,000	63,175,063	72,395,206	03/28/2017	04/01/2019	Currency Forward		2,709,340	912833-LN-8		1	63,175,063	69,685,866

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STATEMENT AS OF SEPTEMBER 30, 2018 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	Inverse JPY Long Term Bond	1	50,000,000	54,954,785	57,637,837	04/11/2017	04/15/2019	Currency Forward		2,854,829	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	54,954,785	54,783,008
Awaiting PPN	Inverse JPY Long Term Bond	1	50,000,000	52,956,430	54,794,159	05/01/2017	05/08/2019	Currency Forward		2,003,260	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	52,956,430	52,790,899
Awaiting PPN	Inverse JPY Long Term Bond	1	75,000,000	78,935,055	81,416,524	05/02/2017	05/09/2019	Currency Forward		2,728,203	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	78,935,055	78,688,321
91283# AP8	Inverse JPY Long Term Bond	1	90,000,000	76,936,700	79,778,316	05/03/2017	05/09/2019	Currency Forward		3,082,105	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	76,936,700	76,696,211
91283# AP8	Inverse JPY Long Term Bond	1		6,400,000	6,358,566	05/03/2017	05/09/2019	Currency Forward			01749B-AB-5	Allegro CLO VI Ltd-ALLEG 2017-2A B	1	6,400,000	6,358,566
91283# AP8	Inverse JPY Long Term Bond	1		4,400,000	4,355,890	05/03/2017	05/09/2019	Currency Forward			39729R-AC-2	Greenwood Park CLO Ltd-SERIES 18-1A CLASS B	1	4,400,000	4,355,890
91283# AP8	Inverse JPY Long Term Bond	1		5,095,000	5,044,035	05/03/2017	05/09/2019	Currency Forward			05616Z-AS-9	Babson CLO Ltd 2015-1-BABSN 2015-1A CR	1	5,095,000	5,044,035
91283# AP8	Inverse JPY Long Term Bond	1		4,000,000	3,954,888	05/03/2017	05/09/2019	Currency Forward			09628F-AE-9	BlueMountain Fuji US Clo-SERIES 2017-3A CLASS B	1	4,000,000	3,954,888
91283# AP8	Inverse JPY Long Term Bond	1		2,000,000	2,003,314	05/03/2017	05/09/2019	Currency Forward			22616C-AE-3	CRESTLINE DENALI CLO XV -SERIES 17-1A CLASS C	1	2,000,000	2,003,314
91283# AP8	Inverse JPY Long Term Bond	1		1,995,000	1,975,587	05/03/2017	05/09/2019	Currency Forward			06760E-AC-0	Babson CLO Ltd 2013-1-SERIES 2013-1S CLASS BR	1	1,995,000	1,975,587
Awaiting PPN	Inverse JPY Long Term Bond	1	50,000,000	54,954,785	55,801,595	05/10/2017	05/13/2019	Currency Forward		1,018,587	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	54,954,785	54,783,008
Awaiting PPN	Inverse JPY Long Term Bond	1	50,000,000	53,955,608	54,786,849	05/11/2017	05/15/2019	Currency Forward		999,896	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	53,955,608	53,786,953
Awaiting PPN	Inverse JPY Long Term Bond	1	25,000,000	26,977,804	27,541,758	05/16/2017	05/20/2019	Currency Forward		648,281	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	26,977,804	26,833,477
Awaiting PPN	Inverse JPY Long Term Bond	1	25,000,000	26,977,804	27,815,574	05/17/2017	05/20/2019	Currency Forward		922,097	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	26,977,804	26,833,477
Awaiting PPN	Inverse JPY Long Term Bond	1	25,000,000	25,978,626	26,965,139	05/17/2017	05/20/2019	Currency Forward		1,067,717	912828-C6-5	US TREASURY 1.625% DUE 3/30/2019	1	25,978,626	25,897,422
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1	250,000,000	21,249,148	(15,351,183)	09/15/2017	09/15/2047	Interest Rate Swap		(35,606,933)	03073E-AM-7	AmerisourceBergen Corp-SENIOR UNSECURED	2	21,249,148	20,255,750
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		28,632,172	32,433,338	09/15/2017	09/15/2047	Interest Rate Swap			055450-AH-3	BHP Billiton Finance USA-DEBENTURE	1	28,632,172	32,433,338
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		31,147,643	30,056,727	09/15/2017	09/15/2047	Interest Rate Swap			125720-AG-0	ONE GROUP INC-SR UNSECURED ENERGY MISSISSIPPI INC-SECURED	1	31,147,643	30,056,727
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,645,063	19,715,648	09/15/2017	09/15/2047	Interest Rate Swap			29364N-AS-7	NOTE	1	19,645,063	19,715,648
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		20,594,056	20,825,580	09/15/2017	09/15/2047	Interest Rate Swap			29365T-AA-2	ENERGY TEXAS INC-NOTE	1	20,594,056	20,825,580
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		25,720,349	30,559,463	09/15/2017	09/15/2047	Interest Rate Swap			313747-AF-4	FEDERAL REALTY INVESTMEN-NOTE REID	1	25,720,349	30,559,463
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		20,833,303	20,914,532	09/15/2017	09/15/2047	Interest Rate Swap			375558-AW-3	GILEAD SCIENCES INC-SENIOR UNSECURED NOTE	1	20,833,303	20,914,532
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,671,753	19,603,772	09/15/2017	09/15/2047	Interest Rate Swap			384780-AA-0	GRAIN SPECTRUM FUND II-SECURED NOTE	1	19,671,753	19,603,772
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		28,498,200	27,839,427	09/15/2017	09/15/2047	Interest Rate Swap			75972Y-AA-9	RENAISSANCE FINANCE-SR UNSECURED	1	28,498,200	27,839,427
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		25,076,373	26,271,658	09/15/2017	09/15/2047	Interest Rate Swap			884315-AG-7	THOMAS & BETTS CORP-NOTE	1	25,076,373	26,271,658
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		19,095,522	19,214,005	09/15/2017	09/15/2047	Interest Rate Swap			958587-BJ-5	WEST MASS ELECTRIC CO-SENIOR UNSECURED NOTE	1	19,095,522	19,214,005
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		3,200,000	3,156,006	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	3,156,006
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		8,000,000	7,923,744	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	7,923,744
57629* DMO	Evergreen Basket of Inverse Floating Rate Corporate Bonds	1		7,000,000	7,001,827	09/15/2017	09/15/2047	Interest Rate Swap			39862E-AB-0	GRIPPEN PARK CLO LTD-SERIES 17-1A CLASS B	1	7,000,000	7,001,827
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2	250,000,000	31,817,304	(4,355,763)	09/15/2017	09/15/2047	Interest Rate Swap		(35,238,766)	03116Z-CJ-7	AMGEN INC-SENIOR UNSECURED	2	31,817,304	30,883,003
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		36,310,272	36,567,129	09/15/2017	09/15/2047	Interest Rate Swap			44107T-AT-3	HOST HOTELS & RESORTS LP-SENIOR UNSECURED NOTE	2	36,310,272	36,567,129
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		33,307,756	32,867,672	09/15/2017	09/15/2047	Interest Rate Swap			445658-CD-7	JOB HUNT TRANSPRT SVCS-SENIOR UNSECURED NOTE	2	33,307,756	32,867,672
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		35,275,063	36,144,309	09/15/2017	09/15/2047	Interest Rate Swap			456866-AM-4	INGERSOLL-RAND CO-DEBENTURE	2	35,275,063	36,144,309
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		42,888,775	41,328,898	09/15/2017	09/15/2047	Interest Rate Swap			664397-AK-2	EVERSOURCE ENERGY-UNSECURED NOTE	2	42,888,775	41,328,898
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		32,948,105	32,252,668	09/15/2017	09/15/2047	Interest Rate Swap			760759-AP-5	Republic Services Inc-SENIOR UNSECURED NOTE	2	32,948,105	32,252,668
57629* DL2	Evergreen Basket of Inverse Floating Rate Corporate Bonds	2		37,891,806	36,835,129	09/15/2017	09/15/2047	Interest Rate Swap			94106L-BA-6	Waste Management Inc-SR UNSECURED	2	37,891,806	36,835,129

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STATEMENT AS OF SEPTEMBER 30, 2018 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 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held				
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value
Awaiting PPN	Sovereign Bond of Russia Credit Default Indicies (CDIG031/CDX.NA.IG.31)	1	10,000,000	14,561,588	13,897,132	06/20/2018	12/20/2023	5 Yr Credit Default Swap	(312,057)	(209,899)	912810-RU-4	US TREASURY N/B-UNSECURED 2.875% DUE 11/15/2046	1	14,873,645	14,107,031
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2	517,000,000	273,083,360	277,472,860	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index	9,181,113	9,962,820	912828-PX-2	US TREASURY N/B Note 3.625% DUE 02/15/2021	1	263,902,247	267,510,040
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2		250,524,084	263,988,020	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index			76116F-AG-2	RFCSPP PRINCIPAL STRIP US TREASURY N/B Note 3.625% DUE 02/15/2021	1	250,524,084	263,988,020
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2	226,000,000	255,204,627	258,642,230	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index	4,346,978	4,355,120	912828-PX-2	US TREASURY N/B Note 3.625% DUE 02/15/2021	1	250,857,649	254,287,110
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2	257,000,000	94,888,760	96,495,864	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index	4,580,006	4,952,504	912828-PX-2	US TREASURY N/B Note 3.625% DUE 02/15/2021	1	90,308,754	91,543,360
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2		78,177,728	82,379,240	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index			76116F-AG-2	RFCSPP PRINCIPAL STRIP	1	78,177,728	82,379,240
Awaiting PPN	Credit Default Indicies (CDIG031/CDX.NA.IG.31)	2		87,316,735	105,475,977	06/20/2018	12/20/2023	5 Yr Credit Default Swap Index			912810-QK-7	US Treasury 3.875% DUE 8/15/2040 US TREASURY STRIP 0% DUE 05/15/2023	1	87,316,735	105,475,977
Awaiting PPN	Inverse JPY Long Term Bond	1	76,207,323	19,742,207	17,953,524	05/31/2018	05/20/2019	Currency Forward		(3,823,309)	912833-LN-8	US TREASURY 3.125% TO 5/15/2019	1	19,742,207	21,776,833
Awaiting PPN	Inverse JPY Long Term Bond	1		56,264,053	56,716,280	05/31/2018	05/20/2019	Currency Forward			912828-KQ-2	US TREASURY 1.625% DUE 3/30/2019	1	56,264,053	56,716,280
Awaiting PPN	Inverse JPY Long Term Bond	1		31,973,693	31,873,750	05/31/2018	05/20/2019	Currency Forward			912828-C6-5	US TREAS N/B-NOTE 3.625% 08/15/2019	1	31,973,693	31,873,750
Awaiting PPN	Inverse JPY Long Term Bond	1	49,665,019	70,073,965	68,068,047	05/31/2018	04/15/2019	Currency Forward		(2,517,110)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
Awaiting PPN	Inverse JPY Long Term Bond	1	167,790,725	180,190,196	172,897,178	05/31/2018	05/09/2019	Currency Forward		(8,607,510)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	180,190,196	181,504,688
Awaiting PPN	Inverse JPY Long Term Bond	1	49,878,194	70,073,965	67,972,113	05/31/2018	04/01/2019	Currency Forward		(2,613,044)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
Awaiting PPN	Inverse JPY Long Term Bond	1	50,207,107	70,073,965	68,000,350	05/31/2018	03/28/2019	Currency Forward		(2,584,807)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
Awaiting PPN	Inverse JPY Long Term Bond	1	50,616,145	70,073,965	67,979,354	05/31/2018	05/08/2019	Currency Forward		(2,605,803)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
Awaiting PPN	Inverse JPY Long Term Bond	1	51,627,893	70,073,965	67,971,554	05/31/2018	05/13/2019	Currency Forward		(2,613,603)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
Awaiting PPN	Inverse JPY Long Term Bond	1	51,630,473	70,073,965	67,982,103	05/31/2018	05/15/2019	Currency Forward		(2,603,054)	912828-LJ-7	US TREAS N/B-NOTE 3.625% 08/15/2019	1	70,073,965	70,585,157
9999999 - Totals				12,498,161,568	11,999,749,973	XXX	XXX	XXX	16,797,906	(542,847,877)	XXX	XXX	XXX	12,481,363,662	12,542,597,850

S105.23

STATEMENT AS OF SEPTEMBER 30, 2018 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	109	11,517,000,000	109	12,582,000,000	113	12,859,622,879			109	11,517,000,000
2. Add: Opened or Acquired Transactions.....	15	2,673,000,000	8	547,622,879	13	1,125,000,000			36	4,345,622,879
3. Add: Increases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX		XXX		XXX		XXX		XXX	
4. Less: Closed or Disposed of Transactions.....	15	1,608,000,000	4	270,000,000	15	2,568,000,000			34	4,446,000,000
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	109	12,582,000,000	113	12,859,622,879	111	11,416,622,879			111	11,416,622,879

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.....	3,273,090,460
2. Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance.....
3. Total (Line 1 plus Line 2).....	3,273,090,460
4. Part D, Section 1, Column 5.....	8,557,723,026
5. Part D, Section 1, Column 6.....	(5,412,759,897)
6. Total (Line 3 minus Line 4 minus Line 5).....	128,127,331
	Fair Value Check
7. Part A, Section 1, Column 16.....	2,713,444,773
8. Part B, Section 1, Column 13.....	(128,127,331)
9. Total (Line 7 plus Line 8).....	2,585,317,442
10. Part D, Section 1, Column 8.....	8,618,787,041
11. Part D, Section 1, Column 9.....	(6,033,469,599)
12. Total (Line 9 minus Line 10 minus Line 11).....
	Potential Exposure Check
13. Part A, Section 1, Column 21.....	4,201,191,470
14. Part B, Section 1, Column 20.....	93,899,750
15. Part D, Section 1, Column 11.....	4,295,091,220
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	2,852,941,262	3,113,185,611
2. Cost of cash equivalents acquired	58,804,691,377	87,472,714,310
3. Accrual of discount	44,269,425	34,021,259
4. Unrealized valuation increase (decrease)	41,646	
5. Total gain (loss) on disposals	112,193	62,534
6. Deduct consideration received on disposals	60,726,222,967	87,767,042,452
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)	975,832,936	2,852,941,262
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	975,832,936	2,852,941,262