



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

QUARTERLY STATEMENT

AS OF SEPTEMBER 30, 2023
OF THE CONDITION AND AFFAIRS OF THE

Massachusetts Mutual Life Insurance Company

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

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

Country of Domicile United States of America

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

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

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

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

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

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

Internet Website Address www.massmutual.com

Statutory Statement Contact Trevor Wade Gordon, 617-695-4321
(Name) (Area Code) (Telephone Number)
tgordon@MassMutual.com 413-226-4086
(E-mail Address) (FAX Number)

OFFICERS

President and Chief Executive Officer Roger William Crandall Treasurer Julieta Giselle Sinisgalli
Secretary Akintokunbo Akinbajo Appointed Actuary Vy Quoc Ho

OTHER

Elizabeth Ward Chicares, Chief Financial Officer Eric William Partlan #, Chief Investment Officer Geoffrey James Craddock, Chief Risk Officer
Susan Marie Cicco, Head of Human Resources & Employee Experience Michael James O'Connor, General Counsel Sears Andrew Merritt, Head of Enterprise Technology & Experience
Dominic Lusean Blue #, Head of Third Party Distribution and New Markets Paul Anthony LaPiana #, Head of Brand, Product and Affiliated Distribution Peter John Rugel #, Head of Operations

DIRECTORS OR TRUSTEES

Roger William Crandall - Chairman Mark Thomas Bertolini Kathleen Ann Corbet
James Henry DeGraffenreid, Jr. Isabella Davidov Goren Jeffrey Marc Leiden
Laura Jeanne Sen William Taylor Spitz - Lead Director Howard Todd Stitzer
Michelle Kwok Lee Bernard Anthony Harris, Jr.

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

Akintokunbo Akinbajo
Secretary

Julieta Giselle Sinisgalli
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, 2023 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	140,760,685,651		140,760,685,651	136,445,220,548
2. Stocks:				
2.1 Preferred stocks	436,190,076		436,190,076	451,411,752
2.2 Common stocks	26,914,254,153		26,914,254,153	26,159,699,517
3. Mortgage loans on real estate:				
3.1 First liens	24,229,104,440		24,229,104,440	24,971,963,928
3.2 Other than first liens.....				
4. Real estate:				
4.1 Properties occupied by the company (less \$ encumbrances)	353,482,397		353,482,397	364,794,557
4.2 Properties held for the production of income (less \$ 284,800,000 encumbrances)	(20,975,364)		(20,975,364)	(12,001,151)
4.3 Properties held for sale (less \$ encumbrances)	1,954,867		1,954,867	1,954,867
5. Cash (\$ 554,486,410), cash equivalents (\$ 5,064,385,040) and short-term investments (\$ 1,287,651,414)	6,906,522,864		6,906,522,864	5,568,063,455
6. Contract loans (including \$ premium notes)	15,422,022,281	601,472	15,421,420,809	17,053,622,863
7. Derivatives	26,875,632,751		26,875,632,751	22,031,949,832
8. Other invested assets	12,855,430,482	45,486,802	12,809,943,679	12,296,408,175
9. Receivables for securities	2,885,200,906		2,885,200,906	1,865,109,907
10. Securities lending reinvested collateral assets				
11. Aggregate write-ins for invested assets				
12. Subtotals, cash and invested assets (Lines 1 to 11)	257,619,505,503	46,088,274	257,573,417,229	247,198,198,250
13. Title plants less \$ charged off (for Title insurers only)				
14. Investment income due and accrued	4,109,092,613	242,363	4,108,850,250	4,222,914,360
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection	129,393,896		129,393,896	186,722,600
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due (including \$ earned but unbilled premiums)	998,634,081		998,634,081	1,094,164,269
15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$)				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers	118,370,005	4,570,192	113,799,813	88,995,295
16.2 Funds held by or deposited with reinsured companies				
16.3 Other amounts receivable under reinsurance contracts	44,045,114		44,045,114	43,583,724
17. Amounts receivable relating to uninsured plans				
18.1 Current federal and foreign income tax recoverable and interest thereon	107,772,384		107,772,384	231,372,985
18.2 Net deferred tax asset	1,485,378,106		1,485,378,106	1,229,269,939
19. Guaranty funds receivable or on deposit	6,570,462		6,570,462	7,033,020
20. Electronic data processing equipment and software	256,712,868	244,479,344	12,233,524	8,472,305
21. Furniture and equipment, including health care delivery assets (\$)	38,047,479	38,047,479		
22. Net adjustment in assets and liabilities due to foreign exchange rates				
23. Receivables from parent, subsidiaries and affiliates	120,240,330		120,240,330	102,982,322
24. Health care (\$) and other amounts receivable				
25. Aggregate write-ins for other than invested assets	4,888,041,320	1,102,381,132	3,785,660,188	2,752,226,577
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	269,921,804,162	1,435,808,785	268,485,995,378	257,165,935,646
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts	50,646,610,651		50,646,610,651	53,413,804,658
28. Total (Lines 26 and 27)	320,568,414,813	1,435,808,785	319,132,606,029	310,579,740,304
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	2,743,897,396		2,743,897,396	2,620,529,124
2502. Disallowed interest maintenance reserve	926,910,218		926,910,218	
2503. Fully refundable deposits, prepayments and miscellaneous assets	85,770,315	29,679,651	56,090,664	71,442,867
2598. Summary of remaining write-ins for Line 25 from overflow page	1,131,463,392	1,072,701,481	58,761,911	60,254,586
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	4,888,041,320	1,102,381,132	3,785,660,188	2,752,226,577

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

LIABILITIES, SURPLUS AND OTHER FUNDS

	1 Current Statement Date	2 December 31 Prior Year
1. Aggregate reserve for life contracts \$ 156,593,634,016 less \$ included in Line 6.3 (including \$ 149,907,712 Modco Reserve)	156,593,634,016	149,267,177,229
2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve)	3,454,044,335	3,949,042,074
3. Liability for deposit-type contracts (including \$ Modco Reserve).....	19,112,925,121	18,089,278,812
4. Contract claims:		
4.1 Life	642,424,899	615,796,468
4.2 Accident and health	32,514,594	33,189,613
5. Policyholders' dividends/refunds to members \$ 9,434,475 and coupons \$ due and unpaid	9,434,475	8,979,074
6. Provision for policyholders' dividends, refunds to members and coupons payable in following calendar year - estimated amounts:		
6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$ Modco)	2,017,007,331	1,918,216,473
6.2 Policyholders' dividends and refunds to members not yet apportioned (including \$ Modco)		
6.3 Coupons and similar benefits (including \$ Modco)		
7. Amount provisionally held for deferred dividend policies not included in Line 6		
8. Premiums and annuity considerations for life and accident and health contracts received in advance less \$ discount; including \$ 17,504,961 accident and health premiums	66,331,486	42,225,488
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	17,605,038	9,442,289
9.3 Other amounts payable on reinsurance, including \$ (11,215,324) assumed and \$ 1,389,131,444 ceded	1,377,916,120	48,081,237
9.4 Interest Maintenance Reserve		
10. Commissions to agents due or accrued-life and annuity contracts \$ 28,545,276 , accident and health \$ 114,302 and deposit-type contract funds \$	28,659,578	16,379,844
11. Commissions and expense allowances payable on reinsurance assumed	3,308,946	3,196,883
12. General expenses due or accrued	949,398,568	1,108,191,181
13. Transfers to Separate Accounts due or accrued (net) (including \$ (56,564,691) accrued for expense allowances recognized in reserves, net of reinsured allowances)	(67,409,655)	(69,697,466)
14. Taxes, licenses and fees due or accrued, excluding federal income taxes	(143,467,699)	70,204,377
15.1 Current federal and foreign income taxes, including \$ on realized capital gains (losses)		
15.2 Net deferred tax liability		
16. Unearned investment income	199,612,618	246,340,792
17. Amounts withheld or retained by reporting entity as agent or trustee	10,651,300	3,398,273
18. Amounts held for agents' account, including \$ agents' credit balances	388,058,992	364,955,431
19. Remittances and items not allocated	1,431,728,304	2,614,943,056
20. Net adjustment in assets and liabilities due to foreign exchange rates		
21. Liability for benefits for employees and agents if not included above	229,784,872	218,843,513
22. Borrowed money \$ 49,877,183 and interest thereon \$	49,877,183	249,516,715
23. Dividends to stockholders declared and unpaid		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve	5,493,216,342	5,674,344,857
24.02 Reinsurance in unauthorized and certified (\$) companies	74,560	109,902
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers	9,750,041,932	10,344,839,427
24.04 Payable to parent, subsidiaries and affiliates	29,283,162	33,217,754
24.05 Drafts outstanding		
24.06 Liability for amounts held under uninsured plans		
24.07 Funds held under coinsurance	11,195,236,837	11,570,969,538
24.08 Derivatives	18,487,074,718	14,002,945,928
24.09 Payable for securities	215,444,548	23,308,806
24.10 Payable for securities lending		
24.11 Capital notes \$ and interest thereon \$		
25. Aggregate write-ins for liabilities	8,013,913,268	8,897,737,697
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25)	239,588,325,790	229,355,175,264
27. From Separate Accounts Statement	50,515,271,994	53,283,506,525
28. Total liabilities (Lines 26 and 27)	290,103,597,784	282,638,681,789
29. Common capital stock		
30. Preferred capital stock		
31. Aggregate write-ins for other than special surplus funds		
32. Surplus notes	5,000,961,848	5,025,961,848
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)	24,024,796,396	22,911,846,667
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 \$ 131,338,657 in Separate Accounts Statement)	29,029,008,245	27,941,058,515
38. Totals of Lines 29, 30 and 37	29,029,008,245	27,941,058,515
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	319,132,606,029	310,579,740,304
DETAILS OF WRITE-INS		
2501. Repurchase agreements	3,134,644,334	3,047,903,647
2502. Derivative accrued interest	2,411,479,675	1,688,803,934
2503. Derivative collateral	2,343,206,198	4,065,226,774
2598. Summary of remaining write-ins for Line 25 from overflow page	124,583,062	95,803,342
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	8,013,913,268	8,897,737,697
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

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

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	16,312,104,197	15,442,691,783	23,496,212,326
2. Considerations for supplementary contracts with life contingencies	17,144,852	19,641,600	27,567,010
3. Net investment income	7,745,471,476	6,450,493,467	9,352,723,221
4. Amortization of Interest Maintenance Reserve (IMR)	(36,489,941)	70,023,684	(50,411,515)
5. Separate Accounts net gain from operations excluding unrealized gains or losses	1,843,470	(209,226)	(283,027)
6. Commissions and expense allowances on reinsurance ceded	333,467,749	358,280,673	517,503,640
7. Reserve adjustments on reinsurance ceded	(3,422,879)	(304,119)	(10,510,838)
8. Miscellaneous Income:			
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	178,419,217	188,648,220	253,571,520
8.2 Charges and fees for deposit-type contracts			
8.3 Aggregate write-ins for miscellaneous income	221,901,528	227,618,643	378,492,917
9. Totals (Lines 1 to 8.3)	24,770,439,669	22,756,884,726	33,964,865,254
10. Death benefits	1,980,611,145	1,734,635,605	2,350,724,281
11. Matured endowments (excluding guaranteed annual pure endowments)	6,004,617	9,264,060	11,816,394
12. Annuity benefits	1,962,674,554	1,810,540,144	2,421,218,480
13. Disability benefits and benefits under accident and health contracts	275,612,046	288,494,799	377,457,003
14. Coupons, guaranteed annual pure endowments and similar benefits			
15. Surrender benefits and withdrawals for life contracts	9,155,488,647	9,585,266,817	11,269,837,564
16. Group conversions			
17. Interest and adjustments on contract or deposit-type contract funds	424,698,712	317,867,173	445,727,374
18. Payments on supplementary contracts with life contingencies	19,264,410	17,882,988	22,596,551
19. Increase in aggregate reserves for life and accident and health contracts	6,669,717,256	8,423,141,092	14,851,696,792
20. Totals (Lines 10 to 19)	20,494,071,388	22,187,092,678	31,751,074,439
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only)	966,914,418	903,843,223	1,272,188,934
22. Commissions and expense allowances on reinsurance assumed	36,535,402	35,521,213	51,585,286
23. General insurance expenses and fraternal expenses	1,702,623,439	1,558,009,073	2,189,838,511
24. Insurance taxes, licenses and fees, excluding federal income taxes	246,721,473	235,375,213	310,306,868
25. Increase in loading on deferred and uncollected premiums	(16,759,735)	9,216,952	37,402,641
26. Net transfers to or (from) Separate Accounts net of reinsurance	(1,085,715,117)	(4,304,680,799)	(4,594,734,614)
27. Aggregate write-ins for deductions	898,766,844	469,026,370	699,949,747
28. Totals (Lines 20 to 27)	23,243,158,112	21,093,403,923	31,717,611,813
29. Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus Line 28)	1,527,281,557	1,663,480,802	2,247,253,442
30. Dividends to policyholders and refunds to members	1,408,263,141	1,332,339,027	1,905,770,356
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	119,018,416	331,141,775	341,483,085
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	132,925,991	(68,870,494)	(64,368,788)
33. Net gain from operations after dividends to policyholders, refunds to members and federal income taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	(13,907,575)	400,012,270	405,851,873
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$ (202,788,970) (excluding taxes of \$ (85,789,495) transferred to the IMR)	(387,231,342)	291,736,957	326,388,986
35. Net income (Line 33 plus Line 34)	(401,138,917)	691,749,227	732,240,859
CAPITAL AND SURPLUS ACCOUNT			
36. Capital and surplus, December 31, prior year	27,941,058,515	26,979,255,991	26,979,255,991
37. Net income (Line 35)	(401,138,917)	691,749,227	732,240,859
38. Change in net unrealized capital gains (losses) less capital gains tax of \$ 40,537,828	374,131,198	2,478,716,110	870,357,676
39. Change in net unrealized foreign exchange capital gain (loss)	(27,489,383)	(2,696,589,387)	(1,739,307,186)
40. Change in net deferred income tax	284,580,660	316,266,706	661,575,651
41. Change in nonadmitted assets	532,658,270	(10,824,517)	(562,886,836)
42. Change in liability for reinsurance in unauthorized and certified companies	35,342	(14,776)	12,520
43. Change in reserve on account of change in valuation basis, (increase) or decrease			(12,275,243)
44. Change in asset valuation reserve	181,128,515	657,724,963	739,839,478
45. Change in treasury stock			
46. Surplus (contributed to) withdrawn from Separate Accounts during period		(3)	(3)
47. Other changes in surplus in Separate Accounts Statement	(802,946)	(18,933,126)	(16,892,260)
48. Change in surplus notes	(25,000,000)	(25,000,000)	412,500,000
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	169,846,992	(160,728,253)	(123,362,131)
54. Net change in capital and surplus for the year (Lines 37 through 53)	1,087,949,730	1,232,366,944	961,802,524
55. Capital and surplus, as of statement date (Lines 36 + 54)	29,029,008,245	28,211,622,935	27,941,058,515
DETAILS OF WRITE-INS			
08.301. Change in corporate owned life insurance	123,364,472	(75,008,962)	(51,864,798)
08.302. Experience refunds on reinsurance contracts	65,016,484	65,346,262	94,469,978
08.303. Management and administrative fees	46,731,380	216,448,561	208,945,821
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	(13,210,808)	20,832,782	126,941,915
08.399. Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	221,901,528	227,618,643	378,492,917
2701. Ceded income on funds withheld	800,071,538	609,072,379	806,904,305
2702. Reinsurance ceded adjustment	88,570,511	(99,367,122)	(86,272,996)
2703. Change in liability for employee/agent benefit plans	41,521,626	(90,682,241)	(69,342,932)
2798. Summary of remaining write-ins for Line 27 from overflow page	(31,396,830)	50,003,352	48,661,370
2799. Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	898,766,844	469,026,370	699,949,747
5301. Deferred gain on reinsurance ceded	88,570,511	(99,367,122)	(120,008,304)
5302. Other changes in surplus	81,276,481	(61,361,132)	(43,668,847)
5303. Change in minimum pension liability			40,315,020
5398. Summary of remaining write-ins for Line 53 from overflow page			
5399. Totals (Lines 5301 through 5303 plus 5398)(Line 53 above)	169,846,992	(160,728,253)	(123,362,131)

STATEMENT AS OF SEPTEMBER 30, 2023 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	16,635,022,385	15,696,990,788	23,358,051,170
2. Net investment income	8,916,746,126	6,664,103,486	8,171,862,985
3. Miscellaneous income	712,640,337	957,151,015	1,360,990,422
4. Total (Lines 1 to 3)	26,264,408,848	23,318,245,289	32,890,904,577
5. Benefit and loss related payments	13,663,004,372	13,622,215,781	16,698,464,149
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(1,096,085,891)	(4,632,901,822)	(4,947,039,344)
7. Commissions, expenses paid and aggregate write-ins for deductions	3,743,969,158	3,662,614,313	5,291,765,427
8. Dividends paid to policyholders	1,315,073,193	1,252,284,606	1,806,389,059
9. Federal and foreign income taxes paid (recovered) net of \$678,432 tax on capital gains (losses)	(36,338,723)	(16,457,597)	(5,309,882)
10. Total (Lines 5 through 9)	17,589,622,109	13,887,755,281	18,844,269,409
11. Net cash from operations (Line 4 minus Line 10)	8,674,786,739	9,430,490,008	14,046,635,168
Cash from Investments			
12. Proceeds from investments sold, matured or repaid:			
12.1 Bonds	17,485,032,897	20,814,889,705	28,498,075,523
12.2 Stocks	203,109,383	364,691,806	494,712,547
12.3 Mortgage loans	2,446,042,290	3,358,979,218	3,783,955,926
12.4 Real estate	5,288,624	243,412,260	176,722,654
12.5 Other invested assets	1,214,017,971	1,064,440,488	2,909,717,338
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	(260,845,314)	(73,685,183)	(142,216,262)
12.7 Miscellaneous proceeds	(993,363,454)	(1,058,489,440)	(896,854,827)
12.8 Total investment proceeds (Lines 12.1 to 12.7)	20,099,282,397	24,714,238,854	34,824,112,899
13. Cost of investments acquired (long-term only):			
13.1 Bonds	22,373,872,350	32,901,512,568	43,002,751,228
13.2 Stocks	513,585,750	477,200,449	1,195,896,346
13.3 Mortgage loans	1,743,958,752	1,545,628,270	2,094,819,588
13.4 Real estate	5,517,374	36,524,332	13,292,853
13.5 Other invested assets	2,047,985,897	2,426,007,101	3,932,315,900
13.6 Miscellaneous applications	(115,684,370)	(225,014,676)	256,328,689
13.7 Total investments acquired (Lines 13.1 to 13.6)	26,569,235,753	37,161,858,044	50,495,404,604
14. Net increase (or decrease) in contract loans and premium notes	(1,632,226,693)	597,996,043	934,865,632
15. Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	(4,837,726,663)	(13,045,615,233)	(16,606,157,337)
Cash from Financing and Miscellaneous Sources			
16. Cash provided (applied):			
16.1 Surplus notes, capital notes	(25,000,000)	(25,000,000)	412,500,000
16.2 Capital and paid in surplus, less treasury stock			
16.3 Borrowed funds	(199,294,917)	(630,056)	(904,826)
16.4 Net deposits on deposit-type contracts and other insurance liabilities	837,192,209	599,251,012	806,327,920
16.5 Dividends to stockholders			
16.6 Other cash provided (applied)	(3,111,497,959)	2,019,681,760	966,863,256
17. Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	(2,498,600,667)	2,593,302,716	2,184,786,350
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)	1,338,459,409	(1,021,822,509)	(374,735,819)
19. Cash, cash equivalents and short-term investments:			
19.1 Beginning of year	5,568,063,455	5,942,799,274	5,942,799,274
19.2 End of period (Line 18 plus Line 19.1)	6,906,522,864	4,920,976,765	5,568,063,455

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

20.0001. Bond conversions and refinancing	472,334,943	513,931,318	1,177,449,074
20.0002. Stock conversions	182,662,118	103,952,014	12,903,518
20.0003. Change in market value of COLI	123,880,840	74,527,234	(46,160,211)
20.0004. Transfer of bonds to partnerships and limited liability companies	121,797,363		440,893,701
20.0005. Transfer of partnerships and limited liability companies to partnerships and limited liability companies	80,856,035		619,577,868
20.0006. Net investment income payment-in-kind bonds	11,344,206	9,821,599	11,713,034
20.0007. Transfer of mortgage loans to bonds	2,801,548		
20.0008. Transfer of partnerships to stock	524,136		
20.0009. Transfer of mortgage loans to partnerships and limited liability companies	51,000	40,200,000	40,200,000

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

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

20.0010. Bonds transferred to mortgage loans .....	.....	.....625,966,172	.....625,966,172
20.0011. Transfer of partnerships to common stocks - subsidiaries and affiliates .....	.....	.....284,717,390	.....227,109,719
20.0012. Transfer of partnerships to bonds .....	.....	.....	.....187,357,404
20.0013. Transfer of common stocks unaffiliated to common stocks - subsidiaries and affiliates .....	.....	.....	.....97,458,165
20.0014. Deferred gain on real estate .....	.....	.....16,134,760	.....16,134,760
20.0015. Common stock purchased as consideration for cash equivalents .....	.....	.....	.....224
20.0016. Partnerships and limited liability companies transferred to bonds .....	.....	.....173,154,514	.....
20.0017. Cash equivalents transferred to bonds .....	.....	.....5,009,911	.....

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	7,203,367,654	7,841,556,324	11,049,356,155
3. Ordinary individual annuities	9,053,872,145	6,494,429,302	10,415,834,474
4. Credit life (group and individual)			
5. Group life insurance	175,691,687	104,551,646	139,347,566
6. Group annuities	4,776,420,021	9,786,111,341	13,133,132,079
7. A & H - group	400,101	498,929	633,884
8. A & H - credit (group and individual)			
9. A & H - other	580,544,734	585,549,677	764,002,431
10. Aggregate of all other lines of business			
11. Subtotal (Lines 1 through 10)	21,790,296,342	24,812,697,220	35,502,306,589
12. Fraternal (Fraternal Benefit Societies Only)			
13. Subtotal (Lines 11 through 12)	21,790,296,342	24,812,697,220	35,502,306,589
14. Deposit-type contracts	4,583,161,802	3,831,538,241	5,109,590,954
15. Total (Lines 13 and 14)	26,373,458,144	28,644,235,461	40,611,897,543
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 #	2023	2022
NET INCOME					
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ (401,138,917)	\$ 732,240,859
(2) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(3) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	\$ <u>(401,138,917)</u>	\$ <u>732,240,859</u>
SURPLUS					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 29,029,008,245	\$ 27,941,058,515
(6) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(7) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-	-
(8) NAIC SAP (5-6-7=8)	XXX	XXX	XXX	\$ <u>29,029,008,245</u>	\$ <u>27,941,058,515</u>

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

c. Accounting policy:

(1) No change

(2) Bonds are generally valued at amortized cost using the constant yield interest method with the exception of NAIC Category 6 bonds, which are in or near default, and certain residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), which are rated by outside modelers, which are carried at the lower of amortized cost or fair value. NAIC ratings are applied to bonds and other securities. Categories 1 and 2 are considered investment grade, while Categories 3 through 6 are considered below investment grade. Bond transactions are recorded on a trade date basis, except for private placement bonds, which are recorded on the funding date.

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

(3-5) No change

(6) For loan-backed and structured securities, such as asset-backed securities, mortgage-backed securities, including RMBS and CMBS, 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, 2023, 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
Common stocks	\$ 18,807,902	\$ 18,807,902	\$ 18,807,902
Partnerships and LLCs	14,367,337	14,367,337	14,367,337
Derivative assets		(124,676,448)	(124,676,448)
Investment income due and accrued	229,821,618	229,821,618	229,821,618
Policyholders' reserves	(142,463,040)	(142,463,040)	142,463,040
Derivative liabilities		7,106,192	(7,106,192)
Other Liabilities	(2,165,017)	(2,165,017)	2,165,017
Total	<u>\$ 118,368,800</u>	<u>\$ 798,544</u>	

Of the \$798,544 increase to surplus for prior years' errors, \$118,368,800 was recorded as prior period adjustments and \$117,570,256 was recorded as a change in net unrealized capital gains (losses), net of taxes.

NOTES TO FINANCIAL STATEMENTS

For the nine months ended September 30, 2022, 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
Policyholders' reserves	(58,074,882)	(58,074,882)	58,074,882
Cash, cash equivalents and short-term investments	(3,626,087)	(3,626,087)	(3,626,087)
Total	\$ (61,700,969)	\$ (61,700,969)	

Of the \$61,700,969 decrease to surplus for prior years' errors, \$61,700,969 was recorded as prior period adjustments, net of taxes.

b. Adoption of new accounting standards:

In August 2023, the NAIC adopted INT 23-01T — Net Negative (Disallowed) Interest Maintenance Reserve (IMR) ("INT 23-01T"). INT 23-01T provides optional, limited-term guidance for the assessment of net negative (disallowed) IMR for up to 10% of adjusted general account capital and surplus. An insurer's capital and surplus must first be adjusted to exclude certain "soft assets" including net positive goodwill, electronic data processing equipment and operating system software, net deferred tax assets and admitted net negative (disallowed) IMR. An insurer will only be able to admit the negative IMR if the insurer's risk-based capital is over 300% authorized control level after adjusting to remove the assets described above.

As adopted, negative IMR may be admitted first in the insurer's general account and then, if all disallowed IMR in the general account is admitted and the percentage limit is not reached, to the separate account proportionately between insulated and noninsulated accounts. If the insurer can demonstrate historical practice in which acquired gains from derivatives were also reversed to IMR (as liabilities) and amortized, there is no exclusion for derivatives losses. INT 23-01T was adopted by the Company in October 2023 and will be effective through December 31, 2025. To the extent the Company's IMR balance is a net negative, the effects of INT 23-01T will be reflected in the Company's financial position, results of operations, and financial statement disclosures. The Company has adopted this guidance and the adoption resulted in an admitted disallowed IMR of \$926,910,218 for the Company.

In August 2023, the NAIC adopted revisions to clarify and incorporate a new bond definition within disclosures SSAP No. 26 – Bonds, SSAP No. 43 – Asset-Backed Securities, and other related SSAPs, effective January 1, 2025. The revisions were issued in connection with its principle-based bond definition project, the Bond Project.

The Bond Project began in October 2020 through the development of a principle-based bond definition to be used for all securities in determining whether they qualify for reporting on the statutory annual statement Schedule D. Within the new bond definition, bonds are classified as an "issuer credit obligation" or an "asset-backed security." An "issuer credit obligation" is defined as a bond where repayment is supported by the general creditworthiness of an operating entity, and an "asset-backed security" is defined as a bond issued by an entity created for the primary purpose of raising capital through debt backed by financial assets. The revisions to SSAP No. 26 reflect the principle-based bond definition, and SSAP No. 43 provides accounting and reporting guidance for investments that qualify as asset-backed securities under the new bond definition. Upon adoption, investments that do not qualify as bonds will not be permitted to be reported as bonds on Schedule D, Part 1 thereafter as there will be no grandfathering for existing investments that do not qualify under the revised SSAPs. The Company is currently assessing the impacts of the adopted SSAP No. 26, SSAP No. 43 and other related SSAPs in relation to the financial statements.

Note 3 – Business Combinations and Goodwill - No change

Note 4 – Discontinued Operations - No change

Note 5 – Investments

a. Mortgage loans, including mezzanine real estate loans

- (5) Investment in impaired loans with or without allowance for credit losses and impaired loans subject to a participant or co-lender mortgage loan agreement for which the reporting entity is restricted from unilaterally foreclosing on the mortgage loan:

	Residential		Commercial		Mezzanine	Total
	Farm	Insured	All Other	Insured			All Other
a. 2023						
1. With allowance for credit Losses	\$ -	\$ -	\$ -	\$ -	\$ 178,958,202	\$ -
2. No allowance for credit Losses	-	-	-	-	4,036,546	4,036,546
3. Total (1+2)	-	-	-	-	182,994,748	182,994,748
4. Subject to a participant or co-lender mortgage loan agreement for which the reporting entity is restricted from unilaterally foreclosing on the mortgage loan	-	-	-	-	-	-

NOTES TO FINANCIAL STATEMENTS

b. 2022							
1. With allowance for credit							
Losses	\$	- \$	- \$	- \$	- \$	\$	- \$
2. No allowance for credit							
Losses	-	-	-	-	14,383,673	-	14,383,673
3. Total (1+2)	-	-	-	-	14,383,673	-	14,383,673
4. Subject to a participant or co-lender mortgage loan agreement for which the reporting entity is restricted from unilaterally foreclosing on the mortgage loan	-	-	-	-	-	-	-

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

	Residential			Commercial		Mezzanine	Total	
	Farm	Insured	All Other	Insured	All Other			
a. 2023								
1. Average recorded Investment	\$	- \$	- \$	- \$	- \$	4,431,272 \$	- \$	4,431,272
2. Interest income Recognized	-	-	-	-	-	-	-	-
3. Recorded investment on nonaccrual status	-	-	-	-	4,036,546	-	-	4,036,546
4. Amount of interest income recognized using a cash-basis method of accounting	-	-	-	-	-	-	-	-
b. 2022								
1. Average recorded Investment	\$	- \$	- \$	- \$	- \$	15,399,942 \$	- \$	15,399,942
2. Interest income Recognized	-	-	-	-	774,774	-	-	774,774
3. Recorded investment on nonaccrual status	-	-	-	-	14,383,673	-	-	14,383,673
4. Amount of interest income recognized using a cash-basis method of accounting	-	-	-	-	-	-	-	-

	September 30, 2023	December 31, 2022
(7) Allowance for credit losses:		
a. Balance at beginning period	\$ 0	\$ 0
b. Additions charged to operations	(52,303,976)	(7,291,634)
c. Direct write-downs charged against the allowances	789,452	3,897,317
d. Recoveries of amounts previously charged off	12,786,072	3,394,317
e. Balance at end of period	<u>\$ (38,728,452)</u>	<u>\$ -</u>

- (8) As of September 30, 2023, the Company did not have any mortgage loans derecognized as a result of foreclosure.

b. Debt restructuring - No change

c. Reverse mortgages - No change

d. Loan-backed securities:

- (1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.

- (2) The following contains loan-backed and structured securities that recognized other-than-temporary impairments (OTTI) classified on the following bases for recognizing OTTI:

NOTES TO FINANCIAL STATEMENTS

	(1)	(2)		(3)
	Amortized Cost Basis Before OTTI	OTTI Recognized in Loss		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	56,797,190	-	10,797,613	45,999,577
c. Total first quarter	<u>\$ 56,797,190</u>	<u>\$ -</u>	<u>\$ 10,797,613</u>	<u>\$ 45,999,577</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	16,432,522	-	476,558	15,955,964
f. Total second quarter	<u>\$ 16,432,522</u>	<u>\$ -</u>	<u>\$ 476,558</u>	<u>\$ 15,955,964</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	24,928,008	-	862,343	24,065,665
i. Total third quarter	<u>\$ 24,928,008</u>	<u>\$ -</u>	<u>\$ 862,343</u>	<u>\$ 24,065,665</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>\$ 12,136,514</u>	

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

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

CUSIP	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value at Time of OTTI	Date of Financial Instrument Where Reported
12624QAC7	\$ 3,512,422	\$ 3,120,715	\$ (391,707)	\$ 3,120,715	\$ 1,664,875	March 31, 2023
12624SAE9	2,546,182	2,252,873	(293,309)	2,252,873	672,000	March 31, 2023
36192RAL6	2,950,000	1,475,000	(1,475,000)	1,475,000	527,313	March 31, 2023
040104RV5	1,466,218	1,404,587	(61,631)	1,404,587	1,357,561	March 31, 2023
040104TF8	44,673	40,179	(4,494)	40,179	34,156	March 31, 2023
040104TG6	471,373	395,907	(75,465)	395,907	442,138	March 31, 2023
04012XAC9	136,023	130,363	(5,660)	130,363	111,736	March 31, 2023
1248MBAF2	12,589,914	5,496,141	(7,093,773)	5,496,141	5,479,168	March 31, 2023
1248MGAJ3	43,914	42,609	(1,305)	42,609	35,260	March 31, 2023
17311YAC7	1,273,018	1,228,216	(44,802)	1,228,216	1,264,914	March 31, 2023
30247DAD3	572,150	552,362	(19,788)	552,362	512,472	March 31, 2023
35729RAE6	3,632,752	3,523,491	(109,261)	3,523,491	3,272,827	March 31, 2023
40431KAE0	2,092,929	2,043,034	(49,895)	2,043,034	2,095,485	March 31, 2023
45071KDD3	419,879	359,858	(60,022)	359,858	365,022	March 31, 2023
46629NAC7	34,588	32,979	(1,610)	32,979	27,783	March 31, 2023
46630KAA4	158,522	155,152	(3,370)	155,152	149,476	March 31, 2023
617463AA2	8,733	7,949	(785)	7,949	6,705	March 31, 2023
61749BAB9	61,518	60,870	(648)	60,870	64,742	March 31, 2023
61750FAE0	412,694	394,112	(18,582)	394,112	366,377	March 31, 2023
61750MAB1	3,264	3,129	(136)	3,129	3,014	March 31, 2023
61755AAB2	3,183	2,639	(544)	2,639	2,526	March 31, 2023
86359DXD4	193,613	183,061	(10,552)	183,061	184,312	March 31, 2023
86363HAB8	36,193	34,244	(1,949)	34,244	30,923	March 31, 2023
92926SAB2	493	381	(111)	381	382	March 31, 2023

NOTES TO FINANCIAL STATEMENTS

93934XAB9	137,528	122,528	(15,000)	122,528	129,850	March 31, 2023
12668ALV5	1,990,831	1,755,977	(234,854)	1,755,977	1,754,077	March 31, 2023
22540VG71	36,270	36,232	(38)	36,232	37,823	March 31, 2023
22943HAD8	3,510,613	3,380,974	(129,638)	3,380,974	1,886,340	March 31, 2023
32053LAA0	19,363	19,262	(101)	19,262	18,644	March 31, 2023
45254TRX4	23,933	23,574	(359)	23,574	23,161	March 31, 2023
45254TSM7	615,674	594,492	(21,182)	594,492	528,927	March 31, 2023
45660LAU3	57,004	56,426	(578)	56,426	55,897	March 31, 2023
45660LYW3	797,875	786,087	(11,788)	786,087	724,845	March 31, 2023
466247XE8	622,921	612,163	(10,758)	612,163	537,075	March 31, 2023
525221AJ6	561,909	502,260	(59,649)	502,260	551,875	March 31, 2023
61915RBZ8	178,926	178,879	(47)	178,879	164,881	March 31, 2023
65535VRK6	479,926	469,432	(10,494)	469,432	495,515	March 31, 2023
75115DAH8	3,502	3,266	(235)	3,266	3,118	March 31, 2023
761118FM5	1,722,865	1,583,656	(139,209)	1,583,656	1,584,522	March 31, 2023
76112BUE8	107,208	96,659	(10,549)	96,659	122,032	March 31, 2023
855541AC2	219,356	180,352	(39,005)	180,352	226,114	March 31, 2023
86359BLQ2	792,449	779,863	(12,586)	779,863	701,652	March 31, 2023
92978EAA2	83,791	81,555	(2,236)	81,555	79,259	March 31, 2023
92979DAA3	15,795	15,379	(416)	15,379	15,469	March 31, 2023
41161PWB5	723,595	713,315	(10,280)	713,315	587,280	March 31, 2023
45660N5H4	1,202,840	1,156,288	(46,553)	1,156,288	1,159,986	March 31, 2023
45660NT88	14,960	14,830	(130)	14,830	14,372	March 31, 2023
92922F5T1	1,438,953	1,412,027	(26,926)	1,412,027	1,244,390	March 31, 2023
939336X65	1,599,517	1,419,593	(179,924)	1,419,593	1,427,509	March 31, 2023
05949CCB0	34,367	34,278	(89)	34,278	35,010	March 31, 2023
32051DCJ9	44,524	44,461	(63)	44,461	43,405	March 31, 2023
36228FWU6	150,442	141,049	(9,393)	141,049	147,677	March 31, 2023
362341VU0	1,530,315	1,520,759	(9,556)	1,520,759	1,428,432	March 31, 2023
36298XAA0	4,788,213	4,743,999	(44,214)	4,743,999	4,501,267	March 31, 2023
5899292N7	48,660	47,935	(724)	47,935	46,874	March 31, 2023
589929N38	42,499	40,236	(2,263)	40,236	39,978	March 31, 2023
59020UNZ4	89,539	75,877	(13,662)	75,877	85,656	March 31, 2023
86359DME4	439,975	415,180	(24,794)	415,180	400,433	March 31, 2023
929227ZF6	6,804	883	(5,921)	883	3,055	March 31, 2023
00442FAB8	50,571	38,681	(11,890)	38,681	8,265	June 30, 2023
040104RV5	1,421,615	1,379,721	(41,894)	1,379,721	1,316,932	June 30, 2023
1248MGAJ3	42,545	42,165	(380)	42,165	34,889	June 30, 2023
17311YAC7	1,241,873	1,206,602	(35,271)	1,206,602	1,232,111	June 30, 2023
40431KAE0	2,053,478	2,006,843	(46,635)	2,006,843	2,030,117	June 30, 2023
45071KDD3	360,529	358,225	(2,304)	358,225	357,570	June 30, 2023
61750FAE0	396,971	394,270	(2,701)	394,270	358,577	June 30, 2023
84752CAE7	555,369	510,004	(45,365)	510,004	679,671	June 30, 2023
86359DXD4	182,513	169,184	(13,329)	169,184	170,546	June 30, 2023
92926SAB2	385	380	(5)	380	379	June 30, 2023
12667FYL3	212,185	199,941	(12,244)	199,941	201,624	June 30, 2023
12669FKR3	40,116	37,606	(2,510)	37,606	37,952	June 30, 2023
18974BAA7	131,289	130,311	(978)	130,311	133,783	June 30, 2023
18974BAN9	67,323	64,834	(2,489)	64,834	69,970	June 30, 2023
22540VG71	35,173	35,094	(79)	35,094	35,963	June 30, 2023
23321P6A1	1,405,020	1,371,044	(33,976)	1,371,044	1,329,368	June 30, 2023
32053LAA0	18,926	18,853	(72)	18,853	18,262	June 30, 2023
45660LAU3	69,258	65,015	(4,243)	65,015	67,725	June 30, 2023
466247XE8	578,949	575,151	(3,797)	575,151	499,997	June 30, 2023
525221AJ6	502,913	502,636	(277)	502,636	524,046	June 30, 2023
61915RBZ8	173,679	173,638	(41)	173,638	155,279	June 30, 2023
86358HHX0	176,678	173,936	(2,743)	173,936	129,387	June 30, 2023
92978EAA2	80,634	80,479	(156)	80,479	72,910	June 30, 2023
93935PAH2	112,081	105,729	(6,352)	105,729	109,259	June 30, 2023
05946XYP2	267,693	266,462	(1,231)	266,462	225,954	June 30, 2023
86360UAF3	977,832	929,807	(48,026)	929,807	761,473	June 30, 2023
92922FWU8	357,222	355,654	(1,568)	355,654	335,837	June 30, 2023
12669GTE1	4,194	3,937	(257)	3,937	4,201	June 30, 2023
32051DCJ9	41,478	41,458	(20)	41,458	39,754	June 30, 2023
36298XAA0	4,842,551	4,688,750	(153,800)	4,688,750	4,460,917	June 30, 2023

NOTES TO FINANCIAL STATEMENTS

92922FBW7	31,480	29,553	(1,927)	29,553	29,205	June 30, 2023
05535DCF9	1,782,860	1,774,615	(8,245)	1,774,615	1,615,108	September 30, 2023
1248MGAJ3	42,122	40,755	(1,367)	40,755	34,109	September 30, 2023
17311YAC7	1,214,183	1,173,580	(40,603)	1,173,580	1,158,277	September 30, 2023
30247DAD3	544,986	530,143	(14,843)	530,143	485,430	September 30, 2023
40431KAE0	2,020,232	1,964,115	(56,116)	1,964,115	1,941,678	September 30, 2023
46629NAC7	33,121	32,454	(666)	32,454	26,826	September 30, 2023
46630KAA4	152,848	149,286	(3,562)	149,286	140,157	September 30, 2023
57643LMP8	664,369	615,398	(48,971)	615,398	616,435	September 30, 2023
590212AB2	33,970	29,921	(4,048)	29,921	33,420	September 30, 2023
86359DXD4	169,272	159,443	(9,829)	159,443	163,801	September 30, 2023
86363HAB8	33,650	32,774	(876)	32,774	29,320	September 30, 2023
93934XAB9	123,880	115,382	(8,499)	115,382	121,783	September 30, 2023
05535DAN4	674,819	518,140	(156,679)	518,140	538,850	September 30, 2023
12667FYS8	83,749	70,404	(13,344)	70,404	83,180	September 30, 2023
12667GKG7	44,892	43,316	(1,576)	43,316	45,430	September 30, 2023
22943HAD8	3,333,227	3,209,290	(123,937)	3,209,290	1,862,665	September 30, 2023
32053LAA0	18,494	18,440	(54)	18,440	17,269	September 30, 2023
43739EAP2	1,209,064	1,182,999	(26,065)	1,182,999	1,133,684	September 30, 2023
45254TSM7	541,921	538,498	(3,423)	538,498	461,187	September 30, 2023
45660LYW3	775,781	720,142	(55,639)	720,142	694,930	September 30, 2023
466247XE8	565,724	560,689	(5,036)	560,689	492,033	September 30, 2023
61749LAN1	101,589	90,612	(10,977)	90,612	106,962	September 30, 2023
61915RBZ8	164,901	163,993	(909)	163,993	148,770	September 30, 2023
65535VRK6	471,315	442,770	(28,545)	442,770	467,415	September 30, 2023
761118RJ9	89,235	81,669	(7,566)	81,669	67,865	September 30, 2023
86358HHX0	168,641	166,229	(2,411)	166,229	118,809	September 30, 2023
86359A6A6	484,213	466,106	(18,107)	466,106	432,201	September 30, 2023
92978EAA2	80,092	77,179	(2,913)	77,179	72,870	September 30, 2023
126694YM4	579,078	572,556	(6,522)	572,556	496,669	September 30, 2023
41161PTP8	204,192	176,002	(28,191)	176,002	158,045	September 30, 2023
41161PWB5	670,938	662,621	(8,317)	662,621	557,761	September 30, 2023
61915RBB1	1,481,939	1,476,700	(5,240)	1,476,700	1,345,239	September 30, 2023
17309FAE8	73,197	54,698	(18,498)	54,698	75,336	September 30, 2023
362341VU0	1,378,634	1,378,467	(167)	1,378,467	1,232,954	September 30, 2023
36298XAA0	4,569,319	4,451,723	(117,596)	4,451,723	4,338,427	September 30, 2023
576433NH5	347,560	324,557	(23,003)	324,557	428,582	September 30, 2023
Totals	\$ 98,157,720	\$ 86,021,206	\$ (12,136,513)	\$ 86,021,206	\$ 76,652,967	

(4) As of September 30, 2023, 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 is as follows:

a. The aggregate amount of unrealized losses:	
1. Less than 12 months	\$ (104,717,176)
2. 12 months or longer	\$ (1,446,218,140)
b. The aggregate related fair value of securities with unrealized losses:	
1. Less than 12 months	\$ 2,941,959,275
2. 12 months or longer	\$ 16,761,214,216

(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 as of September 30, 2023.

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 liabilities as repurchase agreements approximates the fair value.

NOTES TO FINANCIAL STATEMENTS

(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	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. Open – No Maturity	-	-	-	-
2. Overnight	-	-	-	-
3. 2 Days to 1 Week	-	-	-	-
4. > 1 Week to 1 Month	\$ 771,927,581	\$ 596,000,000	\$ -	\$ -
5. > 1 Month to 3 Months	\$ 3,053,763,802	\$ 3,614,915,774	\$ 3,562,886,017	\$ -
7. > 1 Year	-	-	-	-

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
b. Ending Balance				
1. Open – No Maturity	-	-	-	-
2. Overnight	-	-	-	-
3. 2 Days to 1 Week	-	-	-	-
4. > 1 Week to 1 Month	\$ 397,625,000	\$ -	\$ -	\$ -
5. > 1 Month to 3 Months	\$ 2,144,361,728	\$ 2,910,202,261	\$ 3,562,886,017	\$ -
7. > 1 Year	-	-	-	-

(4) The company did not have any repurchase agreements where securities sold and/or acquired resulted in default as of September 30, 2022.

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

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. BACV	XXX	XXX	XXX	XXX
2. Nonadmitted - Subset of BACV	XXX	XXX	XXX	XXX
3. Fair Value	\$ 3,053,763,802	\$ 3,614,915,774	\$ 3,562,886,017	\$ -

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
b. Ending Balance				
1. BACV	\$ 3,018,615,774	\$ 2,910,202,261	\$ 3,562,886,017	\$ -
2. Nonadmitted - Subset of BACV	-	-	-	-
3. Fair Value	\$ 3,018,615,774	\$ 2,910,202,261	\$ 3,562,886,017	\$ -

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

ENDING BALANCE		1 NONE	2 NAIC 1	3 NAIC 2	4 NAIC 3
a.	Bonds – BACV	\$ -	\$ 3,562,886,017	\$ -	\$ -
b.	Bonds – FV	\$ -	\$ 3,562,886,017	\$ -	\$ -
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	\$ -	\$ 3,562,886,017	\$ -	\$ -
q.	Total Assets – FV	\$ -	\$ 3,562,886,017	\$ -	\$ -

ENDING BALANCE		5 NAIC 4	6 NAIC 5	7 NAIC 6	8 NON- ADMITTED
a.	Bonds – BACV	-	-	-	-
b.	Bonds – FV	-	-	-	-
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	-	-	-	-
q.	Total Assets – FV	-	-	-	-

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

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

NOTES TO FINANCIAL STATEMENTS

(7) Collateral Received - Secured Borrowing

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. Cash	\$ 129,727,704	\$ 88,818,692	\$ 110,420,174	\$ -
2. Securities (FV)	\$ 3,065,998,409	\$ 3,030,633,372	\$ 3,247,387,746	\$ -
b. Ending Balance				
1. Cash	\$ 18,780,877	\$ 4,295,004	\$ 110,420,174	\$ -
2. Securities (FV)	\$ 3,021,946,900	\$ 2,918,204,480	\$ 2,717,312,288	\$ -

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

ENDING BALANCE		1 NONE	2 NAIC 1	3 NAIC 2	4 NAIC 3
a.	Cash	\$ 110,420,174	\$ -	\$ -	\$ -
b.	Bonds – FV	-	2,717,312,288	-	-
c.	LB & SS – FV	-	-	-	-
d.	Preferred Stock – FV	-	-	-	-
e.	Common Stock	-	-	-	-
f.	Mortgage Loans – FV	-	-	-	-
g.	Real Estate – FV	-	-	-	-
h.	Derivatives – FV	-	-	-	-
i.	Other Invested Assets – FV	-	-	-	-
j.	Total Collateral Assets - FV (Sum of a through i)	\$ 110,420,174	\$ 2,717,312,288	\$ -	\$ -

ENDING BALANCE		5 NAIC 4	6 NAIC 5	7 NAIC 6	8 DOES NOT QUALIFY AS ADMITTED
a.	Cash	\$ -	\$ -	\$ -	\$ -
b.	Bonds – FV	-	-	-	-
c.	LB & SS – FV	-	-	-	-
d.	Preferred Stock – FV	-	-	-	-
e.	Common Stock	-	-	-	-
f.	Mortgage Loans – FV	-	-	-	-
g.	Real Estate – FV	-	-	-	-
h.	Derivatives – FV	-	-	-	-
i.	Other Invested Assets – FV	-	-	-	-
j.	Total Collateral Assets - FV (Sum of a through i)	\$ -	\$ -	\$ -	\$ -

(9) Allocation of Aggregate Collateral by Remaining Contractual Maturity

	FAIR VALUE
a. Overnight and Continuous	\$ -
b. 30 Days or Less	\$ -
c. 31 to 90 Days	\$ 3,085,708,081
d. > 90 Days	\$ -

(10) The company did not have any repurchase agreements where cash collateral received was reinvested as of September 30, 2023.

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

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. Cash (Collateral – All)	\$ 129,727,704	\$ 88,818,692	\$ 110,420,174	\$ -
2. Securities Collateral (FV)	\$ 3,065,998,409	\$ 3,030,633,372	\$ 3,247,387,746	\$ -
b. Ending Balance				
1. Cash (Collateral – All)	\$ 18,780,877	\$ 4,295,004	\$ 110,420,174	\$ -
2. Securities Collateral (FV)	\$ 3,021,946,900	\$ 2,918,204,480	\$ 2,717,312,288	\$ -

- 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 as of September 30, 2023.
- h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale as of September 30, 2023.
- 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 as of September 30, 2023.
- 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 as of September 30, 2023.
- 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 as of September 30, 2023.

NOTES TO FINANCIAL STATEMENTS

o. 5GI Securities:

Investment	Number of 5GI Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	215	191	\$1,293,505,163	\$1,456,580,250	\$1,261,049,336	\$1,434,388,058
(2) LB&SS - AC						
(3) Preferred Stock - AC	3	3	7,129,836	7,014,496	12,567,571	9,920,777
(4) Preferred Stock - FV	1		8,396		8,396	
(5) Total (1+2+3+4)	219	194	\$1,300,643,395	\$1,463,594,746	\$1,273,625,303	\$1,444,308,835

AC - Amortized Cost FV - Fair Value

p. Short sales - The Company does not engage in short sale transactions.

q. Prepayment penalty and acceleration fees:

	Nine Months Ended September 30, 2023	
	General Account	Separate Account
1. Number of CUSIPS	18	1
2. Aggregate amount of investment income	\$ 1,301,450	\$ 5,594

r. Reporting entity's share of cash pool by asset type – The Company does not have cash in a qualified cash pool.

Note 6 – Joint Ventures, Partnerships and Limited Liability Companies - No change**Note 7 – Investment Income** – No change**Note 8 – Derivative Instruments**

- The Company did not have any deferred derivative premium payments under SSAP No. 86.
- The Company did not account for any derivatives under SSAP No. 108.

Note 9 – Income Taxes – No change**Note 10 – Information Concerning Parent, Subsidiaries and Affiliates**

- a-c. MassMutual Holding LLC (MMHLLC) paid \$730,000,000 in dividends to MassMutual for the nine months ended September 30, 2023, \$450,000,000 of which were declared in 2022, and paid \$604,000,000 in dividends to MassMutual for the nine months ended September 30, 2022, which were declared in 2021.

MassMutual contributed capital of \$104,163,527 to MMHLLC for the nine months ended September 30, 2023 and \$526,162,476 for the nine months ended September 30, 2022.

In August 2023, MassMutual made capital contributions of \$13,650,000 to HavenTech Asia.

In May 2023, MassMutual made capital contributions of \$25,000,000 to ITPS Holding LLC.

In March 2023, MassMutual made capital contributions of \$87,814,303 to MassMutual Mortgage Lending LLC, \$50,000,000 to MMIH Bond Holdings LLC, and \$13,100,000 to MML CM LLC.

In February 2023, MassMutual made capital contributions of \$45,000,000 to HITPS LLC.

d-f. No change

- g. Subsidiaries of MMHLLC 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-o. No change

Note 11 – Debt

- No change
- Federal Home Loan Bank agreements:
 - 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 \$6,000,000,000. The Company's unused capacity was \$3,891,767,569 as of September 30, 2023.

NOTES TO FINANCIAL STATEMENTS

(2) FHLB Boston capital

a. Aggregate totals:

		September 30, 2023		
		1 Total 2+3	2 General Account	3 Separate Account
1. Current Year:				
(a) Membership stock - Class A	\$	-	-	-
(b) Membership stock - Class B		5,000,000	5,000,000	-
(c) Activity Stock		84,000,000	84,000,000	-
(d) Excess Stock		2,670,000	2,670,000	-
(e) Aggregate Total		\$ 91,670,000	\$ 91,670,000	\$ -
(f) Actual or Estimated Borrowing Capacity as Determined by the Insurer	\$	6,000,000,000	\$ 6,000,000,000	\$ -
2. Prior Year-end:				
(a) Membership stock - Class A	\$	-	-	-
(b) Membership stock - Class B		5,000,000	5,000,000	-
(c) Activity Stock		84,000,000	84,000,000	-
(d) Excess Stock		2,670,000	2,670,000	-
(e) Aggregate Total		\$ 91,670,000	\$ 91,670,000	\$ -
(f) Actual or Estimated Borrowing Capacity as determined by the Insurer	\$	6,000,000,000	\$ 6,000,000,000	\$ -

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

Nine Months Ended September 30, 2023						
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	5,000,000	5,000,000	-	-	-	-

(3) Collateral pledged to FHLB:

a. Amount pledged as of September 30, 2023:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 4,013,523,197	\$ 2,886,752,868	\$ 2,108,232,431

2. Current year general account:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 4,013,523,197	\$ 2,886,752,868	\$ 2,108,232,431

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	\$ 3,663,321,862	\$ 2,536,224,711	\$ 2,110,751,541

b. Maximum amount pledged for the nine months ended September 30, 2023:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 4,158,328,169	\$ 2,832,776,613	\$ 2,113,979,041

NOTES TO FINANCIAL STATEMENTS

2. Current year general account:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 4,158,328,169	\$ 2,832,776,613	\$ 2,113,979,041

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	\$ 3,879,407,520	\$ 2,786,612,064	\$ 2,113,805,888

(4) Borrowing from FHLB:

a. Amount:

1. Current year:

	September 30, 2023			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	2,108,232,431	2,108,232,431	-	2,108,232,431
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 2,108,232,431</u>	<u>\$ 2,108,232,431</u>	<u>\$ -</u>	<u>\$ 2,108,232,431</u>

2. Prior Year-end:

	December 31, 2022			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	2,110,751,541	2,110,751,541	-	2,110,751,541
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 2,110,751,541</u>	<u>\$ 2,110,751,541</u>	<u>\$ -</u>	<u>\$ 2,110,751,541</u>

b. Maximum Amount:

	Nine Months Ended September 30, 2023		
	1 Total 2+3	2 General Account	3 Separate Account
1. Debt	\$ -	\$ -	\$ -
2. Funding	2,113,979,041	2,113,979,041	-
3. Other	-	-	-
4. Aggregate	<u>\$ 2,113,979,041</u>	<u>\$ 2,113,979,041</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

- (4) Components of net periodic benefit cost/(benefit)

For Nine Months Ended September 30,

NOTES TO FINANCIAL STATEMENTS

	2023	2022	2023	2022	2023	2022
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits per SSAP No 11	
a. Service cost	\$ 64,869,194	\$ 72,738,464	\$ 5,850,000	\$ 7,200,000	\$ -	\$ -
b. Interest cost	93,658,036	64,298,970	11,625,000	7,725,000	-	-
c. Expected return on plan assets	(126,407,339)	(145,214,563)	-	-	-	-
d. Transition asset or obligation	-	-	-	-	-	-
e. Gains and losses	19,988,924	6,995,366	(6,525,000)	(1,200,000)	-	-
f. Prior service cost or (benefit)	-	-	(4,125,000)	(4,125,000)	-	-
h. Total net periodic benefit cost/(benefit)	\$ 52,108,815	\$ (1,181,763)	\$ 6,825,000	\$ 9,600,000	\$ -	\$ -

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

a-c. No change

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

e-m. 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.

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 2023 or 2022.

(3) No change

(4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2023 or 2022.

(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, 2023 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:

NOTES TO FINANCIAL STATEMENTS

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

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

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

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

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

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

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.

NOTES TO FINANCIAL STATEMENTS

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

	September 30, 2023				Total
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	
Financial assets:					
Bonds:					
Special revenue	\$ -	\$ 1,625,000	\$ -	\$ -	\$ 1,625,000
Industrial and miscellaneous	65,664,706	75,316,881	174,124,644	-	315,106,231
Hybrid securities	-	699,525	-	-	699,525
Preferred stocks	22,655,270	-	60,125,400	-	82,780,670
Common stock - subsidiaries and affiliates	485,488,314	-	31,445,720	-	516,934,034
Common stock - unaffiliated	792,144,758	176,956	972,626,294	-	1,764,948,008
Derivatives:					
Interest rate swaps	-	23,154,617,177	-	-	23,154,617,177
Options	65,904,950	575,417,938	-	-	641,322,888
Currency swaps	-	2,784,988,014	-	-	2,784,988,014
Forward contracts	-	242,996,033	-	-	242,996,033
Credit default swaps	-	659,627	-	-	659,627
Financial futures	26,772,027	-	-	-	26,772,027
Separate account assets	33,541,183,664	15,435,631,611	1,669,795,375	-	50,646,610,650
Total financial assets carried at fair value	\$ 34,999,813,689	\$ 42,272,128,762	\$ 2,908,117,433	\$ -	\$ 80,180,059,884
Financial liabilities:					
Interest rate swaps	\$ -	\$ 17,682,041,191	\$ -	\$ -	\$ 17,682,041,191
Options	32,166,460	-	-	-	32,166,460
Currency swaps	-	110,744,321	-	-	110,744,321
Forward contracts	-	36,982,555	-	-	36,982,555
Credit default swaps	-	31,229,457	-	-	31,229,457
Financial futures	39,086,418	-	-	-	39,086,418
Total financial liabilities carried at fair value	\$ 71,252,878	\$ 17,860,997,524	\$ -	\$ -	\$ 17,932,250,402

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, 2023, there were derivative transfers between Level 2 and Level 1 for options and futures are priced using quoted marks. The Company does not have any financial instruments that were carried at NAV as a practical expedient.

NOTES TO FINANCIAL STATEMENTS

	December 31, 2022				Total
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	
Financial assets:					
Bonds:					
All other governments	\$ -	\$ 5,554,888	\$ -	\$ -	\$ 5,554,888
Special revenue	-	1,381,125	-	-	1,381,125
Industrial and miscellaneous	-	85,060,941	219,991,919	-	305,052,860
Preferred stocks	20,529,430	-	46,860,117	-	67,389,547
Common stock - subsidiaries and affiliates	109,945,579	-	349,974,518	-	459,920,097
Common stock - unaffiliated	506,886,908	-	970,148,972	-	1,477,035,880
Derivatives:					
Interest rate swaps	-	18,287,418,022	-	-	18,287,418,022
Options	29,969,900	608,882,832	-	-	638,852,732
Currency swaps	-	3,070,767,448	-	-	3,070,767,448
Forward contracts	-	13,803,075	-	-	13,803,075
Financial futures	21,108,555	-	-	-	21,108,555
Separate account assets	34,930,934,386	16,789,645,046	1,693,225,225	-	53,413,804,657
Total financial assets carried at fair value	\$ 35,619,374,758	\$ 38,862,513,377	\$ 3,280,200,751	\$ -	\$ 77,762,088,886
Financial liabilities:					
Interest rate swaps	\$ -	\$ 13,036,298,722	\$ -	\$ -	\$ 13,036,298,722
Options	5,952,000	-	-	-	5,952,000
Currency swaps	-	708,572,178	-	-	708,572,178
Forward contracts	-	236,132,392	-	-	236,132,392
Credit default swaps	-	12,319,618	-	-	12,319,618
Financial futures	2,985,920	-	-	-	2,985,920
Total financial liabilities carried at fair value	\$ 8,937,920	\$ 13,993,322,910	\$ -	\$ -	\$ 14,002,260,830

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

Financial assets:	Balance as of	Transfers ⁽¹⁾		Gains (Losses) in	Gains (Losses) in	Purchases	Issuances	Sales	Settlements	Balance as of
	01/01/2023	In	Out	Net Income	Surplus					9/30/2023
Bonds:										
Industrial and miscellaneous	\$ 219,761,776	\$ -	\$ (44,701,034)	\$ (2,617,831)	\$ (4,709,706)	\$ 17,447,110	\$ 1,833,550	\$ (277,597)	\$ (12,611,624)	\$ 174,124,644
Preferred stock	47,089,392	-	2,601,644	-	8,523,815	1,910,550	-	-	-	60,125,400
Common stock - subsidiaries and affiliates	-	-	(5,593,352)	-	(401,239,048)	75,378,489	12,925,112	-	-	31,445,720
Common stock - unaffiliated	349,974,519	43,805	(3,258,820)	23,691,674	(43,342,552)	35,014,676	19,253,051	(28,418,953)	(501,072)	972,626,294
Separate account assets	1,693,225,223	-	(2,635,364)	(12,980,331)	-	64,353,882	-	(71,266,717)	(901,317)	1,669,795,375
Total financial assets	\$ 3,280,195,396	\$ 43,805	\$ (53,586,926)	\$ 8,093,512	\$ (440,767,491)	\$ 194,104,707	\$ 34,011,713	\$ (99,963,267)	\$ (14,014,013)	\$ 2,908,117,433
Derivatives:										
Industrial and miscellaneous	\$ 186,869,899	\$ 63,585,571	\$ -	\$ 2,558,223	\$ (8,848,976)	\$ 19,170,175	\$ 8,598,716	\$ -	\$ (52,171,832)	\$ 219,761,776
Preferred stock	18,015,655	47,000,000	-	-	(17,926,263)	-	-	-	-	47,089,392
Common stock - subsidiaries and affiliates	253,282,028	-	(116,414,688)	(12,864,161)	110,495,297	(793,391,645)	979,949,809	(64,925,85)	(6,156,270)	349,974,519
Common stock - unaffiliated	753,425,003	416	(3,730,890)	27,616,461	2,294,443	326,642,527	3,111,577	(27,035,20)	(112,179,845)	970,144,486
Separate account assets	1,893,940,793	-	(12,868,618)	(173,960,223)	-	282,160,365	-	(295,557,3)	(489,724)	1,693,225,223
Total financial assets	\$ 3,105,533,378	\$ 110,585,987	\$ (133,014,196)	\$ (156,649,700)	\$ 86,014,501	\$ (165,418,578)	\$ 991,660,102	\$ (387,518,4)	\$ (170,997,671)	\$ 3,280,195,396

⁽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:

NOTES TO FINANCIAL STATEMENTS

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

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

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

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

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

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

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

NOTES TO FINANCIAL STATEMENTS

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

		September 30, 2023					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	\$	4,427,649,468	\$ 5,060,903,886	-	\$ 4,427,637,362	\$ 12,106	-	-
All other governments		1,015,005,048	1,251,170,750	-	985,165,268	29,839,780	-	-
States, territories and possessions		216,786,070	232,570,738	-	216,786,070	-	-	-
Political subdivisions		339,966,202	364,010,659	-	339,966,202	-	-	-
Special revenue		3,924,455,358	4,150,880,688	-	3,889,140,765	35,314,593	-	-
Industrial and miscellaneous		108,244,221,950	120,906,276,766	65,664,706	47,308,366,327	60,870,190,917	-	-
Parent, subsidiaries and affiliates		8,111,431,474	8,794,872,163	-	1,185,863,234	6,925,568,240	-	-
Preferred stocks		449,850,747	436,190,076	89,803,390	-	360,047,357	-	-
Common stocks - subsidiaries and affiliates ⁽¹⁾								
Common stocks - unaffiliated		516,934,034	516,934,034	485,488,314	-	31,445,720	-	-
Mortgage loans - commercial		1,764,948,008	1,764,948,008	792,144,758	176,956	972,626,294	-	-
Mortgage loans - residential		17,702,876,830	19,647,977,352	-	-	17,702,876,830	-	-
Cash, cash equivalents and short-term investments		4,258,568,563	4,581,127,088	-	-	4,258,568,563	-	-
Derivatives:								
Interest rate swaps		6,906,522,864	6,906,522,864	554,486,410	6,352,036,454	-	-	-
Options		16,757,588,904	23,159,745,007	-	16,757,588,904	-	-	-
Currency swaps		641,322,888	641,322,888	65,904,950	575,417,938	-	-	-
Forward contracts		2,784,988,014	2,803,923,236	-	2,784,988,014	-	-	-
Credit default swaps		242,996,033	242,996,033	-	242,996,033	-	-	-
Financial futures		1,333,542	873,542	-	1,333,542	-	-	-
Separate account assets		26,772,027	26,772,027	26,772,027	-	-	-	-
Financial liabilities:								
Repurchase agreements		50,646,610,651	50,646,610,651	33,541,183,664	15,435,631,611	1,669,795,375	-	-
Commercial paper		3,122,769,999	3,123,769,999	-	3,122,769,999	-	-	-
Guaranteed interest contracts		49,884,072	49,884,072	-	49,884,072	-	-	-
Group annuity contracts and other deposits		14,675,420,163	15,680,594,159	-	-	14,675,420,163	-	-
Individual annuity contracts		1,868,503,343	2,100,934,157	-	-	1,868,503,343	-	-
Supplementary contracts		20,755,889,227	21,844,482,588	-	-	20,755,889,227	-	-
Derivatives:								
Interest rate swaps		967,971,193	967,040,526	-	-	967,971,193	-	-
Options		17,682,041,190	18,281,806,397	-	17,682,041,191	-	-	-
Currency swaps		32,166,460	32,166,460	32,166,460	-	-	-	-
Forward contracts		576,328,550	576,328,550	-	576,328,550	-	-	-
Credit default swaps		36,982,555	36,982,555	-	36,982,555	-	-	-
Financial futures		31,490,961	31,366,729	-	31,490,961	-	-	-
		39,086,418	39,086,418	39,086,418	-	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$24,632,372,111

NOTES TO FINANCIAL STATEMENTS

December 31, 2022

	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	\$ 4,427,766,511	\$ 4,764,141,765	\$ -	\$ 4,427,676,771	\$ 89,740	\$ -	\$ -
All other governments	1,385,020,246	1,635,488,544	-	1,322,861,870	62,158,376	-	-
States, territories and possessions	241,029,806	248,419,799	-	241,029,806	-	-	-
Political subdivisions	388,165,728	404,416,301	-	388,165,728	-	-	-
Special revenue	4,110,747,489	4,186,668,736	-	4,101,957,597	8,789,892	-	-
Industrial and miscellaneous	105,790,586,118	117,023,317,719	42,325,191	45,769,408,257	59,978,852,670	-	-
Parent, subsidiaries and affiliates	7,956,165,771	8,182,767,682	-	1,014,933,180	6,941,232,591	-	-
Preferred stocks	445,941,513	451,411,752	45,250,616	-	400,690,897	-	-
Common stocks - subsidiaries and affiliates ⁽¹⁾	459,920,097	459,920,097	109,945,579	-	349,974,518	-	-
Common stocks - unaffiliated	1,477,035,880	1,477,035,880	506,886,908	-	970,148,972	-	-
Mortgage loans - commercial	19,151,961,603	20,755,372,546	-	-	19,151,961,603	-	-
Mortgage loans - residential	3,892,448,035	4,216,591,382	-	-	3,892,448,035	-	-
Cash, cash equivalents and short-term investments	5,568,063,455	5,568,063,455	419,730,608	5,148,332,847	-	-	-
Derivatives:							
Interest rate swaps	18,456,834,141	18,287,418,022	-	18,456,834,141	-	-	-
Options	638,852,732	638,852,732	29,969,900	608,882,832	-	-	-
Currency swaps	3,070,767,448	3,070,767,448	-	3,070,767,448	-	-	-
Forward contracts	13,803,075	13,803,075	-	13,803,075	-	-	-
Credit default swaps	460,000	-	-	460,000	-	-	-
Financial futures	21,108,555	21,108,555	21,108,555	-	-	-	-
Separate account assets	53,413,804,657	53,413,804,657	34,930,934,386	16,789,645,046	1,693,225,225	-	-
Financial liabilities:							
Repurchase agreements	3,041,983,723	3,041,983,723	-	3,041,983,723	-	-	-
Commercial paper	249,947,917	249,947,917	-	249,947,917	-	-	-
Guaranteed interest contracts	13,802,550,862	14,701,159,948	-	-	13,802,550,862	-	-
Group annuity contracts and other deposits	1,889,919,988	2,162,490,271	-	-	1,889,919,988	-	-
Individual annuity contracts	16,214,481,799	17,000,232,720	-	-	16,214,481,799	-	-
Supplementary contracts	1,139,882,636	1,138,650,972	-	-	1,139,882,636	-	-
Derivatives:							
Interest rate swaps	18,165,298,722	13,036,298,722	-	18,165,298,722	-	-	-
Options	5,952,000	5,952,000	5,952,000	-	-	-	-
Currency swaps	708,572,178	708,572,178	-	708,572,178	-	-	-
Forward contracts	236,132,392	236,132,392	-	236,132,392	-	-	-
Credit default swaps	12,574,665	13,004,716	-	12,574,665	-	-	-
Financial futures	2,985,920	2,985,920	2,985,920	-	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$24,222,743,540

- d. As of September 30, 2023 and December 31, 2022, 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:

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 2022 Annual Statement.

Insurance and underwriting risks

NOTES TO FINANCIAL STATEMENTS

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

Credit and other market risks

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

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

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

The long-term impact of the COVID-19 pandemic is dependent on numerous factors including, but not limited to, the length and severity of the pandemic, the efficacy and rate of vaccine adoption and therapeutics, the responses to the pandemic taken by governments and private sector businesses, and the impacts on MassMutual's policyholders, employees and counterparties. At its height, the pandemic led to significant economic disruption, including significant volatility in the U.S. and international markets, which had an adverse effect on MassMutual's business. The extent to which the COVID-19 pandemic continues to impact MassMutual's business will depend on future developments which are highly uncertain, including the emergence of future variants of COVID-19 and the efficacy of vaccines in the broader population (including with respect to future variants).

Political Uncertainties

Political events, domestically or internationally, may directly or indirectly trigger or exacerbate risks related to product offerings, profitability, or any of the risk factors described above. Whether those underlying risk factors are driven by geopolitics or not, the Company's dynamic approach to managing risks enables management to identify risks, internally and externally, develop mitigation plans, and respond to risks in an attempt to proactively reduce the potential impact of each underlying risk factor on the Company.

Other Disclosures

- 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:	Nine Months Ended September 30, 2023			
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 143,905,406	\$ 167,278,472	\$ 168,566,924	\$ 1,563,968
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	\$ 5,917,558	\$ 7,310,261	\$ 7,270,357	\$ 87,705
f. Other assets	-	-	-	-
g. Total	<u>\$ 149,822,964</u>	<u>\$ 174,588,733</u>	<u>\$ 175,837,281</u>	<u>\$ 1,651,673</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:	Year Ended December 31, 2022			
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 149,219,166	\$ 175,405,029	\$ 177,868,702	\$ 2,353,327
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	\$ 13,715,674	\$ 15,459,243	\$ 15,231,106	\$ 81,767
f. Other assets	-	-	-	-
g. Total	<u>\$ 162,934,841</u>	<u>\$ 190,864,272</u>	<u>\$ 193,099,808</u>	<u>\$ 2,435,094</u>

*The Company's Subsidiaries and Controlled Affiliates (SCA), C.M. Life Insurance Company (C.M. Life), has investments in Alt-A and subprime mortgages, as does C.M. Life's SCA, MML Bay State Insurance Company (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

h. As of September 30, 2023, the Company had \$926,910,218 of net negative (disallowed) IMR in aggregate and in the general account.

As of September 30, 2023, the Company had \$926,910,218 of negative IMR admitted in the general account.

As of September 30, 2023, the calculated adjusted general capital and surplus was \$26,015,233,471.

As of September 30, 2023, the percentage of adjusted general capital and surplus for which the admitted disallowed IMR represents was 4%.

When the Company sells bonds and recognizes losses due to interest-rate related factors, and the realized losses are transferred to the IMR, the sales proceeds are generally used for reinvestment as governed by prudent asset liability management (ALM) policies and procedures. Such sales of bonds are intermittently used to meet liquidity needs and managed within the ALM framework.

IMR losses for fixed income related derivatives were in accordance with documented risk management procedures, as well as the Company's derivative use plans, and reflect the same historical treatment of derivative gains reversed to IMR and amortized rather than immediately recognized as realized gain upon termination.

Note 22 – Events Subsequent

Management of the Company has evaluated subsequent events through November 13, 2023, the date the financial statements were available to be issued to state regulators and subsequently on the Company's website. No events have occurred subsequent to the date of the financial statements.

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 2023 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**

NOTES TO FINANCIAL STATEMENTS

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 – Analysis of Life Actuarial Reserves by Withdrawal Characteristics - No change

Note 34 – Premium and Annuity Considerations Deferred and Uncollected - No change

Note 35 – Separate Accounts - No change

Note 36 – 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	2	3
Name of Entity	NAIC Company Code	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. 12/31/2019
- 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. 12/31/2019
- 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). 06/25/2021
- 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	2	3	4	5	6
Affiliate Name	Location (City, State)	FRB	OCC	FDIC	SEC
Barings LLC	Charlotte, NC .....	.....	.....	.....	YES.....
Baring International Investment Limited	London, UK .....	.....	.....	.....	YES.....
Barings Securities LLC	Charlotte, NC .....	.....	.....	.....	YES.....
MML Distributors, LLC	Springfield, MA .....	.....	.....	.....	YES.....
MML Investment Advisers, LLC	Springfield, MA .....	.....	.....	.....	YES.....
MML Investors Services, LLC	Springfield, MA .....	.....	.....	.....	YES.....
MML Strategic Distributors, LLC	Springfield, MA .....	.....	.....	.....	YES.....
The MassMutual Trust Company, OCC	Windsor, CT .....	.....	YES.....	.....	.....
Flourish Financial, LLC	New York, NY .....	.....	.....	.....	YES.....

GENERAL INTERROGATORIES

- 9.1 Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? Yes [X] No []
- (a) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- (b) Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting entity;
- (c) Compliance with applicable governmental laws, rules and regulations;
- (d) The prompt internal reporting of violations to an appropriate person or persons identified in the code; and
- (e) Accountability for adherence to the code.
- 9.11 If the response to 9.1 is No, please explain:
- 9.2 Has the code of ethics for senior managers been amended? Yes [X] No []
- 9.21 If the response to 9.2 is Yes, provide information related to amendment(s).
Code has been updated to reflect policy name changes and removed policy links from the document
- 9.3 Have any provisions of the code of ethics been waived for any of the specified officers? Yes [] No [X]
- 9.31 If the response to 9.3 is Yes, provide the nature of any waiver(s).
.....

FINANCIAL

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

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 [X]
- 11.2 If yes, give full and complete information relating thereto:
12. Amount of real estate and mortgages held in other invested assets in Schedule BA: \$ 4,522,477,409
13. Amount of real estate and mortgages held in short-term investments: \$
- 14.1 Does the reporting entity have any investments in parent, subsidiaries and affiliates? Yes [X] No []
- 14.2 If yes, please complete the following:
- | | 1
Prior Year-End
Book/Adjusted
Carrying Value | 2
Current Quarter
Book/Adjusted
Carrying Value |
|---|--|---|
| 14.21 Bonds | \$ 8,182,767,683 | \$ 8,816,000,301 |
| 14.22 Preferred Stock | \$ | \$ |
| 14.23 Common Stock | \$ 24,256,245,062 | \$ 24,722,374,998 |
| 14.24 Short-Term Investments | \$ | \$ |
| 14.25 Mortgage Loans on Real Estate | \$ | \$ |
| 14.26 All Other | \$ 5,819,534,587 | \$ 6,171,183,878 |
| 14.27 Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26) | \$ 38,258,547,333 | \$ 39,709,559,177 |
| 14.28 Total Investment in Parent included in Lines 14.21 to 14.26 above | \$ | \$ |
- 15.1 Has the reporting entity entered into any hedging transactions reported on Schedule DB? Yes [X] No []
- 15.2 If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? Yes [X] No [] N/A []
If no, attach a description with this statement.
.....
16. For the reporting entity's security lending program, state the amount of the following as of the current statement date:
- 16.1 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 16.2 Total book/adjusted carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2 \$
- 16.3 Total payable for securities lending reported on the liability page. \$

GENERAL INTERROGATORIES

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

1 Name of Custodian(s)	2 Custodian Address
Citibank, N.A.	333 West 34th Street, New York, NY 10001
State Street Global Services	801 Pennsylvania Avenue, Kansas City, MO 64105
Citibank, N.A.	2 Park Street Sydney, NSW 2000
Citibank, N.A.	London Canada SQ Service CTR Citigroup CTR 25 Canada Sq London E14 5LB UK

- 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
20 Gates Management, LLC	U.....
Angelo, Gordon & Co., L.P.	U.....
Apollo Capital Management, L.P.	U.....
Apollo Insurance Solutions Group LP	U.....
Ares Management LLC	U.....
Barings LLC	A.....
Carlyle Aviation Group Capital Markets LLC	U.....
Centerbridge Martello Advisors, LLC	U.....
Fractal Investments LLC	U.....
Franklin Advisers, Inc.	U.....
Great-West Capital Management LLC	U.....
IFM Investors Pty Ltd	U.....
Invesco Investment Management Company	U.....
Jefferies Finance LLC	A.....
Pacific Investment Management Company LLC	U.....
Western Asset Management Company	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 invested 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 invested 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
155480	20 Gates Management, LLC	549300P9T431XY751068	SEC	NO.....
131940	Angelo, Gordon & Co., L.P.	XXJ808RONB9FETPCB63	SEC	NO.....
143161	Apollo Capital Management, L.P.	549300C43L0TF7UALB02	SEC	NO.....
143161	Apollo Insurance Solutions Group LP	549300C43L0TF7UALB02	SEC	NO.....
130074	Ares Management LLC	549300JA9GMPFTSVQQ05	SEC	NO.....
106006	Barings LLC	549300G36F1E2S4MQM37	SEC	DS.....
168456	Carlyle Aviation Group Capital Markets LLC	54930010815L9BP71G93	SEC	NO.....
311767	Fractal Investments LLC	984500D14JFD006CBC96	SEC	NO.....
104517	Franklin Advisers, Inc.	B1CG1NRZIDDJDDQEXB52	SEC	NO.....
84-1444062	Great-West Capital Management LLC	549300S3EPOXXVYMD485	SEC	NO.....
162754	IFM Investors Pty Ltd	5493002BVK0Q17K1W7H93	SEC	NO.....
110363	Invesco Investment Management Company	037NHJV7S22110N0U83	SEC	NO.....
162264	Jefferies Finance LLC	549300SKVB18YSSIDT75	SEC	NO.....
104559	Pacific Investment Management Company LLC	549300KGPYQZGMYYN38	SEC	NO.....
801-8162	Western Asset Management Company	549300C5A561UXU1CN46	SEC	NO.....
157359	Centerbridge Martello Advisors, LLC	549300F5X7LPP05D3544	SEC	NO.....

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

- 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 9/30/2023, 174 issues for 137 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 \$1,508,047,364 or 0.90% of all assets.
19. By self-designating 5GI securities, the reporting entity is certifying the following elements for each self-designated 5GI security:
 a. Documentation necessary to permit a full credit analysis of the security does not exist or an NAIC CRP credit rating for an FE or PL security is not available.
 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 5GI securities? Yes [X] No []
20. By self-designating PLGI securities, the reporting entity is certifying the following elements of each self-designated PLGI security:
 a. The security was purchased prior to January 1, 2018.
 b. The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
 c. The NAIC Designation was derived from the credit rating assigned by an NAIC CRP in its legal capacity as a NRSRO which is shown on a current private letter rating held by the insurer and available for examination by state insurance regulators.
 d. The reporting entity is not permitted to share this credit rating of the PL security with the SVO.
 Has the reporting entity self-designated PLGI securities? Yes [] No [X]
21. By assigning FE to a Schedule BA non-registered private fund, the reporting entity is certifying the following elements of each self-designated FE fund:
 a. The shares were purchased prior to January 1, 2019.
 b. The reporting entity is holding capital commensurate with the NAIC Designation reported for the security.
 c. The security had a public credit rating(s) with annual surveillance assigned by an NAIC CRP in its legal capacity as an NRSRO prior to January 1, 2019.
 d. The fund only or predominantly holds bonds in its portfolio.
 e. The current reported NAIC Designation was derived from the public credit rating(s) with annual surveillance assigned by an NAIC CRP in its legal capacity as an NRSRO.
 f. The public credit rating(s) with annual surveillance assigned by an NAIC CRP has not lapsed.
 Has the reporting entity assigned FE to Schedule BA non-registered private funds that complied with the above criteria? Yes [] No [X]

GENERAL INTERROGATORIES

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

Life and Accident Health Companies/Fraternal Benefit Societies:

1. Report the statement value of mortgage loans at the end of this reporting period for the following categories: 1
Amount
- 1.1 Long-Term Mortgages In Good Standing
- 1.11 Farm Mortgages\$.....
- 1.12 Residential Mortgages\$..... 4,581,133,996
- 1.13 Commercial Mortgages\$..... 19,616,201,174
- 1.14 Total Mortgages in Good Standing\$..... 24,197,335,170
- 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\$..... 31,769,270
- 1.44 Total Mortgages in Process of Foreclosure\$..... 31,769,270
- 1.5 Total Mortgage Loans (Lines 1.14 + 1.21 + 1.34 + 1.44) (Page 2, Column 3, Lines 3.1 + 3.2)\$..... 24,229,104,440
- 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 %
- 2.2 A&H cost containment percent %
- 2.3 A&H expense percent excluding cost containment expenses %
- 3.1 Do you act as a custodian for health savings accounts? Yes [] No [X]
- 3.2 If yes, please provide the amount of custodial funds held as of the reporting date\$.....
- 3.3 Do you act as an administrator for health savings accounts? Yes [] No [X]
- 3.4 If yes, please provide the balance of the funds administered as of the reporting date\$.....
4. Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states? Yes [X] No []
- 4.1 If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of domicile of the reporting entity? Yes [] No []

Fraternal Benefit Societies Only:

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

Date	Outstanding Lien Amount
.....

STATEMENT AS OF SEPTEMBER 30, 2023 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	10
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Domiciliary Jurisdiction	Type of Reinsurance Ceded	Type of Business Ceded	Type of Reinsurer	Certified Reinsurer Rating (1 through 6)	Effective Date of Certified Reinsurer Rating
00000	AA-3191494	03/15/2023	MARTELLO RE LIMITED (MR23)	BMJ	COFW/G	FA	Unauthorized		
00000	AA-5420050	11/20/2021	KOREAN REINSURANCE COMPANY (KRUH)	KOR	YRT/I	OL	Unauthorized		
82627	06-0839705	11/20/2021	SWISS RE LIFE & HEALTH AMERICA INC. (SRUH)	MO	YRT/I	OL	Authorized		
86258	13-2572994	11/20/2021	GENERAL RE LIFE CORPORATION (GRUH)	CT	YRT/I	OL	Authorized		
88340	59-2859797	01/01/2023	HANNOVER LIFE REASSURANCE COMPANY OF AMERICA (HAEA)	FL	YRT/I	OL	Authorized		
88340	59-2859797	01/01/2023	HANNOVER LIFE REASSURANCE COMPANY OF AMERICA (HAEC)	FL	YRT/I	OL	Authorized		
88340	59-2859797	01/01/2023	HANNOVER LIFE REASSURANCE COMPANY OF AMERICA (HAH4)	FL	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUA)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUB)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUC)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUD)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUE)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUF)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUU1)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUJ)	GA	YRT/I	OL	Authorized		
66346	58-0828824	09/01/2023	MUNICH AMERICAN REASSURANCE COMPANY (MUUN)	GA	YRT/I	OL	Authorized		
93572	43-1235868	07/05/2023	RG A REINSURANCE COMPANY	MO	CO/I	OL	Authorized		
97071	13-3126819	07/07/2018	SCOR GLOBAL LIFE USA REINSURANCE COMPANY (SUU2)	DE	CO/I	OL	Authorized		
97071	13-3126819	11/20/2021	SCOR GLOBAL LIFE USA REINSURANCE COMPANY (SUUH)	DE	YRT/I	OL	Authorized		

STATEMENT AS OF SEPTEMBER 30, 2023 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	43,876,771	79,065,955	5,789,285	14,883,530	143,615,541	25,777,655
2. Alaska	AK	L	3,455,434	19,327,868	383,100	1,050,087	24,216,489	1,834,592
3. Arizona	AZ	L	77,625,112	310,369,198	9,080,563	2,990,498	400,065,371	23,312,453
4. Arkansas	AR	L	17,778,056	36,810,337	2,246,963	834,260	57,669,616	8,182,689
5. California	CA	L	673,107,533	1,146,964,480	50,944,940	201,013,867	2,072,030,820	189,696,857
6. Colorado	CO	L	113,614,933	203,431,549	8,934,919	11,041,747	337,023,148	25,227,401
7. Connecticut	CT	L	156,791,950	145,998,157	13,810,605	55,171,350	371,772,062	16,791,040
8. Delaware	DE	L	17,945,358	40,582,570	1,661,202	10,823,898	71,013,028	2,738,271,240
9. District of Columbia	DC	L	26,311,451	11,572,591	3,005,687	10,431,295	51,321,024	6,629,449
10. Florida	FL	L	453,170,473	758,688,659	29,606,570	124,801,557	1,366,267,259	202,081,844
11. Georgia	GA	L	160,675,031	176,900,212	19,403,439	37,440,768	394,419,450	37,830,286
12. Hawaii	HI	L	15,881,916	32,151,493	2,421,514	4,365,445	54,820,368	3,196,309
13. Idaho	ID	L	27,161,884	45,510,639	1,462,053	6,086,436	80,221,012	8,702,277
14. Illinois	IL	L	224,240,471	288,576,192	18,496,760	267,180,735	798,494,158	164,179,864
15. Indiana	IN	L	122,627,365	128,838,579	7,533,493	25,706,042	284,705,479	28,499,649
16. Iowa	IA	L	37,108,422	59,334,646	2,859,862	9,294,069	108,596,999	34,938,457
17. Kansas	KS	L	43,943,672	430,417,512	4,122,186	26,201,046	504,684,416	4,122,186
18. Kentucky	KY	L	24,942,671	72,351,930	4,066,132	6,260,585	107,621,318	12,698,503
19. Louisiana	LA	L	41,416,039	90,345,453	5,379,186	9,315,156	146,455,834	19,039,009
20. Maine	ME	L	16,055,462	261,506,523	1,909,087	3,272,928	282,744,000	7,032,561
21. Maryland	MD	L	113,970,158	145,818,525	19,650,434	66,252,210	345,691,327	24,130,031
22. Massachusetts	MA	L	204,601,768	374,848,162	23,832,897	867,446,912	1,470,729,739	80,848,393
23. Michigan	MI	L	108,016,962	262,476,785	10,739,735	73,882,388	455,115,870	52,829,498
24. Minnesota	MN	L	67,680,927	181,381,360	6,418,696	58,946,598	314,427,581	82,689,223
25. Mississippi	MS	L	37,556,423	46,066,065	7,601,634	8,932,168	100,156,290	7,570,019
26. Missouri	MO	L	58,529,612	168,526,008	7,913,161	26,735,889	261,704,670	24,755,526
27. Montana	MT	L	10,991,433	25,456,415	1,344,021	222,538	38,014,407	2,958,269
28. Nebraska	NE	L	26,432,213	16,061,127	4,225,304	184,466,981	231,185,625	14,264,597
29. Nevada	NV	L	34,380,841	70,645,615	2,812,355	10,794,293	118,633,104	7,806,440
30. New Hampshire	NH	L	33,671,907	92,120,658	3,287,086	7,093,008	136,172,659	8,935,952
31. New Jersey	NJ	L	382,965,831	441,048,591	28,099,428	129,899,407	982,013,257	64,546,923
32. New Mexico	NM	L	23,420,062	56,581,604	2,112,447	35,278	82,149,391	12,739,527
33. New York	NY	L	1,168,439,701	1,163,956,752	62,745,164	232,884,152	2,628,025,769	123,601,699
34. North Carolina	NC	L	137,764,499	370,776,440	22,918,664	11,775,713	543,235,316	78,657,867
35. North Dakota	ND	L	25,864,552	11,634,864	619,678	147,919	38,267,013	6,323,085
36. Ohio	OH	L	142,151,530	354,103,413	13,647,507	62,015,336	571,917,786	56,946,345
37. Oklahoma	OK	L	75,845,659	129,966,826	6,069,464	23,910,992	235,792,941	11,615,223
38. Oregon	OR	L	32,454,432	85,836,498	4,399,148	11,999,756	134,689,834	13,780,792
39. Pennsylvania	PA	L	349,473,198	476,557,374	30,952,440	104,442,846	961,425,858	17,991,202
40. Rhode Island	RI	L	17,101,998	75,765,867	2,318,660	7,308,231	102,494,756	7,050,226
41. South Carolina	SC	L	66,557,145	145,637,945	12,179,805	7,846,765	232,221,660	49,550,705
42. South Dakota	SD	L	21,413,201	13,527,327	559,295	124,139	35,623,962	2,809,014
43. Tennessee	TN	L	126,424,792	169,457,673	15,368,176	34,342,576	345,593,217	31,411,839
44. Texas	TX	L	388,138,084	806,514,019	38,141,457	117,004,097	1,349,797,657	133,132,435
45. Utah	UT	L	46,665,741	55,288,600	3,340,137	3,314,297	108,608,775	16,413,433
46. Vermont	VT	L	13,400,276	26,787,762	1,215,372	10,664,072	52,067,482	456,175
47. Virginia	VA	L	159,012,501	251,525,403	23,629,969	58,783,503	492,951,376	49,170,972
48. Washington	WA	L	74,447,853	212,915,614	9,425,235	35,713,005	332,501,707	12,858,790
49. West Virginia	WV	L	12,482,193	26,618,596	1,201,892	6,907,732	47,210,413	17,288,387
50. Wisconsin	WI	L	46,286,877	111,203,865	4,962,519	29,213,653	191,666,914	9,186,459
51. Wyoming	WY	L	7,345,975	18,941,733	513,552	85,435	26,886,695	2,047,109
52. American Samoa	AS	N						
53. Guam	GU	N	1,346		15,273		16,619	
54. Puerto Rico	PR	L	63,867,395	12,295,229	7,836,004	4,678,139	88,676,767	1,762,204
55. U.S. Virgin Islands	VI	N	33,987	9,582	18,530		62,099	
56. Northern Mariana Islands	MP	N						
57. Canada	CAN	N	1,970,942	51,593	69,146	209,378	2,301,059	
58. Aggregate Other Aliens	OT	XXX	14,524,432	102,400	459,524	64,350,528	79,436,884	24,490
59. Subtotal	XXX		6,391,616,450	10,739,250,833	573,761,355	3,090,595,233	20,795,223,871	4,583,161,802
90. Reporting entity contributions for employee benefits plans	XXX							
91. Dividends or refunds applied to purchase paid-up additions and annuities	XXX		1,141,866,167	446,099			1,142,312,266	
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		23,076,617		7,735,024		30,811,641	
94. Aggregate or other amounts not allocable by State	XXX		73,683,501				73,683,501	
95. Totals (Direct Business)	XXX		7,630,242,735	10,739,696,932	581,496,379	3,090,595,233	22,042,031,279	4,583,161,802
96. Plus Reinsurance Assumed	XXX		31,653,903	228,512,510		467,255,039	727,421,452	647,273,640
97. Totals (All Business)	XXX		7,661,896,638	10,968,209,442	581,496,379	3,557,850,272	22,769,452,731	5,230,435,442
98. Less Reinsurance Ceded	XXX		925,995,374	1,983,615,153	730,498,305	2,494,321,508	6,134,430,340	
99. Totals (All Business) less Reinsurance Ceded	XXX		6,735,901,264	8,984,594,289	(149,001,926)	1,063,528,763	16,635,022,391	5,230,435,442
DETAILS OF WRITE-INS								
58001. ZZZ Other Alien	XXX		14,368,984	102,400	459,524	64,350,528	79,281,436	24,490
58002. HKG Hong Kong	XXX		155,448				155,448	
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		14,524,432	102,400	459,524	64,350,528	79,436,884	24,490
9401. Reinvested Net Non Forfeiture Option Proceeds	XXX		73,683,501				73,683,501	
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		73,683,501				73,683,501	

(a) Active Status Counts:

- 1. L - Licensed or Chartered - Licensed insurance carrier or domiciled RRG..... 52
- 2. R - Registered - Non-domiciled RRGs.....
- 3. E - Eligible - Reporting entities eligible or approved to write surplus lines in the state.....
- 4. Q - Qualified - Qualified or accredited reinsurer.....
- 5. N - None of the above - Not allowed to write business in the state..... 5

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 Special Situations Investor LLC	None		Delaware
CM Life Mortgage Lending LLC	None		Delaware
CML Mezzanine Investor III, LLC	None		Delaware
CML Global Capabilities LLC	None		Delaware
MM Global Capabilities I LLC	None		Delaware
MassMutual Global Business Services India LLP	None		India
MM Global Capabilities (Netherlands) B.V.	None		Netherlands
MassMutual Global Business Services Romania S.R.L.	None		Romania
MM Global Capabilities II LLC	None		Delaware
MM Global Capabilities III LLC	None		Delaware
MM/Barings Multifamily TEBS 2020 LLC	None		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, 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 Timberlands I, LLC	None		Delaware
Lyme Adirondack Timberlands II, LLC	None		Delaware
Lyme Adirondack Timber Sales, LLC	None		Delaware
MSP-SC, LLC	04-1590850		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity LLC	04-1590850		Delaware
MassMutual Intellectual Property LLC	04-1590850		Delaware
Trad Investments I LLC	None		Delaware
ITPS Holding LLC	None		Delaware
HITPS LLC	None		Delaware
EM Opportunities LLC	None		Delaware
MassMutual MCAM Insurance Company, Inc.	None		Vermont
MassMutual Ventures US IV, GP, LLC	None		Delaware
MassMutual Ventures US IV, L.P.	None		Delaware
MassMutual Ventures US IV, LLC	None		Delaware
MassMutual Ventures Europe/APAC I GP, LLC	None		Delaware
MassMutual Ventures Europe/APAC I GP, L.P.	None		Cayman Islands
MassMutual Ventures Europe/APAC I L.P.	None		Cayman Islands

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

SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Counterpointe Sustainable Advisors LLC	None		Delaware
CSA Intermediate Holdco LLC	None		Delaware
Counterpointe Trust Services LLC	None		Delaware
CP PACE LLC	None		Delaware
CSA Employee Services Company LLC	None		Delaware
Counterpointe Sustainable Real Estate II LLC	None		Delaware
Counterpointe Energy Solutions II LLC	None		Delaware
Counterpointe Energy Solutions (CA) II LLC	27-0105644		Delaware
Counterpointe Energy Services LLC	None		Delaware
JFIN Parent LLC	None		Delaware
Jefferies Finance LLC	27-0105644		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Fund III LLC	None		Delaware
Jefferies Credit Partners LLC	None		Delaware
APEX Credit Partners LLC	None		Delaware
Jefferies Credit Management LLC	None		Delaware
JCP Direct Lending CLO 2022 LLC	None		Delaware
Jefferies Direct Lending Europe SCSp SICAV-RAIF	None		Luxembourg
Jefferies Credit Management Holdings LLC	None		Delaware
Senior Credit Investments, LLC	None		Delaware
JDLF GP (Europe) S.a.r.l	None		Luxembourg
JFAM GP LLC	None		Delaware
JFAM GP LP	None		Delaware
Jefferies Direct Lending Fund C LP	None		Delaware
Jefferies DLF C Holdings LLC	None		Delaware
Jefferies Direct Lending Fund C SPE LLC	None		Delaware
JDLF II GP LLC	None		Delaware
JDLF II GP LP	None		Delaware
Jefferies Direct Lending Fund II C LP	None		Delaware
Jefferies DLF 2 C Holdings LLC	None		Delaware
Jefferies Direct Lending Fund II C SPE LLC	None		Delaware
JCP Direct Lending CLO 2023-1 LLC	None		Delaware
JCP Direct Lending CLO 2023 Ltd.	None		Jersey Channel Islands
Jefferies Private Credit BDC Inc.	None		Maryland
Jefferies Senior Lending LLC	None		Delaware
Jefferies Credit Partners BDC Inc	None		Maryland
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Revolver Holdings IV LLC	None		Delaware
JFIN Co-Issuer Corporation	None		Delaware
JFIN Europe GP, S.a.r.l.	None		Luxembourg
Jefferies Finance Europe, S.L.P.	None		Luxembourg
Jefferies Finance Europe, SCSp	None		Luxembourg

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

SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP
PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Jefferies Finance Business Credit LLC	None		Delaware
JFIN Business Credit Fund I LLC	None		Delaware
JFIN Funding 2021 LLC	None		Delaware
JFIN High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO 2017 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2018 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2020 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2021-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2021-V Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-IV Ltd.	None		Cayman Islands
JFIN Revolver CLO 2022-IV LLC	None		Cayman Islands
JFIN Revolver Fund, L.P.	None		Delaware
JFIN Revolver Funding 2021 Ltd.	None		Delaware
JFIN Revolver Funding 2021-III Ltd.	None		Delaware
JFIN Revolver Funding 2021-IV Ltd.	None		Delaware
JFIN Revolver Funding 2022-I Ltd.	None		Bermuda
JFIN Revolver SPE1 2022 LLC	None		Delaware
JFIN Revolver SPE3 2022 LLC	None		Delaware
JFIN Revolver SPE4 2022 LLC	None		Delaware
SFL Parkway Funding 2022 LLC	None		Delaware
JCP Private Loan Management GP LLC	None		Delaware
JCP Private Loan Management LP	None		Delaware
Beauty Brands Acquisition Holdings LLC	None		Delaware
Beauty Brands Acquisition LLC	None		Delaware
Beauty Brands Acquisition Intermediate LLC	None		Delaware
Forma Brands, LLC*	None		Delaware
Apex Credit Holdings LLC	None		Delaware
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 CLO 2015 Ltd.	None		Cayman Islands
JFIN CLO 2015-II Ltd.	None		Cayman Islands
JFIN CLO 2016 Ltd.	None		Cayman Islands
JFIN CLO 2017 Ltd.	None		Cayman Islands
JFIN CLO 2017 II Ltd.	None		Cayman Islands

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SCHEDULE Y – INFORMATION CONCERNING ACTIVITIES OF INSURER MEMBERS OF A HOLDING COMPANY GROUP
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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Tomorrow Parent, LLC	None		Delaware
Custom Ecology Holdco, LLC	None		Delaware
Glidepath Holdings Inc.	86-2294635		Delaware
MassMutual Ascend Life Insurance Company	13-1935920	63312	Ohio
AAG Insurance Agency, LLC	31-1422717		Kentucky
Annuity Investors Life Insurance Company	31-1021738	93661	Ohio
MM Ascend Life Investor Services, LLC	31-1395344		Ohio
MM Ascend Mortgage Lending LLC	31-1395344		Ohio
Manhattan National Holding, LLC	26-3260520		Ohio
Manhattan National Life Insurance Company	45-0252531	67083	Ohio
MassMutual Mortgage Lending LLC	None		Delaware
MM Copper Hill Road LLC	04-1590850		Delaware
MMV CTF I GP LLC	None		Delaware
MassMutual Ventures Climate Technology Fund I LP	None		Delaware
MM Direct Private Investment Holding LLC	None		Delaware
MM Direct Private Investments UK Limited	None		England & Wales
DPI-ACRES Capital LLC	None		Delaware
DPI-ARES Mortgage Lending LLC	None		Delaware
MM Investment Holding	None		Cayman Islands
MMIH Bond Holdings LLC	None		Delaware
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2017-B	32-0546197		Delaware
MMAF Equipment Finance LLC 2018-A	82-5335801		Delaware
MMAF Equipment Finance LLC 2019-A	83-3722640		Delaware
MMAF Equipment Finance LLC 2019-B	None		Delaware
MMAF Equipment Finance LLC 2020-A	None		Delaware
MMAF Equipment Finance LLC 2020-B	None		Delaware
MMAF Equipment Finance LLC 2021-A	None		Delaware
MMAF Equipment Finance LLC 2022-A	None		Delaware
MMAF Equipment Finance LLC 2022-B	None		Delaware
MMAF Equipment Finance LLC 2023-A	None		Delaware
Rozier LLC	None		Delaware
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MML CM LLC	None		Delaware
Blueprint Income LLC	None		New York
Flourish Digital Assets LLC	None		Delaware
Flourish Financial LLC	None		Delaware
Flourish Holding Company LLC	None		Delaware
Flourish Insurance Agency LLC	None		Delaware
Flourish Technologies LLC	None		Delaware

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual Ventures US IV GP	04-1590850		Delaware
MassMutual Venture US IV LP	04-1590850		Delaware
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
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
Low Carbon Energy Holding	None		United Kingdom
Sleeper Street LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
Haven Life Insurance Agency, LLC	46-2252944		Delaware
GASL Holdings LLC	None		Delaware
Barings Asset-Based Income Fund (US) LP	None		Delaware
Babson Capital Global Special Situation Credit Fund 2	98-1206017		Delaware
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings North American Private Loan Fund LP	38-4010344		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
MassMutual Capital Partners LLC	04-1590850		Delaware
Marco Hotel LLC	46-4255307		Delaware
HB Naples Golf Owner LLC	45-3623262		Delaware
RB Apartments LLC	82-4411267		Delaware
Intermodal Holding II LLC	None		Delaware
MassMutual Ventures Holding LLC	None		Delaware
Athens Fund Management LLC	None		Delaware
Crane Venture Partners LLP	None		United Kingdom
MassMutual Ventures Management LLC	None		Delaware
MassMutual Ventures SEA Management Private Limited	None		Singapore
MMV UK/SEA Limited	None		England & Wales
MassMutual Ventures Southeast Asia I LLC	None		Delaware
MassMutual Ventures Southeast Asia II LLC	None		Delaware
MassMutual Ventures Southeast Asia III LLC	None		Delaware
MMV Digital I LLC	None		Cayman Islands
MassMutual Ventures UK LLC	None		Delaware
MassMutual Ventures US I LLC	47-1296410		Delaware
MassMutual Ventures US II LLC	None		Delaware
MassMutual Ventures US III LLC	None		Delaware
MM Catalyst Fund LLC	None		Delaware

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MM Catalyst Fund II LLC	None		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
Rothesay Limited	None		United Kingdom
Rothesay Mortgages Limited	None		United Kingdom
Rothesay Life Plc	None		United Kingdom
Rothesay MA No.1 Limited	None		United Kingdom
Rothesay MA No.3 Limited	None		United Kingdom
Rothesay MA No.4 Limited	None		United Kingdom
LT Mortgage Finance Limited	None		United Kingdom
Rothesay Property Partnership 1 LLP	None		United Kingdom
Rothesay Foundation	None		United Kingdom
Rothesay Pensions Management Limited	None		United Kingdom
Rothesay Asset Management UK Limited	None		United Kingdom
Rothesay Asset Management Australia Pty Ltd	None		Australia
Rothesay Asset Management North America LLC	None		Delaware
MML Investors Services, LLC	04-1590850		Massachusetts
MML Insurance Agency, LLC	04-1590850		Massachusetts
MMLISI Financial Alliances, LLC	41-2011634		Delaware
LifeScore Labs, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
Baring Asset Management (Asia) Holdings Limited	98-0524271		Hong Kong, Special Administrative Region of China
Baring International Fund Managers (Bermuda) Limited	98-0457465		Bermuda
Baring Asset Management (Asia) Limited	98-0457463		Hong Kong, Special Administrative Region of China
Baring Asset Management Korea Limited	None		Korea
Barings Investment Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Barings Overseas Investment Fund Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC
Barings Singapore Pte. Ltd.	None		Singapore
Barings Japan Limited	98-0236449		Japan
Barings Australia Holding Company Pty Ltd	None		Australia
Barings Australia Pty Ltd	None		Australia
Barings Australia Real Estate Holdings Pty Ltd	None		Australia
Barings Australia Real Estate Pty Ltd	14-0045656		Australia
Barings Australia Property Partners Holdings Pty Ltd	98-0457456		Australia
Barings Australia Asset Management Pty Ltd	None		Australia
Barings Australia Property Partners Pty Ltd	None		Australia
Barings Australia Structured Finance Holdings Pty Ltd	None		Australia
Barings Australia Structured Finance Pty Ltd	None		Australia
Gryphon Capital Partners Pty Ltd	None		Australia
Gryphon Capital Management Pty Ltd	None		Australia
Gryphon Capital Investments Pty Ltd	None		Australia
Barings Finance LLC	80-0875475		Delaware

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
BCF Europe Funding Limited	None		Ireland
BCF Senior Funding I LLC*	None		Delaware
BCF Senior Funding I Designated Activity Company	None		Ireland
Barings Real Estate Acquisitions LLC	None		Delaware
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings Europe Limited	None		United Kingdom
Barings Asset Management Spain SL	None		Spain
Baring France SAS	None		France
Baring International Fund Managers (Ireland) Limited	None		Ireland
Barings GmbH	None		Germany
Barings Italy S.r.l.	None		Italy
Barings Sweden AB	None		Sweden
Barings Netherlands B.V.	None		Netherlands
Barings (U.K.) Limited	98-0432153		United Kingdom
Barings Switzerland Sàrl	None		Switzerland
Baring Asset Management Limited	98-0241935		United Kingdom
Barings European Direct Lending 1 GP LLP	None		United Kingdom
Baring International Investment Limited	98-0457328		United Kingdom
Baring International Investment Management Holdings	98-0457587		United Kingdom
Baring Asset Management UK Holdings Limited	98-0457576		United Kingdom
Baring Fund Managers Limited	98-0457586		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Baring Investment Services Limited	98-0457578		United Kingdom
Barings Core Fund Feeder I GP S.à.r.l.	None		Luxembourg
Barings Investment Fund (LUX) GP S.à.r.l.	None		Luxembourg
Barings BME GP S.à.r.l.	None		United Kingdom
Barings GPC GP S.à.r.l.	None		Luxembourg
Barings European Core Property Fund GP S.à.r.l	None		United Kingdom
Barings Umbrella Fund (LUX) GP S.à.r.l.	None		Luxembourg
GPLF4(S) GP S.à.r.l	None		Luxembourg
PREIF Holdings Limited Partnership	None		United Kingdom
BMC Holdings DE LLC	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		Delaware
Remington L & W Holdings LLC	81-4065378		Delaware
Aland Royalty GP, LLC	None		Delaware
Alaska Future Fund GP, LLC	None		Delaware
BAI Funds SLP, LLC	None		Delaware
BAI GP, LLC	None		Delaware
Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware
Barings CMS Fund GP, LLC	None		Delaware
Barings Infiniti Fund Management LLC	None		Delaware
Barings Hotel Opportunity Venture I GP, LLC	None		Delaware

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Baring Investment Series LLC	None		Delaware
Barings Emerging Generation Fund GP, LLC	None		Delaware
Barings Emerging Generation Fund GP II, LLC	None		Delaware
Barings ERS PE Emerging Manager III GP, LLC	None		Delaware
Barings Global Investment Funds (U.S.) Management LLC	04-1590850		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 Centre Street CLO Equity Partnership GP, LLC	None		Delaware
Barings Centre Street CLO Equity Partnership LP	None		Delaware
Barings Global Real Assets Fund GP, LLC	None		Delaware
Barings GPSF LLC	None		Delaware
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings North American Private Loan Fund II Management, LLC	None		Delaware
Barings North American Private Loan Fund III Management, LLC	None		Delaware
Barings Global Special Situations Credit Fund 4 GP (Delaware) LLC	None		Delaware
Barings - MM Revolver Fund GP LLC	None		Delaware
Barings Real Estate European Value Add Fund II Feeder LLC	None		Cayman Islands
BMT RE Debt Fund GP LLC	None		Delaware
Barings Small Business Fund LLC	84-5063008		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands
BHOVI Incentive LLC	None		Delaware
BIG Real Estate Fund GP LLC	None		Delaware
BIG Real Estate Incentive I LLC	None		Delaware
BIG Real Estate Incentive II LLC	None		Delaware
BRECS VII GP LLC	None		Delaware
BREDIF GP LLC	None		Delaware
CREF X GP LLC	None		Delaware
Great Lakes III GP, LLC	04-1590850		Delaware
Lake Jackson LLC	None		Delaware
Barings Emerging Markets Blended Fund I GP, LLC	None		Delaware
Mezzco III LLC	41-2280126		Delaware
Mezzco IV LLC	80-0920285		Delaware
Mezzco Australia II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
Barings CLO 2022-I	98-1624360		Cayman Island
Barings CLO 2022-II	None		Cayman Island
Amherst Long Term Holdings, LLC	None		Delaware
MassMutual International LLC	04-3313782		Delaware
MassMutual Solutions LLC	None		Delaware
Haven Technologies Asia Limited	None		Hong Kong

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Yunfeng Financial Group Limited	None		Hong Kong
MassMutual Asia Limited (SPV)	None		Hong Kong
MassMutual External Benefits Group LLC	27-3576835		Delaware
100 w. 3rd Street LLC	04-1590850		Delaware
2160 Grand Manager LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	82-2432216		Delaware
300 South Tryon LLC	04-1590850		Delaware
Barings Affordable Housing Mortgage Fund I LLC	82-3468147		Delaware
Barings Affordable Housing Mortgage Fund II LLC	61-1902329		Delaware
Barings Affordable Housing Mortgage Fund III LLC	85-3036663		Delaware
Barings Emerging Generation Fund II LP	None		Delaware
Barings Emerging Generation Fund, LP	84-3784245		Delaware
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Hotel Opportunity Venture I LP	None		Delaware
Barings Real Estate Debt Income Fund LP	85-3449260		Delaware
Barings Real Estate European Value Add I SCSp	None		Luxembourg
Barings Small Business Fund, L.P.	None		Delaware
Barings-MM Revolver Fund LP	None		Delaware
Calgary Railway Holding LLC	82-2285211		Delaware
Combrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone Fort Pierce Development, LLC	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund II LLC	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III LLC	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV LLC	61-1793735		Massachusetts
Cornerstone Permanent Mortgage Fund LLC	45-2632610		Massachusetts
CREA Ridge Apartments, LLC	None		Delaware
CREA/PPC Venture, LLC	20-0348173		Delaware
Euro Real Estate Holdings LLC	04-1590850		Delaware
Fan Pier Development LLC	20-3347091		Delaware
GIA EU Holdings LLC	04-1590850		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
Miami Douglas Three MM, LLC	04-1590850		Delaware
MM 1400 E 4th Street Member LLC	04-1590850		Delaware
MM BIG Peninsula Co-Invest Member LLC	87-4021641		Delaware
MM Brookhaven Member LLC	04-1590850		Delaware
MM Debt Participations LLC	81-3000420		Delaware
MM East South Crossing Member LLC	04-1590850		Delaware
MM Horizon Savannah Member LLC	04-1590850		Delaware
MM Kannapolis Industrial Member LLC	04-1590850		Delaware
MM MD1 Station Member LLC	04-1590850		Delaware
MM MD2 Station Member LLC	04-1590850		Delaware
MM National Self-Storage Program Member LLC	04-1590850		Delaware

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MM REED District Landco Member LLC	None		Delaware
MM Subline Borrower LLC	04-1590850		Delaware
One Harbor Shore LLC	80-0948028		Delaware
PACO France Logistics LLC	04-1590850		Delaware
Portland 400 Sixth Manager LLC	None		Delaware
Riverwalk MM Member, LLC	None		Delaware
Ten Fan Pier Boulevard LLC	35-2553915		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Trailside MM Member II LLC	04-1590850		Delaware
Trailside MM Member LLC	04-1590850		Delaware
Unna, Dortmund Holding LLC	82-3250684		Delaware
Washington Gateway Apartments Venture LLC	45-5401109		Delaware
Washington Gateway Three LLC	32-0574045		Delaware
Washington Gateway Two LLC	83-1325764		Delaware
West 37th Street Hotel LLC	88-3861481		Delaware
Aland Royalty Holdings LP	None		Delaware
Chassis Acquisition Holding LLC	81-2244465		Delaware
CRA Aircraft Holding LLC	81-4258759		Delaware
EIP Holdings I, LLC	None		Delaware
Red Lake Ventures, LLC	46-5460309		Delaware
Validus Holding Company LLC	46-0687392		Delaware
VGS Acquisition Holding, LLC	None		Delaware
SBNP SIA II LLC	04-1590850		Delaware
SBNP SIA III LLC	None		Delaware
Other Affiliates & Funds:			
Almack Mezzanine Fund II Unleveraged LP	None		United Kingdom
Barings Emerging Markets Corporate Bond Fund*	None		Ireland
Barings European Real Estate Debt Income Fund	None		Luxembourg
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Barings CLO Ltd. 2017-I	None		Cayman Islands
Barings CLO 2018-III	None		Cayman Islands
Barings CLO 2018-IV	None		Cayman Islands
Barings CLO 2019-II	98-1473665		Cayman Islands
Barings CLO 2019-III	None		Cayman Islands
Barings CLO 2019-IV	None		Cayman Islands
Barings CLO 2020-I	None		Cayman Islands
Barings CLO 2020-II	None		Cayman Islands
Barings CLO 2020-III	None		Cayman Islands

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Barings CLO 2020-IV	None		Cayman Islands
Barings CLO 2021-I	None		Cayman Islands
Barings CLO 2021-II	None		Cayman Islands
Barings CLO 2021-III	None		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
Barings Euro CLO 2019-I	36037260H		Ireland
Barings Euro CLO 2019-II	None		Ireland
Barings Euro CLO 2020-I DAC	None		Ireland
Barings Euro CLO 2021-I DAC	3715576VH		Ireland
Barings Euro CLO 2021-II DAC	3750378QH		Ireland
Barings Euro CLO 2021-III DAC	None		Ireland
Barings Euro CLO 2022-I DAC	None		Ireland
Barings Global Em. Markets Equity Fund	82-5330194		North Carolina
Barings Global Special Situations Credit 4 Delaware*	85-1465973		Delaware
Barings Global Special Situations Credit 4 LUX*	98-1570693		Luxembourg
Barings Global Technology Equity Fund	None		Ireland
Barings Global Dividends Champion Fund	None		Ireland
Barings Europe Select Fund	None		Ireland
Barings Hotel Opportunity Venture	87-0977058		Connecticut
Barings Innovations & Growth Real Estate Fund*	86-3661023		Delaware
Barings Middle Market CLO 2017-I Ltd & LLC	None		Cayman Islands
Barings Middle Market CLO 2018-I	None		Cayman Islands
Barings Middle Market CLO 2019-I	None		Cayman Islands
Barings Middle Market CLO Ltd 2021-I	98-1612604		Cayman Islands
Barings RE Credit Strategies VII LP	98-1332384		Delaware
Barings Target Yield Infrastructure Debt Fund*	98-1567942		Luxembourg
Barings CLO Investment Partners LP	81-0841854		Delaware
Barings Euro Value Add II (BREEVA II) *	None		Luxembourg
Barings Transportation Fund LP*	87-1262754		Delaware
Braemar Energy Ventures I, L.P.*	None		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg
Barings European Private Loan Fund III A	46-5001122		Luxembourg
Benchmark 2018-B2 Mortgage Trust	38-4059932		New York
Benchmark 2018-B4	None		New York
Benchmark 2018-B8	38-4096530		New York
Barings Core Property Fund LP	20-5578089		Delaware
DPI Acres Capital SPV LLC	04-1590850		Delaware
Gateway Mezzanine Partners II LP*	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
GIA EU Holdings - Emerson JV Sarl	98-1607033		Luxembourg
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012		New York

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059		New York
Martello Re Limited	None		Bermuda
MM Direct Private Investment Holding	04-1590850		Delaware
MM CM Holding LLC	None		Delaware
MMV Climate Technology Fund GP	04-1590850		Delaware
Washington Pine LLC	04-1590850		Delaware
Somerset Special Opportunities Fund L.P.*	20-8856877		Delaware
Tower Square Capital Partners III, L.P.	41-2280127		Delaware
Tower Square Capital Partners IIIA, L.P.	41-2280129		Delaware
Barings Affiliates & Funds:			
Babson Capital Loan Strategies Master Fund LP	None		Cayman Islands
Barings China Aggregate Bond Private Securities Investment Fund	None		Peoples Republic of China
Barings European Growth Trust Fund	None		United Kingdom
Barings Global High Yield Fund	47-3790192		Massachusetts
CCIC Fund	None		Peoples Republic of China
Great Lakes II LLC*	71-1018134		Delaware
Wood Creek Venture Fund LLC	04-1590850		Delaware
Barings Real Estate Affiliates & Funds:			
Barings California Mortgage Fund IV	None		California
Barings Umbrella Fund LUX SCSp SICAV RAIF*	None		Luxembourg
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
Danville Riverwalk Venture, LLC	82-2783393		Delaware
MMLIC Debt Participations LLC	13-1935920		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
MassMutual Premier Funds:			
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
MassMutual Select Funds:			
MassMutual Select Fundamental Growth Fund	04-3512593		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

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	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
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 Dynamic Bond Fund	47-3529636		Massachusetts
MML Series II Equity Rotation Fund	47-3544629		Massachusetts
MassMutual RetireSMART Funds:			
MassMutual RetireSMART 2035 Fund	27-1933380		Massachusetts
MassMutual RetireSMART 2045 Fund	27-1932769		Massachusetts
MassMutual RetireSMART 2055 Fund	46-3289207		Massachusetts
MassMutual RetireSMART 2060 Fund	47-5326235		Massachusetts
MassMutual 20/80 Allocation Fund	45-1618155		Massachusetts
MassMutual 80/20 Allocation Fund	45-1618222		Massachusetts
MassMutual RetireSMART In Retirement Fund	03-0532464		Massachusetts
MassMutual 40/60 Allocation Fund	45-1618262		Massachusetts
MassMutual 60/40 Allocation Fund	45-1618046		Massachusetts
MassMutual ishares 60/40 Allocation Fund	45-1618046		Massachusetts
MassMutual Balanced Fund	04-3212054		Massachusetts
MassMutual Blue Chip Growth Fund	04-3556992		Massachusetts
MassMutual Core Bond Fund	04-3277549		Massachusetts
MassMutual Disciplined Growth Fund	04-3539084		Massachusetts
MassMutual Disciplined Value Fund	04-3539083		Massachusetts
MassMutual Diversified Value Fund	01-0821120		Massachusetts
MassMutual Equity Opportunities Fund	04-3512590		Massachusetts
MassMutual Growth Opportunities Fund	04-3512589		Massachusetts
MassMutual Inflation-Protected and Income Fund	03-0532475		Massachusetts
MassMutual Mid Cap Growth Fund	04-3512596		Massachusetts
MassMutual Premier Diversified Bond Fund	04-3464165		Massachusetts
MassMutual RetireSMART by JPMorgan 2065 Fund	92-1441036		Massachusetts
MassMutual Select 80/20 Allocation Fund	45-1618222		Massachusetts
MassMutual Select Fundamental Value Fund	04-3584138		Massachusetts
MassMutual Select Overseas Fund	04-3557000		Massachusetts
MassMutual Select T Rowe Price Retirement 2065 Fund	92-1427882		Massachusetts
MassMutual Small Cap Growth Equity Fund	04-3464205		Massachusetts
MassMutual Small Cap Opportunities Fund	04-3424705		Massachusetts
MassMutual Small Cap Value Equity Fund	02-0769954		Massachusetts
MassMutual Strategic Bond Fund	26-0099965		Massachusetts

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

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.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	Massachusetts Mut Life Ins Co	93432	06-1041383				C.M. Life Insurance Company	CT	DS	Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	70416	43-0581430				MML Bay State Life Insurance Company	CT	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CM Life Mortgage Lending LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Mezzanine Investor III, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Special Situations Investor LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Global Capabilities LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities I LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Global Business Services India LLP	IND	DS	MM Global Capabilities I LLC	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities (Netherlands) B.V.	NLD	DS	MM Global Capabilities I LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Global Business Services Romania S.R.L.	ROU	DS	MM Global Capabilities (Netherlands) B.V.	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities II LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Global Capabilities III LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM/Barings Multifamily TEBS 2020 LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Berkshire Way LLC	DE	DS	Massachusetts Mutual Life Insurance Company	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	11.100	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	Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	C.M. Life Insurance Company	Influence	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							Lyme Adirondack Timberlands I, LLC	DE	DS	Lyme Adirondack Forest Company, LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timberlands II, LLC	DE	DS	Lyme Adirondack Forest Company, LLC	Ownership	100.000	MMLIC		
.0000							Lyme Adirondack Timber Sales, LLC	DE	DS	Lyme Adirondack Forest Company, LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MSP-SC, LLC	DE	DS	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							ITPSHolding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							HITPS LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
.0000							EM Opportunities LLC	DE	NIA	ITPS Holding LLC	Ownership	100.000	MMLIC		
.0000								DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							MassMutual MCAM Insurance Company, Inc.	VT	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US IV, GP, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US IV, L.P.	DE	NIA	MassMutual Ventures US IV, GP, LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US IV LLC	DE	DS	MassMutual Ventures US IV, L.P.	Ownership	100.000	MMLIC		
.0435							MassMutual Ventures Europe/APAC I GP, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435							MassMutual Ventures Europe/APAC I GP, L.P.	CYM	DS	MassMutual Ventures Europe/APAC I GP, LLC	Ownership	100.000	MMLIC		
.0435							MassMutual Ventures Europe/APAC I L.P.	CYM	DS	MassMutual Ventures Europe/APAC I GP, L.P.	Ownership	100.000	MMLIC		
.0435							Counterpointe Sustainable Advisors LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CSA Intermediate Holdco LLC	DE	DS	Counterpointe Sustainable Advisors LLC	Ownership	100.000	MMLIC		
.0000							Counterpointe Trust Services LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							CP PACE LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							CSA Employee Services Company LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							Counterpointe Sustainable Real Estate II LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							Counterpointe Energy Solutions II LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							Counterpointe Energy Solutions (CA) II LLC	DE	DS	Counterpointe Energy Solutions II LLC	Ownership	100.000	MMLIC		
.0000							Counterpointe Energy Services LLC	DE	DS	CSA Intermediate Holdco LLC	Ownership	100.000	MMLIC		
.0000							JFIN Parent LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			27-0105644				Jefferies Finance LLC	DE	NIA	JFIN Parent LLC	Ownership	50.000	MMLIC		1
.0000							JFIN GP Adviser LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Fund III LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit Partners LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Credit Management LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JCP Direct Lending CLO 2022 LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	9.900	MMLIC		
.0000							Jefferies Direct Lending Europe SCSp SICAV-RAIF	LUX	NIA	Jefferies Credit Partners LLC	Ownership	9.900	MMLIC		
.0000							Jefferies Credit Management Holdings LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	9.900	MMLIC		
.0000							Senior Credit Investments, LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	9.900	MMLIC		
.0000							JDLF GP (Europe) S.a.r.l	LUX	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFAM GP LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFAM GP LP	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund C LP	DE	NIA	JFAM GP LP	Ownership	100.000	MMLIC		
.0000							Jefferies DLF C Holdings LLC	DE	NIA	Jefferies Direct Lending Fund C LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund C SPE LLC	DE	NIA	Jefferies DLF C Holdings LLC	Ownership	100.000	MMLIC		
.0000							JDLF II GP LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JDLF II GP LP	DE	NIA	JDLF II GP LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund II C LP	DE	NIA	JDLF II GP LP	Ownership	100.000	MMLIC		
.0000							Jefferies DLF 2 C Holdings LLC	DE	NIA	Jefferies Direct Lending Fund II C LP	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund II C SPE LLC	DE	NIA	Jefferies DLF 2 C Holdings LLC	Ownership	100.000	MMLIC		
.0000							JCP Direct Lending CLO 2023-1 LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JCP Direct Lending CLO 2023 Ltd.	JEY	NIA	JCP Direct Lending CLO 2023 Ltd.	Ownership	100.000	MMLIC		
.0000							Jefferies Private Credit BDC Inc.	MD	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Senior Lending LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							Jefferies Credit Partners BDC Inc	MD	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Holdings II LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Holdings IV LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Co-Issuer Corporation	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Europe GP, S.a.r.l.	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							Jefferies Finance Europe, S.L.P.	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MLLIC		
.0000							Jefferies Finance Europe, SCSp	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MLLIC		
.0000							Jefferies Finance Business Credit LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Business Credit Fund I LLC	DE	NIA	Jefferies Finance Business Credit LLC	Ownership	100.000	MLLIC		
.0000							JFIN Funding 2021 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2017 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2017-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2017-III Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2018 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2019 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2019-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2020 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2021-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2021-V Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2022-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2022-III Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2022-IV Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver CLO 2022-IV LLC	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Fund, L.P.	DE	NIA	Jefferies Finance LLC	Ownership	90.000	MLLIC		
.0000							JFIN Revolver Funding 2021 Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Funding 2021 III Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Funding 2021 IV Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver Funding 2022-I Ltd.	BMU	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver SPE1 2022 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver SPE3 2022 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JFIN Revolver SPE4 2022 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							SFL Parkway Funding 2022 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JCP Private Loan Management GP LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							JCP Private Loan Management LP	DE	NIA	JCP Private Loan Management GP LLC	Ownership	100.000	MLLIC		
.0000							Beauty Brands Acquisition Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MLLIC		
.0000							Beauty Brands Acquisition LLC	DE	NIA	Beauty Brands Acquisition Holdings LLC	Ownership	100.000	MLLIC		
.0000							Beauty Brands Acquisition Intermediate LLC	DE	NIA	Beauty Brands Acquisition LLC	Ownership	100.000	MLLIC		
.0000							Forma Brands, LLC	DE	NIA	Beauty Brands Acquisition Intermediate LLC	Ownership	100.000	MLLIC		
.0000							Apex Credit Holdings LLC	DE	NIA	JFIN Parent LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2012 Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2013 Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2014-II Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2015 Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MLLIC		
.0000							JFIN CLO 2015-II Ltd.	CYM	NIA	Apex Credit Holdings LLC	Ownership	85.000	MLLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							JFIN CLO 2016 Ltd.	.CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017 Ltd.	.CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017-II Ltd.	.CYM	NIA	Apex Credit Holdings LLC	Ownership	100.000	MMLIC		
.0000							Tomorrow Parent, LLC	.DE	NIA	JFIN Parent LLC	Ownership	100.000	MMLIC		
.0000							Custom Ecology Holdco, LLC	.DE	NIA	JFIN Parent LLC	Ownership	100.000	MMLIC		
.0000			86-2294635				Glidepath Holdings Inc.	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	63312	13-1935920				MassMutual Ascend Life Insurance Company	.OH	DS	Glidepath Holdings Inc.	Ownership	100.000	MMLIC		
.0000			31-1422717				AAG Insurance Agency, LLC	.KY	DS	MassMutual Ascend Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	93661	31-1021738				Annuity Investors Life Insurance Company	.OH	DS	MassMutual Ascend Life Insurance Company	Ownership	100.000	MMLIC		
.0000			31-1395344				MM Ascend Life Investor Services, LLC	.OH	DS	MassMutual Ascend Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Ascend Mortgage Lending LLC	.OH	DS	MassMutual Ascend Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-3260520				Manhattan National Holding, LLC	.OH	DS	MassMutual Ascend Life Insurance Company	Ownership	100.000	MMLIC		
.0435	Massachusetts Mut Life Ins Co	67083	45-0252531				Manhattan National Life Insurance Company	.OH	DS	Manhattan National Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Mortgage Lending 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							MMV CTF I GP LLC	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Climate Technology Fund I LP	.DE	DS	MMV CTF I GP LLC	Ownership	100.000	MMLIC		
.0000							MM Direct Private Investments Holding LLC	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Direct Private Investments UK Limited	.GBR	DS	MM Direct Private Investments Holding LLC	Ownership	100.000	MMLIC		
.0000							DPI-ACRES Capital LLC	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							DPI-ARES Mortgage Lending LLC	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MM Investment Holding	.CYM	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MMTH Bond Holdings LLC	.DE	DS	MM Investment Holding	Ownership	99.610	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	DS	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	.DE	DS	MM Investment Holding	Ownership	99.610	MMLIC		
.0000			32-0546197				MMAF Equipment Finance LLC 2017-B	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			82-5335801				MMAF Equipment Finance LLC 2018-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			83-3722640				MMAF Equipment Finance LLC 2019-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2019-B	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2020-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2020-B	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2021-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2022-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2022-B	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							MMAF Equipment Finance LLC 2023-A	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000							Rozier LLC	.DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			04-2443240				MML Management Corporation	.MA	DS	MM Investment Holding	Ownership	100.000	MMLIC		
.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							MML CM LLC	.DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Blueprint Income LLC	.NY	DS	MML CM LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							Flourish Digital Assets LLC	DE	DS	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Financial LLC	DE	DS	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Holding Company LLC	DE	DS	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Flourish Insurance Agency LLC	DE	DS	Flourish Holding Company LLC	Ownership	100.000	MMLIC		
.0000							Flourish Technologies LLC	DE	DS	MML CM LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Ventures US IV GP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLC		
.0000			04-1590850				MassMutual Ventures US IV GP	DE	NIA	Massachusetts Mutual Ascend	Ownership	1.000	MMLC		
.0000			04-1590850				MassMutual Venture US IV LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLC		
.0000			04-3356880				MML Distributors LLC	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	99.000	MMLIC		
.0000			04-3356880				MML Distributors LLC	MA	DS	MassMutual Holding LLC	Ownership	1.000	MMLIC		
.0000							MML Investment Advisers, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			46-3238013				MML Strategic Distributors, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1563535	2881445			The MassMutual Trust Company, FSB	CT	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.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		
.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		
.0000			37-1732913				Fern Street LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Low Carbon Energy Holding	GBR	DS	MassMutual Holding LLC	Ownership	49.000	MMLIC		
.0000							Sleeper Street LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	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			46-2252944				Haven Life Insurance Agency, LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			82-2932156				GASL Holdings LLC	DE	NIA	MassMutual Holding LLC	Ownership	11.300	MMLIC		
.0000			82-2932156				GASL Holdings LLC	DE	NIA	Barings LLC	Board		MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	11.300	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	C.M. Life Insurance Company	Ownership/Influence	1.100	MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	MassMutual Holding LLC	Ownership/Influence	22.900	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	C.M. Life Insurance Company	Ownership		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	27.600	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	14.300	MMLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.100	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y
PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	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? (Yes/No)	*
.0000			82-386745				Barings Global Real Assets Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	IRL	NIA	MassMutual Holding LLC	Ownership/Influence	19.600	MMLIC		
.0000							Barings Global Special Situations Credit Fund 3	IRL	NIA	Barings LLC	Management		MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	52.200	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	DE	NIA	Barings Asset Management Limited	Management		MMLIC		
.0000			06-1597528				MassMutual Assignment Company	NC	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			46-4255307				Marco Hotel LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			45-3623262				HB Naples Golf Owner LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			82-4411267				RB Apartments LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Intermodal Holding II 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							Athens Fund Management LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							Crane Venture Partners LLP	GBR	DS	MassMutual Ventures Holding LLC	Ownership	33.000	MMLIC		
.0000							MassMutual Ventures Management LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures SEA Management Private Limited	DE	DS	MassMutual Ventures Management LLC	Ownership	100.000	MMLIC		
.0000							MMV UK/SEA Limited	GBR	DS	MassMutual Ventures SEA Management Private Limited	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia I LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia II LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures Southeast Asia III LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MMV Digital I LLC	CYM	DS	MassMutual Ventures Southeast Asia III LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures UK LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1296410				MassMutual Ventures US I LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US II LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MassMutual Ventures US III LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							MM Catalyst Fund LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							MM Catalyst Fund 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							Rothesay Limited	GBR	DS	MM Rothesay Holdco US LLC	Ownership	48.800	MMLIC		
.0000							Rothesay Mortgages Limited	GBR	DS	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Life Plc	GBR	DS	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.1 Limited	GBR	DS	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.3 Limited	GBR	DS	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay MA No.4 Limited	GBR	DS	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							LT Mortgage Finance Limited	GBR	DS	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay Property Partnership 1 LLP	GBR	DS	Rothesay Life PLC	Ownership	100.000	MMLIC		
.0000							Rothesay Foundation	GBR	DS	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Pensions Management Limited	GBR	DS	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management UK Limited	GBR	DS	Rothesay Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management Australia Pty Ltd	AUS	DS	Rothesay Asset Management UK Limited	Ownership	100.000	MMLIC		
.0000							Rothesay Asset Management North America LLC	DE	DS	Rothesay Asset Management UK Limited	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				MML ISI Financial Alliances, LLC	DE	DS	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			47-1466022				LifeScore Labs, LLC	MA	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			45-4000072				MM Asset Management Holding LLC	..MA	..DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			51-0504477				Barings LLC	..MA	..DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0524271				Barings Asset Management (Asia) Holdings Limited	..HKG	..DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0457465				Barings International Fund Managers (Bermuda) Limited	..BMU	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457463				Barings Asset Management (Asia) Limited	..HKG	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Asset Management Korea Limited	..KOR	..DS	Barings Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Management (Shanghai) Limited	..HKG	..DS	Barings Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Overseas Investment Fund Management (Shanghai) Limited	..HKG	..DS	Barings Investment Management (Shanghai) Limited	Ownership	100.000	MMLIC		
.0000			98-0457707				Barings SICE (Taiwan) Limited	..TWN	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Singapore Pte. Ltd.	..SGP	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0236449				Barings Japan Limited	..JPN	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Australia Holding Company Pty Ltd	..AUS	..DS	Barings Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Australia Pty Ltd	..AUS	..DS	Barings Australia Holding Company Pty Ltd	Ownership	100.000	MMLIC		
.0000							Barings Australia Real Estate Holdings Pty Ltd	..AUS	..DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			14-0045656				Barings Australia Real Estate Pty Ltd	..AUS	..DS	Barings Australia Real Estate Holdings Pty Ltd	Ownership	100.000	MMLIC		
.0000			98-0457456				Barings Australia Property Partners Holdings Pty Ltd	..AUS	..DS	Barings Australia Real Estate Pty Ltd	Ownership	100.000	MMLIC		
.0000							Barings Australia Asset Management Pty Ltd	..AUS	..DS	Barings Australia Property Partners Holdings Pty Ltd	Ownership	100.000	MMLIC		
.0000							Barings Australia Property Partners Pty Ltd	..AUS	..DS	Barings Australia Property Partners Holdings Pty Ltd	Ownership	100.000	MMLIC		
.0000							Barings Australia Structured Finance Holdings Pty Ltd	..AUS	..DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Australia Structured Finance Pty Ltd	..AUS	..DS	Barings Australia Structured Finance Holdings Pty Ltd	Ownership	100.000	MMLIC		
.0000							Gryphon Capital Partners Pty Ltd	..AUS	..DS	Barings Australia Structured Finance Pty Ltd	Ownership	100.000	MMLIC		
.0000							Gryphon Capital Management Pty Ltd	..AUS	..DS	Gryphon Capital Partners Pty Ltd	Ownership	100.000	MMLIC		
.0000							Gryphon Capital Investments Pty Ltd	..AUS	..DS	Gryphon Capital Partners Pty Ltd	Ownership	100.000	MMLIC		
.0000			80-0875475				Barings Finance LLC	..DE	..DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BCF Europe Funding Limited	..IRL	..DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I LLC	..DE	..DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I Designated Activity Company	..IRL	..DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							Barings Real Estate Acquisitions LLC	..DE	..DS	Barings 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 Asset Management Spain SL	..ESP	..DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings France SAS	..FRA	..DS	Barings Europe Limited	Ownership	100.000	MMLIC		

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SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000							Baring International Fund Managers (Ireland) Limited	.IRL	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings GmbH	.DEU	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings Italy S.r.l.	.ITA	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings Sweden AB	.SWE	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings Netherlands B.V.	.NLD	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000			98-0432153				Barings (U.K.) Limited	.GBR	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings Switzerland Sarl	.CHE	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000			98-0241935				Baring Asset Management Limited	.GBR	.DS	Barings Europe Limited	Ownership	100.000	MLLIC		
.0000							Barings European Direct Lending 1 GP LLP	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000			98-0457328				Baring International Investment Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Baring International Investment Management Holdings	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000			98-0457587				Baring International Investment Management Holdings	.GBR	.DS	Baring International Investment Management Holdings	Ownership	100.000	MLLIC		
.0000			98-0457576				Baring Asset Management UK Holdings Limited	.GBR	.DS	Baring International Investment Management Holdings	Ownership	100.000	MLLIC		
.0000			98-0457586				Baring Fund Managers Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							BCGSS 2 GP LLP	.GBR	.DS	Baring Fund Managers Limited	Ownership	100.000	MLLIC		
.0000			98-0457578				Baring Investment Services Limited	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings Core Fund Feeder I GP S.a.r.l.	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings Investment Fund (LUX) GP S.a. r.l	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings BME GP S.a.r.l.	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings GPC GP S.a. r.l	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings European Core Property Fund GP Sarl	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							Barings Umbrella Fund (LUX) GP S.a.r.l.	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							GPLF4(S) GP S.a. r. l	.LUX	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							PREIF Holdings Limited Partnership	.GBR	.DS	Baring Asset Management Limited	Ownership	100.000	MLLIC		
.0000							BMC Holdings DE LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	.CA	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			81-4065378				Remington L & W Holdings LLC	.DE	.NIA		Ownership/Influence	19.900	MLLIC		
.0000			81-4065378				Remington L & W Holdings LLC	.DE	.NIA	Barings LLC	Influence		MLLIC		
.0000							Aland Royalty GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Alaska Future Fund GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BAI Funds SLP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BAI GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Baring Asset-Based Income Fund (US) GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings CMS Fund GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Infiniti Fund Management LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000							Barings Hotel Opportunity Venture I GP, LLC	.DE	.DS	Company	Ownership	100.000	MLLIC		
.0000							Baring Investment Series LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Emerging Generation Fund GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Emerging Generation Fund GP II, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings ERS PE Emerging Manager III GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Global Investment Funds (U.S.) Management LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				Barings CLO Investment Partners GP, LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Core Property Fund GP LLC	.DE	.DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Barings Direct Lending GP Ltd.	.CYM	.DS	Barings LLC	Ownership	100.000	MLLIC		

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SCHEDULE Y

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.0000							Barings Global Energy Infrastructure Advisors, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Centre Street CLO Equity Partnership GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			88-3792609				Barings Centre Street CLO Equity Partnership LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	22.700	MMLIC		
.0000			88-3792609				Barings Centre Street CLO Equity Partnership LP	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Real Assets Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings GPSF LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund II Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund III Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Special Situations Credit Fund 4 GP (Delaware) LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings - MM Revolver Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Real Estate European Value Add Fund II Feeder LLC	CYM	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BMT RE Debt Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	38.200	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	DS	Barings LLC	Management		MMLIC		
.0000			98-0536233				Benton Street Advisors, Inc.	CYM	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BHOVI Incentive LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BIG Real Estate Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BIG Real Estate Incentive I LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BIG Real Estate Incentive II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BRECS VII GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BREDIF GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BREF X GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Great Lakes III GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Lake Jackson LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Emerging Markets Blended Fund I GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			41-2280126				Mezzco III LLC	DE	DS	Barings LLC	Ownership	99.300	MMLIC		
.0000			80-0920285				Mezzco IV LLC	DE	DS	Barings LLC	Ownership	99.300	MMLIC		
.0000							Mezzco Australia II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							RECSA-NY GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-1624360				Barings CLO 2022-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2022-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Massachusetts Mutual Life Insurance Company	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	24.500	MMLIC		
.0000			04-3313782				MassMutual International LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual Solutions LLC	DE	DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000							Haven Technologies Asia Limited	HKG	DS	MassMutual Solutions LLC	Ownership	100.000	MMLIC		
.0000							Yunfeng Financial Group Limited	HKG	DS	MassMutual International LLC	Ownership	24.900	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							MassMutual Asia Limited (SPV)	.HKG	..DS	MassMutual International LLC	Ownership	100.000	MMLIC		
.0000			27-3576835				MassMutual External Benefits Group LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				100 w. 3rd Street LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				2160 Grand Manager LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-2432216				300 South Tryon Hotel LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				300 South Tryon LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	..DE	..DS	Barings LLC	Management		MMLIC		
.0000							Barings Affordable Housing Mortgage Fund II LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1902329				Barings Affordable Housing Mortgage Fund II LLC	..DE	..DS	Barings LLC	Management		MMLIC		
.0000			61-1902329				Barings Affordable Housing Mortgage Fund II LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	..DE	..DS	Barings LLC	Management		MMLIC		
.0000							Barings Emerging Generation Fund II LP	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	39.700	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund, LP	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	40.300	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund, LP	..DE	..DS	Barings LLC	Management		MMLIC		
.0000							Barings Global Energy Infrastructure Fund I LP	..CYM	..DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	..CYM	..DS	Baring Asset Management Limited	Management		MMLIC		
.0000							Barings Hotel Opportunity Venture I LP	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	65.000	MMLIC		
.0000							Barings Hotel Opportunity Venture I LP	..DE	..DS	Barings LLC	Management		MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	76.900	MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	..DE	..DS	C.M. Life Insurance Company	Influence		MMLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	..DE	..DS	Barings LLC	Management		MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	..LUX	..DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.000	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	..LUX	..DS	C.M. Life Insurance Company	Ownership	4.700	MMLIC		
.0000							Barings Real Estate European Value Add I SCSp	..LUX	..DS	Barings LLC	Management		MMLIC		
.0000							Barings Small Business Fund, L.P.	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	33.600	MMLIC		
.0000							Barings-MM Revolver Fund LP	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	86.000	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	..DE	..DS	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			82-2285211				Calgary Railway Holding LLC	..DE	..DS	C.M. Life Insurance Company	Ownership	10.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000			82-3307907				Cornbrook PRS Holdings LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MMLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development, LLC	DE	DS	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II LLC	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II LLC	MA	DS	Barings LLC	Management		MMLIC		
.0000							Cornerstone Permanent Mortgage Fund III LLC	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV LLC	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund LLC	MA	DS	Massachusetts Mutual Life Insurance Company	Ownership	98.800	MMLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund LLC	MA	DS	Barings LLC	Management		MMLIC		
.0000							CREA Ridge Apartments, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			20-0348173				CREA/PPC Venture, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Euro Real Estate Holdings LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	65.000	MMLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	DS	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
.0000							GIA EU Holdings LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-5360103				Landmark Manchester Holdings LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Miami Douglas Three MM, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM 1400 E 4th Street Member LLC	DE	DS	C.M. Life Insurance Company	Ownership	96.000	MMLIC		
.0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	27.000	MMLIC		
.0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	DS	C.M. Life Insurance Company	Ownership	0.800	MMLIC		
.0000			04-1590850				MM Brookhaven Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	DS	Barings LLC	Management		MMLIC		
.0000			04-1590850				MM East South Crossing Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			04-1590850				MM Horizon Savannah Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			04-1590850				MM Horizon Savannah Member LLC	DE	DS	C.M. Life Insurance Company	Ownership	3.700	MMLIC		
.0000			04-1590850				MM Kannapolis Industrial Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	82.720	MMLIC		
.0000			04-1590850				MM Kannapolis Industrial Member LLC	DE	DS	Massachusetts Mutual Ascend	Ownership	12.280	MMLIC		
.0000			04-1590850				MM MD1 Station Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM MD1 Station Member LLC	DE	DS	C.M. Life Insurance Company	Ownership		MMLIC		
.0000			04-1590850				MM MD2 Station Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM MD2 Station Member LLC	DE	DS	C.M. Life Insurance Company	Ownership		MMLIC		

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STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000			04-1590850				MM National Self-Storage Program Member LLC	DE	DS	C.M. Life Insurance Company	Ownership	98.000	MMLIC		
.0000							MM REED District Landco Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MM Subline Borrower LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	DS	C.M. Life Insurance Company	Ownership	6.000	MMLIC		
.0000			04-1590850				PACO France Logistics LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Riverwalk MM Member, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			81-5273574				Three PW Office Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			04-1590850				Trailside MM Member II LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	47.100	MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	66.970	MMLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	DS	C.M. Life Insurance Company	Ownership	7.380	MMLIC		
.0000			82-3250684				Unna, Dortmund Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.800	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	DS	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	DS	C.M. Life Insurance Company	Ownership	11.400	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	95.800	MMLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	DS	C.M. Life Insurance Company	Ownership	6.700	MMLIC		
.0000			88-3861481				West 37th Street Hotel LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	93.700	MMLIC		
.0000			88-3861481				West 37th Street Hotel LLC	DE	DS	C.M. Life Insurance Company	Ownership	6.300	MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	DE	DS	MassMutual Holding LLC	Ownership/Influence	26.690	MMLIC		
.0000			83-0560183				Aland Royalty Holdings LP	DE	DS	Barings LLC	Management		MMLIC		
.0000			81-2244465				Chassis Acquisition Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	30.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.000	MMLIC		
.0000			81-4258759				CRA Aircraft Holding LLC	DE	DS	Barings LLC	Influence		MMLIC		
.0000							EIP Holdings I, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	29.000	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership/Influence	31.520	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	DS	Barings LLC	Influence		MMLIC		
.0000			46-0687392				Validus Holding Company LLC	DE	DS	Barings LLC	Ownership	40.440	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	DS	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	DS	Barings LLC	Management		MMLIC		
.0000			04-1590850				SBNP SIA II LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y
PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	Domiciliary Location	Relationship to Reporting Entity	Directly Controlled by (Name of Entity/Person)	Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	If Control is Ownership Provide Percentage	Ultimate Controlling Entity(ies)/Person(s)	Is an SCA Filing Required? (Yes/No)	*
.0000							SBNP SIA III LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	72.900	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	56.700	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Barings LLC	Ownership	18.300	MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	63.500	MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Barings LLC	Influence		MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	76.634	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	3.800	MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	59.400	MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2015-I	CYM	NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		3
.0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2016-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO Ltd. 2017-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1473665				Barings CLO 2019-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2019-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2020-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2021-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2021-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2021-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2014-II BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson Euro CLO 2015-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
.0000			36-037260H				Barings Euro CLO 2019-I BV	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2019-II BV	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2020-I DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000			37-15576VH				Barings Euro CLO 2021-I DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2021-II DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2021-III DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings Euro CLO 2022-I DAC	IRL	NIA	Barings LLC	Influence		MMLIC		
.0000			82-5330194				Barings Global Em. Markets Equity Fund	NC	NIA	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	67.700	MMLIC		

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STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000							Barings Global Special Situations Credit 4 Delaware	..DE.....	..NIA.....	C.M. Life Insurance Company	Ownership	3.600	MMLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	..DE.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	..LUX.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership	13.100	MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	..LUX.....	..NIA.....	C.M. Life Insurance Company	Ownership	0.700	MMLIC		
.0000							Barings Global Special Situations Credit 4 LUX	..LUX.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000							Barings Global Technology Equity Fund	..IRL.....	..NIA.....	Barings LLC	Ownership/Influence	70.730	MMLIC		
.0000							Barings Global Dividends Champion Fund	..IRL.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000							Barings Europe Select Fund	..IRL.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	..CT.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership/Influence	51.100	MMLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	..CT.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000			86-3661023				Barings Innovations & Growth Real Estate Fund	..DE.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership	30.000	MMLIC		
.0000			86-3661023				Barings Innovations & Growth Real Estate Fund	..DE.....	..NIA.....	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000							Barings Middle Market CLO 2017-I Ltd & LLC	..CYM.....	..NIA.....	Barings LLC	Influence		MMLIC		
.0000							Barings Middle Market CLO 2018-I	..CYM.....	..NIA.....	Barings LLC	Influence		MMLIC		
.0000							Barings Middle Market CLO 2019-I	..CYM.....	..NIA.....	Barings LLC	Influence		MMLIC		
.0000			98-1612604				Barings Middle Market CLO Ltd 2021-I	..CYM.....	..NIA.....	Barings LLC	Influence		MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	..DE.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership/Influence	34.400	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	..DE.....	..NIA.....	Baring Asset Management Limited	Management		MMLIC		
.0000							Barings Target Yield Infrastructure Debt Fund	..LUX.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership	18.200	MMLIC		
.0000			98-1567942				Barings Target Yield Infrastructure Debt Fund	..LUX.....	..NIA.....	Barings Asset Management Limited	Management		MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	..DE.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.200	MMLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	..DE.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	..LUX.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership/Influence	32.200	MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	..LUX.....	..NIA.....	C.M. Life Insurance Company	Ownership	2.800	MMLIC		
.0000							Barings Euro Value Add II (BREEVA II)	..LUX.....	..NIA.....	Barings LLC	Management		MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	..DE.....	..NIA.....	MassMutual Holding LLC	Ownership/Influence	11.300	MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	..DE.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership	8.100	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	..DE.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership/Influence	87.700	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	7.300	MMLIC		
.0000							Barings European Core Property Fund SCSp	..LUX.....	..NIA.....	C.M. Life Insurance Company	Ownership	0.500	MMLIC		
.0000							Barings European Core Property Fund SCSp	..LUX.....	..NIA.....	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			46-5001122				Barings European Private Loan Fund III A	..LUX.....	..NIA.....	Massachusetts Mutual Life Insurance Company	Ownership	46.400	MMLIC		
.0000			38-4059932				Benchmark 2018-B2 Mortgage Trust	..NY.....	..NIA.....	Barings LLC	Influence		MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							Benchmark 2018-B4	.NY	NIA	Barings LLC	Influence				
.0000			38-4096530				Benchmark 2018-B8	.NY	NIA	Barings LLC	Influence				
.0000			20-5578089				Barings Core Property Fund LP	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	23.500			
.0000			20-5578089				Barings Core Property Fund LP	.DE	NIA	Barings Real Estate Advisers LLC	Management				
.0000			04-1590850				DPI Acres Capital SPV LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000			
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	Company	Ownership/Influence	34.300			
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	C.M. Life Insurance Company	Ownership	5.100			
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	Barings LLC	Management				
.0000			37-1708623				Great Lakes III, L.P.	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.500			
.0000			37-1708623				Great Lakes III, L.P.	.DE	NIA	Barings LLC	Management				
.0000							GIA EU Holdings - Emerson JV Sarl	.LUX	NIA	Company	Ownership/Influence	65.200			
.0000							GIA EU Holdings - Emerson JV Sarl	.LUX	NIA	Barings LLC	Management				
.0000			38-4041011				JPMCC Commercial Mortgage Securities Trust 2017-JP7	.NY	NIA	Barings LLC	Influence				
.0000			38-4032059				JPMDB Commercial Mortgage Securities Trust 2017-C5	.NY	NIA	Barings LLC	Influence				
.0000							Martello Re Limited	.BMU	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	0.275			
.0000			04-1590850				MM Direct Private Invetment Holding	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000			
.0000							MM CM Holding LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000			
.0000			04-1590850				MMV Climate Technology Fund GP	.DE	NIA	Company	Ownership	99.000			
.0000			04-1590850				MMV Climate Technology Fund GP	.DE	NIA	Massachusetts Mutual Ascend	Ownership	1.000			
.0000			04-1590850				Washington Pine LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000			
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	0.000			
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	.DE	NIA	C.M. Life Insurance Company	Ownership	4.524			
.0000			41-2280127				Tower Square Capital Partners III, L.P.	.DE	NIA	Barings LLC	Management				
.0000			41-2280127				Tower Square Capital Partners III, L.P.	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	16.400			
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	93.700			
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	.DE	NIA	Barings LLC	Management				
.0000							Babson Capital Loan Strategies Master Fund LP	.CYM	NIA	Barings LLC	Management				
.0000							Barings China Aggregate Bond Private Securities Investment Fund	.CHN	NIA	Barings LLC	Management				
.0000							Barings European Growth Trust Fund	.GBR	NIA	Barings LLC	Ownership/Influence	14.280			
.0000			47-3790192				Barings Global High Yield Fund	.MA	NIA	Barings LLC	Management				
.0000							CCIC Fund	.CHN	NIA	Barings LLC	Ownership/Influence	67.310			
.0000			71-1018134				Great Lakes II LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.600			
.0000			71-1018134				Great Lakes II LLC	.DE	NIA	C.M. Life Insurance Company	Ownership	98.000			
.0000			04-1590850				Wood Creek Venture Fund LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000			

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STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000							Barings California Mortgage Fund IV	..CA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	..LUX	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.959	MMLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	..LUX	.....NIA	C.M. Life Insurance Company	Ownership	2.300	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			82-2783393				Danville Riverwalk Venture, LLC	..DE	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.400	MMLIC		
.0000			13-1935920				MMLIC Debt Participations LLC	..DE	.....NIA	Massachusetts Mutual Ascend	Ownership	100.000	MMLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	..DE	.....NIA	Barings Real Estate Advisers LLC	Influence		MMLIC		
.0000			51-0529328		0000927972	OQ	MassMutual Premier Main Street Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	89.268	MMLIC		
.0000			26-3229251		0000927972	OQ	MassMutual Premier Strategic Emerging Markets Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.209	MMLIC		
.0000			04-3512593		0000916053	OQ	MassMutual Select Fundamental Growth Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.020	MMLIC		
.0000			42-1710935		0000916053	OQ	MassMutual Select Mid-Cap Value Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	29.852	MMLIC		
.0000			02-0769954		0000916053	OQ	MassMutual Select Small Capital Value Equity Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			04-3584140		0000916053	OQ	MassMutual Select Small Company Value Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.131	MMLIC		
.0000			82-3347422		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2005 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.479	MMLIC		
.0000			82-3355639		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2010 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3382389		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2015 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3396442		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2020 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3417420		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2025 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3430358		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2030 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3439837		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2035 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3451779		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2040 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3472295		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2045 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3481715		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2050 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3502011		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2055 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			82-3525148		0000916053	OQ	MassMutual Select T. Rowe Price Retirement 2060 Fund	..MANIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		

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STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000			82-3533944		0000916053	QO	MassMutual Select T. Rowe Price Retirement Balanced Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			46-4257056				MML Series International Equity Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	100.000	MMLIC		
.0000			47-3529636				MML Series II Dynamic Bond Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	0.000	MMLIC		
.0000			47-3544629				MML Series II Equity Rotation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	96.276	MMLIC		
.0000			27-1933389		0000916053	QO	MassMutual RetireSMART 2035 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	3.623	MMLIC		
.0000			27-1932769		0000916053	QO	MassMutual RetireSMART 2045 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	8.258	MMLIC		
.0000			46-3289207		0000916053	QO	MassMutual RetireSMART 2055 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.163	MMLIC		
.0000			47-5326235		0000916053	QO	MassMutual RetireSMART 2060 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	41.109	MMLIC		
.0000			45-1618155		0000916053	QO	MassMutual 20/80 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	100.000	MMLIC		
.0000			45-1618222		0000916053	QO	MassMutual 80/20 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	41.495	MMLIC		
.0000			03-0532464		0000916053	QO	MassMutual RetireSMART In Retirement Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	8.832	MMLIC		
.0000			45-1618262		0000916053	QO	MassMutual 40/60 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Influence	100.000	MMLIC		
.0000			45-1618046		0000916053	QO	MassMutual 60/40 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-1618046		0000916053	QO	MassMutual ishares 60/40 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	68.903	MMLIC		
.0000			04-3212054		0000916053	QO	MassMutual Balanced Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3556992		0000916053	QO	MassMutual Blue Chip Growth Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3277549		0000916053	QO	MassMutual Core Bond Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3539084		0000916053	QO	MassMutual Disciplined Growth Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3539083		0000916053	QO	MassMutual Disciplined Value Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			01-0821120		0000916053	QO	MassMutual Diversified Value Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3512590		0000916053	QO	MassMutual Equity Opportunities Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3512589		0000916053	QO	MassMutual Growth Opportunities Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			03-0532475		0000916053	QO	MassMutual Inflation-Protected and Income Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3512596		0000916053	QO	MassMutual Mid Cap Growth Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3464165		0000916053	QO	MassMutual Premier Diversified Bond Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			92-1441036		0000916053	QO	MassMutual RetireSMART by JPMorgan 2065 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		

STATEMENT AS OF SEPTEMBER 30, 2023 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? (Yes/No)	*
.0000			45-1618222		0000916053	QO	MassMutual Select 80/20 Allocation Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3584138		0000916053	QO	MassMutual Select Fundamental Value Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3557000		0000916053	QO	MassMutual Select Overseas Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			92-1427882		0000916053	QO	MassMutual Select T Rowe Price Retirement 2065 Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.170	MMLIC		
.0000			04-3464205		0000916053	QO	MassMutual Small Cap Growth Equity Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-3424705		0000916053	QO	MassMutual Small Cap Opportunities Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			02-0769954		0000916053	QO	MassMutual Small Cap Value Equity Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-0099965		0000916053	QO	MassMutual Strategic Bond Fund	..MA	.....NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns 14.23% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own .5% and includes only Great Lakes III, L.P.
3	Debt investors own .2% and includes only Great Lakes III, L.P.

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

The following supplemental reports are required to be filed as part of your statement filing. However, in the event that your company does not transact the type of business for which the special report must be filed, your response of NO to the specific interrogatory will be accepted in lieu of filing a "NONE" report and a bar code will be printed below. If the supplement is required of your company but is not being filed for whatever reason enter SEE EXPLANATION and provide an explanation following the interrogatory questions.

	Response
1. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	NO
2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement?	NO
3. Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC?	NO
4. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC?	NO
5. Will the Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI be filed with the state of domicile and electronically with the NAIC?	NO
6. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Average Market Value) be filed with the state of domicile and electronically with the NAIC?	NO
7. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) be filed with the state of domicile and electronically with the NAIC?	NO
8. Will the Life PBR Statement of Exemption be filed with the state of domicile by July 1st and electronically with the NAIC with the second quarterly filing per the Valuation Manual (by August 15)? (2nd Quarter Only) The response for 1st and 3rd quarters should be N/A. A NO response resulting with a bar code is only appropriate in the 2nd quarter. In the case of an ongoing statement of exemption, enter "SEE EXPLANATION" and provide as an explanation that the company is utilizing an ongoing statement of exemption.	N/A

AUGUST FILING

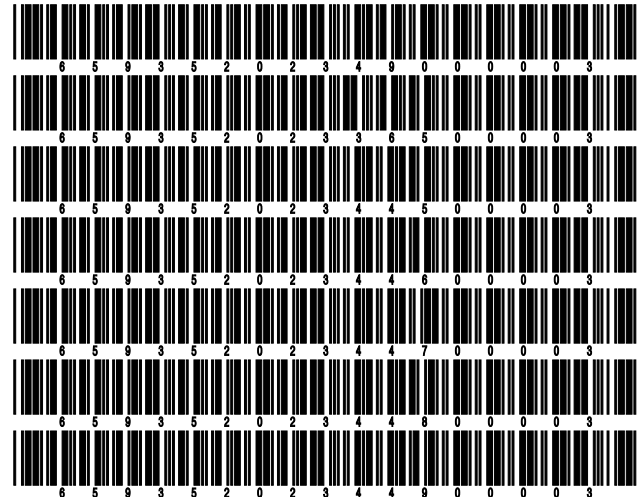
9. Will the regulator-only (non-public) Communication of Internal Control Related Matters Noted in Audit be filed with the state of domicile and electronically with the NAIC (as a regulator-only non-public document) by August 1? The response for 1st and 3rd quarters should be N/A. A NO response resulting with a bar code is only appropriate in the 2nd quarter.	N/A
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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]



STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

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. Employee insurance plan advances	41,294,340	91	41,294,248	40,252,979
2505. Investment in trust	17,467,662		17,467,662	20,001,607
2506. Pension plan asset	658,992,321	658,992,321		
2507. Cash advances to agents	309,526,763	309,526,763		
2508. Receivable for commissions and expenses on long-term lease	69,782,577	69,782,577		
2509. Intangible assets	34,349,332	34,349,332		
2510. Bills receivable	50,397	50,397		
2597. Summary of remaining write-ins for Line 25 from overflow page	1,131,463,392	1,072,701,481	58,761,911	60,254,586

Additional Write-ins for Liabilities Line 25

	1 Current Statement Date	2 December 31 Prior Year
2504. Funds awaiting escheat and other miscellaneous	100,214,533	68,839,651
2505. Deferred income liability	24,368,528	26,963,691
2597. Summary of remaining write-ins for Line 25 from overflow page	124,583,062	95,803,342

Additional Write-ins for Summary of Operations Line 8.3

	1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
08.304. Revenue sharing	17,314,097	29,208,454	42,123,388
08.305. Miscellaneous income	(30,524,905)	(8,375,671)	84,818,527
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	(13,210,808)	20,832,782	126,941,915

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. Miscellaneous charges to operations	(31,396,830)	40,487,591	28,069,282
2705. Change in reserves due to reinsurance agreement		10,153,202	20,592,088
2706. Market value adjustment transfer		(637,440)	
2797. Summary of remaining write-ins for Line 27 from overflow page	(31,396,830)	50,003,352	48,661,370

STATEMENT AS OF SEPTEMBER 30, 2023 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	354,748,274	394,897,743
2. Cost of acquired:		
2.1 Actual cost at time of acquisition		
2.2 Additional investment made after acquisition	5,517,374	13,292,853
3. Current year change in encumbrances	200,000	
4. Total gain (loss) on disposals	2,896,140	127,364,440
5. Deduct amounts received on disposals	5,488,624	144,453,134
6. Total foreign exchange change in book/adjusted carrying value		
7. Deduct current year's other than temporary impairment recognized		
8. Deduct current year's depreciation	23,411,264	36,353,628
9. Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8)	334,461,900	354,748,274
10. Deduct total nonadmitted amounts		
11. Statement value at end of current period (Line 9 minus Line 10)	334,461,900	354,748,274

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	24,971,963,928	26,344,845,562
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	1,421,200,511	2,296,752,966
2.2 Additional investment made after acquisition	322,758,241	424,032,794
3. Capitalized deferred interest and other	20,078,965	32,386,748
4. Accrual of discount	5,258,931	14,924,106
5. Unrealized valuation increase (decrease)		
6. Total gain (loss) on disposals	(23,050,160)	(36,636,956)
7. Deduct amounts received on disposals	2,448,894,838	3,824,155,926
8. Deduct amortization of premium and mortgage interest points and commitment fees	9,006,274	11,056,884
9. Total foreign exchange change in book value/recorded investment excluding accrued interest	21,099,112	(265,231,166)
10. Deduct current year's other than temporary impairment recognized	13,575,524	3,897,317
11. Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	24,267,832,892	24,971,963,928
12. Total valuation allowance	(38,728,452)	
13. Subtotal (Line 11 plus Line 12)	24,229,104,440	24,971,963,928
14. Deduct total nonadmitted amounts		
15. Statement value at end of current period (Line 13 minus Line 14)	24,229,104,440	24,971,963,928

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	12,340,402,460	12,601,759,357
2. Cost of acquired:		
2.1 Actual cost at time of acquisition	702,765,552	926,646,083
2.2 Additional investment made after acquisition	1,547,924,742	4,121,215,415
3. Capitalized deferred interest and other		
4. Accrual of discount	27,319,288	
5. Unrealized valuation increase (decrease)	210,143,124	(368,153,834)
6. Total gain (loss) on disposals	8,972,231	31,348,188
7. Deduct amounts received on disposals	1,796,221,028	4,952,577,885
8. Deduct amortization of premium and depreciation	35,963,721	1,170,439
9. Total foreign exchange change in book/adjusted carrying value	23,857,474	1,620,012
10. Deduct current year's other than temporary impairment recognized	173,769,640	20,284,437
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	12,855,430,482	12,340,402,460
12. Deduct total nonadmitted amounts	45,486,802	43,994,285
13. Statement value at end of current period (Line 11 minus Line 12)	12,809,943,679	12,296,408,175

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	163,056,331,820	150,758,481,945
2. Cost of bonds and stocks acquired	23,589,075,489	45,554,452,552
3. Accrual of discount	206,385,273	290,264,109
4. Unrealized valuation increase (decrease)	393,208,616	(794,150,078)
5. Total gain (loss) on disposals	(423,140,955)	(403,895,086)
6. Deduct consideration for bonds and stocks disposed of	18,321,051,714	30,376,581,148
7. Deduct amortization of premium	117,892,709	168,675,549
8. Total foreign exchange change in book/adjusted carrying value	(110,663,202)	(1,394,352,669)
9. Deduct current year's other than temporary impairment recognized	162,424,188	440,227,144
10. Total investment income recognized as a result of prepayment penalties and/or acceleration fees	1,301,450	31,014,886
11. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	168,111,129,880	163,056,331,820
12. Deduct total nonadmitted amounts		
13. Statement value at end of current period (Line 11 minus Line 12)	168,111,129,880	163,056,331,820

STATEMENT AS OF SEPTEMBER 30, 2023 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)	78,979,107,314	13,238,666,588	11,937,438,456	6,904,470	76,131,438,163	78,979,107,314	80,287,239,916	73,982,473,782
2. NAIC 2 (a)	55,986,846,355	38,378,378,998	37,252,629,968	(201,318,928)	56,469,091,394	55,986,846,355	56,911,276,457	55,757,939,629
3. NAIC 3 (a)	4,245,674,696	314,106,699	1,293,915,863	752,475,773	5,185,438,623	4,245,674,696	4,018,341,305	5,496,598,645
4. NAIC 4 (a)	2,804,709,952	1,443,385,424	149,361,599	(1,432,189,584)	3,051,998,891	2,804,709,952	2,666,544,193	2,888,214,591
5. NAIC 5 (a)	2,614,373,739	6,912,500	401,595,225	150,068,008	2,552,231,212	2,614,373,739	2,369,759,022	2,602,990,396
6. NAIC 6 (a)	316,777,472	38,365,729	6,703,029	15,132,337	300,509,662	316,777,472	363,572,509	436,957,441
7. Total Bonds	144,947,489,528	53,419,815,938	51,041,644,140	(708,927,924)	143,690,707,945	144,947,489,528	146,616,733,402	141,165,174,484
PREFERRED STOCK								
8. NAIC 1	198,736,131	1,200			198,736,131	198,736,131	198,737,331	198,736,131
9. NAIC 2	89,043,804	73,281,200	16,115,000	(370,232)	89,999,708	89,043,804	145,839,772	71,565,877
10. NAIC 3	25,425,687			(36,160)	25,855,087	25,425,687	25,389,527	148,565,807
11. NAIC 4	6,707,683	3,000,000			5,625,740	6,707,683	9,707,683	5,192,519
12. NAIC 5	13,539,719			3,371,523	13,582,761	13,539,719	16,911,242	12,585,408
13. NAIC 6	41,064,666	600,000		(2,060,145)	34,570,399	41,064,666	39,604,521	14,766,010
14. Total Preferred Stock	374,517,690	76,882,400	16,115,000	904,986	368,369,826	374,517,690	436,190,076	451,411,752
15. Total Bonds and Preferred Stock	145,322,007,218	53,496,698,338	51,057,759,140	(708,022,938)	144,059,077,771	145,322,007,218	147,052,923,478	141,616,586,236

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

NAIC 1 \$ 1,899,897,312 ; NAIC 2 \$ 3,947,592,419 ; NAIC 3 \$ 3,735,470 ; NAIC 4 \$ 4,822,549 ; NAIC 5 \$; NAIC 6 \$

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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
7709999999 Totals	1,287,651,414	xxx	1,279,760,550	9,995,990	53,704

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	525,180,990	2,715,450,459
2. Cost of short-term investments acquired	2,487,468,694	1,296,966,809
3. Accrual of discount	23,927,845	3,245,603
4. Unrealized valuation increase (decrease)		
5. Total gain (loss) on disposals	(308,695)	3,129,406
6. Deduct consideration received on disposals	1,748,617,421	3,493,749,010
7. Deduct amortization of premium		
8. Total foreign exchange change in book/adjusted carrying value		137,723
9. Deduct current year's other than temporary impairment recognized		
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9)	1,287,651,414	525,180,990
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	1,287,651,414	525,180,990

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART A - VERIFICATION

Options, Caps, Floors, Collars, Swaps and Forwards

1. Book/Adjusted Carrying Value, December 31, prior year (Line 10, prior year)	8,010,881,255
2. Cost Paid/(Consideration Received) on additions	76,451,372
3. Unrealized Valuation increase/(decrease)	349,227,140
4. SSAP No. 108 adjustments	
5. Total gain (loss) on termination recognized	(280,346,300)
6. Considerations received/(paid) on terminations	(190,296,603)
7. Amortization	110,457
8. Adjustment to the Book/Adjusted Carrying Value of hedged item	
9. Total foreign exchange change in Book/Adjusted Carrying Value	54,251,910
10. Book/Adjusted Carrying Value at End of Current Period (Lines 1+2+3+4+5-6+7+8+9)	8,400,872,436
11. Deduct nonadmitted assets	
12. Statement value at end of current period (Line 10 minus Line 11)	8,400,872,436

SCHEDULE DB - PART B - VERIFICATION

Futures Contracts

1. Book/Adjusted carrying value, December 31 of prior year (Line 6, prior year).....	18,122,637
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	(12,314,404)
3.14 Section 1, Column 18, prior year	18,122,636
	(30,437,040)
	(30,437,040)
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	(12,314,391)
3.24 Section 1, Column 19, prior year plus	18,122,636
3.25 SSAP No. 108 adjustments	(30,437,027)
	(30,437,027)
3.3 Subtotal (Line 3.1 minus Line 3.2)	(13)
4.1 Cumulative variation margin on terminated contracts during the year	(68,414,095)
4.2 Less:	
4.21 Amount used to adjust basis of hedged item	
4.22 Amount recognized	(86,536,730)
4.23 SSAP No. 108 adjustments	(86,536,730)
4.3 Subtotal (Line 4.1 minus Line 4.2)	18,122,635
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	12,314,393
6. Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)	(12,314,404)
7. Deduct total nonadmitted amounts	
8. Statement value at end of current period (Line 6 minus Line 7)	(12,314,404)

STATEMENT AS OF SEPTEMBER 30, 2023 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*FX4	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1	50,000,000	26,252,092	7,549,920	09/05/2023	06/03/2051	SOFR Replacement Swap - CME cleared	19,323	(18,622,225)	42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1	26,232,769	26,172,145
57629*FX4	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1		12,283,245	11,672,267	09/05/2023	06/03/2051	SOFR Replacement Swap - CME cleared			320808-AD-0	FIRST MARYLAND CAP I-LIMITED GUARANTEE NOTE	2	12,283,245	11,672,267
57629*FX4	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1		10,000,000	9,852,640	09/05/2023	06/03/2051	SOFR Replacement Swap - CME cleared			09629L-AE-5	BLUEMOUNTAIN CLO XXIII L-BLUEM 2018-23A B	1	10,000,000	9,852,640
57629*FX4	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1		19,102,226	18,911,482	09/05/2023	06/03/2051	SOFR Replacement Swap - CME cleared			03328Y-AG-9	Anchorage Capital CLO Lt-ANCHC 2018-1RA C	1	19,102,226	18,911,482
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	264,000,000	3,007,073	(64,291,810)	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR		(67,240,164)	83149F-AD-6	SLM Student Loan Trust 2006-6	1	3,007,073	2,948,354
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,990,312	22,056,354	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			375415-AA-4	GILBERT PARK CLO LTD-SERIES 17-1A CLASS A	1	21,990,312	22,056,354
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,899,871	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			67097Q-AC-9	OCF CLO 2017-14 Ltd-SERIES 17-14A CLASS A1B	1	13,100,000	12,899,871
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,888,224	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			38137H-BW-7	Goldentree Loan Opportun-SERIES 2015-11A CLASS BR2	1	8,000,000	7,888,224
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,033,279	9,864,070	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			56845N-AE-0	Signal Peak CLO 8 Ltd-SPEAK 2020-8A C	1	10,033,279	9,864,070
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,696,680	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			33833V-AE-5	S22 Funding CLO 2019-5 L-MORGN 2021-7A B	1	10,000,000	9,696,680
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,050,000	10,924,129	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			03331J-AJ-1	Anchorage Capital CLO Lt-ANCHC 2018-10A B	1	11,050,000	10,924,129
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,887,875	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			38137M-AK-3	Goldentree Loan Opportun-GLD12 2016-12A AJR	1	15,000,000	14,887,875
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,417,529	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			03767M-AJ-7	Apidos CLO-APID 2018-29A B	1	4,500,000	4,417,529
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,600,000	19,596,413	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1	19,600,000	19,596,413
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	11,850,852	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			04017J-AE-1	ARES CLO Ltd-ARES 2018-49A B	1	12,000,000	11,850,852
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,000,000	59,743,980	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			29002H-AL-3	Elmwood CLO III Ltd-ELMW3 2019-3A AR	1	60,000,000	59,743,980
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,220,000	1,140,341	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			056162-AU-4	Babson CLO Ltd 2015-I-SERIES 2015-1A CLASS DR	2	1,220,000	1,140,341
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		196,970	193,401	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			06759F-AE-6	BABSON CLO LTD 2015-II-SERIES 15-2A CLASS C1R	1	196,970	193,401
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		126,125,000	126,125,000	05/30/2023	11/29/2042	Interest Rate Swap - OTC SOFR			515138-AA-9	Landmark Equity Partners XVI-D, LLC	1	126,125,000	126,125,000
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	12,000,000	(11,247,548)	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR		(23,124,092)	67112K-AC-3	OCF CLO Ltd-SEREIS 18-15A CLASS A3	1	12,000,000	11,876,544
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,246,919	12,198,115	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			056162-AN-0	Babson CLO Ltd 2015-I-BABSN 2015-1A AR	1	12,246,919	12,198,115
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,154,701	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			03330A-AC-6	Anchorage Capital CLO 3-ANCHC 2014-3RA B	1	3,200,000	3,154,701
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		65,000,000	64,808,315	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	65,000,000	64,808,315
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,900,000	5,841,773	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			87250R-AB-0	TICP CLO XV Ltd-TICP 2020-15A B HIGHER EDUCATION FUNDING-SERIES	1	5,900,000	5,841,773
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,010,229	1,713,915	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			429827-AR-9	2004-1 CLASS B1	1	2,010,229	1,713,915
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,106,044	9,313,060	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			46647P-AR-7	JPMorgan Chase & Co-SENIOR UNSECURED	1	10,106,044	9,313,060
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	5,813,851	(17,467,497)	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR		(23,124,092)	92977H-AG-3	WACHOVIA STUDENT LOAN TR-WISLT 2005-1 B	1	5,813,851	5,656,595
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,014,853	19,951,380	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			94950G-AN-7	Wellfleet CLO 2017-1 Ltd-WELF 2017-1A A2R	1	20,014,853	19,951,380
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	29,711,940	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			83004L-AC-9	610 Funding CLO-SIX10 2021-2RA A1R2	1	30,000,000	29,711,940
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,000,000	22,976,885	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR			06760P-AE-1	Babson CLO Ltd/Cayman Is-BABSN 2018-3A A2	1	23,000,000	22,976,885

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STATEMENT AS OF SEPTEMBER 30, 2023 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*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,456,557	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR				55821A-AE-8	Madison Park Funding Ltd-SERIES 18-28A CLASS B	1	9,500,000	9,456,557
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,652,263	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR				06760B-AC-6	BABSON CLO LTD-SERIES 17-1A CLASS A2	1	6,700,000	6,652,263
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,250,000	3,162,630	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR				087598-AE-8	BETHPAGE PARK CLO LTD-BETHP 2021-1A CLASS C	1	3,250,000	3,162,630
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		959,417	904,187	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR				784424-AE-3	SLC STUDENT LOAN TRUST 2-SERIES 07-1 CLASS B	1	959,417	904,187
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,321,156	6,018,514	06/27/2023	12/27/2042	Interest Rate Swap - OTC SOFR				62983P-AB-1	Nakilat Inc-SECURED 144A GoldenTree Loan Managem-GLM 2018-3A B1	1	6,321,156	6,018,514
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	6,000,000	(17,156,519)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(23,090,915)		38138B-AG-5	Signal Peak CLO 8 Ltd-SPEAK 2020-8A CLASS B	1	6,000,000	5,934,396
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,068,365	19,615,760	12/28/2012	12/28/2042	Interest Rate Swap - OTC				56845N-AC-4	Magnelite XIX Ltd-SERIES 2017-19A CLASS B1R	1	20,068,365	19,615,760
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,750,000	13,588,946	12/28/2012	12/28/2042	Interest Rate Swap - OTC				55954K-AN-5	Canyon CLO 2020-2 Ltd-CANVC 2020-2A AR	1	13,750,000	13,588,946
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		34,745,000	34,454,706	12/28/2012	12/28/2042	Interest Rate Swap - OTC				13876N-AL-7	Voya CLO 2019-1 Ltd-VOYA 2019-1A AR	1	34,745,000	34,454,706
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,097,933	12,507,089	12/28/2012	12/28/2042	Interest Rate Swap - OTC				92917N-AJ-7	NELNET STUDENT LOAN TRUS-SERIES 2015-3A CLASS B	1	12,097,933	12,507,089
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,033,863	2,040,747	12/28/2012	12/28/2042	Interest Rate Swap - OTC				64033T-AB-9	TICOP CLO VI 2016-5 LTD-TICOP 2016-5A A2R	1	2,033,863	2,040,747
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	2,964,156	12/28/2012	12/28/2042	Interest Rate Swap - OTC				87248K-AS-3	Wellfleet CLO Ltd-SERIES 18-1A CLASS A	1	3,000,000	2,964,156
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	995,214	12/28/2012	12/28/2042	Interest Rate Swap - OTC				94950J-AA-9	HPS LOAN MANAGEMENT 13-2-HLM 13A-18 A2	1	1,000,000	995,214
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,961,560	12/28/2012	12/28/2042	Interest Rate Swap - OTC				40437L-AE-2	Voya CLO Ltd-SERIES 18-1A CLASS B Symphony CLO XXIX Ltd-SYMP 2021-29A C	1	4,000,000	3,961,560
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,060,000	4,927,504	12/28/2012	12/28/2042	Interest Rate Swap - OTC				92917A-AE-6	ASSURANT CLO I LTD-MORGN 2017-1A CR 18A B	1	5,060,000	4,927,504
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,150,000	3,093,943	12/28/2012	12/28/2042	Interest Rate Swap - OTC				87168G-AG-4	Morgan Stanley Eaton Van-MSEV 2022-18A B	1	3,150,000	3,093,943
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,108,758	12/28/2012	12/28/2042	Interest Rate Swap - OTC				33836J-AG-4	Wellfleet CLO Ltd-SERIES 18-1A CLASS A	1	3,200,000	3,108,758
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,054,650	12/28/2012	12/28/2042	Interest Rate Swap - OTC				617924-AE-5	BABSON CLO LTD 2015-II-SERIES 15-2A CLASS AR	1	10,000,000	10,054,650
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	39,000,000	15,722,431	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(23,090,915)		94950J-AA-9	Ares XXXIR CLO Ltd-SERIES 14-31RA CLASS B	1	39,000,000	38,813,346
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,248,975	13,239,714	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06759F-AB-2	TICOP CLO VI 2016-2 Ltd-TICOP 2016-6A CR2	1	13,248,975	13,239,714
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,780,840	12/28/2012	12/28/2042	Interest Rate Swap - OTC				04017T-AE-9	CIFC Funding 2018-I Ltd-SERIES 18-1A CLASS C	1	20,000,000	19,780,840
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,600,000	1,571,922	12/28/2012	12/28/2042	Interest Rate Swap - OTC				87246M-AW-2	Benefit Street Partners -BSP 2018-15A A2A	1	1,600,000	1,571,922
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,200,000	4,060,472	12/28/2012	12/28/2042	Interest Rate Swap - OTC				12551R-AE-8	CenterPoint Properties T Senior Note Ser	1	4,200,000	4,060,472
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,096,877	12/28/2012	12/28/2042	Interest Rate Swap - OTC				08179M-AC-3	Babson CLO Ltd/Cayman Is-BABSN LP-3A B	1	1,100,000	1,096,877
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,575,000	7,942,577	12/28/2012	12/28/2042	Interest Rate Swap - OTC				151895-DE-5	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	8,575,000	7,942,577
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,000,000	9,014,805	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06762Q-AC-1	BlueMountain CLO 2015-4 -SERIES 15-4A CLASS A2R	1	9,000,000	9,014,805
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	13,000,000	12/28/2012	12/28/2042	Interest Rate Swap - OTC				18685e-AC-6	Nelnet Student Loan Trus-SERIES 19-3A CLASS B	1	13,000,000	13,000,000
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	20,000,000	(3,463,975)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(23,090,915)		09628N-AQ-5		1	20,000,000	19,626,940
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,050,000	11,713,129	12/28/2012	12/28/2042	Interest Rate Swap - OTC				64031D-AB-6		1	12,050,000	11,713,129

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STATEMENT AS OF SEPTEMBER 30, 2023 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 Corporate Bonds	1		1,938,910	1,781,922	12/28/2012	12/28/2042	Interest Rate Swap - OTC				63939F-AC-4	Navient Student Loan Tru-SERIES 15-1 CLASS B	1	1,938,910	1,781,922
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,998,100	12/28/2012	12/28/2042	Interest Rate Swap - OTC				12550G-AE-3	CIFC Funding Ltd-CIFC 2018-5A B .. Rockford Tower CLO 2017--SERIES 17-3A CLASS B	1	5,000,000	4,998,100
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,644,828	12/28/2012	12/28/2042	Interest Rate Swap - OTC				77341D-AE-7	TICP CLO X LTD-SERIES 18-10A CLASS C	1	6,750,000	6,644,828
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,600,000	3,547,411	12/28/2012	12/28/2042	Interest Rate Swap - OTC				87249C-AE-1		1	3,600,000	3,547,411
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,175,562	12/28/2012	12/28/2042	Interest Rate Swap - OTC				48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2 Regatta XIV Funding Ltd-SERIES 18-3A CLASS B	1	3,200,000	3,175,562
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,250,000	4,209,077	12/28/2012	12/28/2042	Interest Rate Swap - OTC				75888M-AG-5	Harbor Park CLO, Ltd-HAR-HARB 2018-1A B1	1	4,250,000	4,209,077
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,200,000	5,135,796	12/28/2012	12/28/2042	Interest Rate Swap - OTC				41154X-AG-0	Barings CLO Ltd 2020-I-BABSN 2020-1A AR	1	5,200,000	5,135,796
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,600,000	38,349,370	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06762L-AM-0		1	38,600,000	38,349,370
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,813,558	6,474,762	12/28/2012	12/28/2042	Interest Rate Swap - OTC				03209S-AH-4	Amphenol Corp-SENIOR UNSECURED	1	6,813,558	6,474,762
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	9,550,000	(2,009,276)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(11,545,457)		04965F-AG-6	Atrium XV-SERIES 15A CLASS B	1	9,550,000	9,536,181
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,713,634	17,087,602	12/28/2012	12/28/2042	Interest Rate Swap - OTC				66704J-CB-2	NORTHSTAR EDUCATION FINA-SERIES 07-1 CLASS B	1	18,713,634	17,087,602
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,256,550	12/28/2012	12/28/2042	Interest Rate Swap - OTC				64034N-AB-1	NSLT 2019-2A B	1	5,600,000	5,256,550
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,100,000	2,875,940	12/28/2012	12/28/2042	Interest Rate Swap - OTC				63940A-AD-0	NAVIENT STUDENT LOAN TRU-SERIES 17-4A CLASS B	1	3,100,000	2,875,940
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,000,000	5,912,970	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06762L-AN-8	Barings CLO Ltd 2020-I-BABSN 2020-1A BR	1	6,000,000	5,912,970
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,096,877	12/28/2012	12/28/2042	Interest Rate Swap - OTC				08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,096,877
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,500,000	2,476,865	12/28/2012	12/28/2042	Interest Rate Swap - OTC				13876J-AE-2	Canyon Capital CLO Ltd-CANYC 2012-18A B	1	2,500,000	2,476,865
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,336,442	12/28/2012	12/28/2042	Interest Rate Swap - OTC				77342K-AC-4	Rockford Tower CLO 2018-2 Ltd	1	6,400,000	6,336,442
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,050,000	7,770,005	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06760G-AC-5	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS B	1	8,050,000	7,770,005
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	10,000,000	(1,684,767)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(11,545,457)		24380L-AE-3	DEER CREEK CLO LTD 2017--SERIES 17-1A CLASS B	1	10,000,000	9,860,690
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,500,000	24,295,646	12/28/2012	12/28/2042	Interest Rate Swap - OTC				05683E-AN-2	Bain Capital Credit CLO -BCC 2020-2A AR	1	24,500,000	24,295,646
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,570,000	13,482,270	12/28/2012	12/28/2042	Interest Rate Swap - OTC				48249V-AQ-4	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A2R	1	13,570,000	13,482,270
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,898,904	12/28/2012	12/28/2042	Interest Rate Swap - OTC				05874X-AC-3	Ballyrook CDO Ltd-BALLY 2020-14A A2	1	4,000,000	3,898,904
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,400,000	3,339,361	12/28/2012	12/28/2042	Interest Rate Swap - OTC				75009P-AE-7	Rad CLO 12 Ltd-RAD 2021-12A C	1	3,400,000	3,339,361
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,077,201	6,251,465	12/28/2012	12/28/2042	Interest Rate Swap - OTC				46149M-AA-4	Invesco CLO Ltd-INVCO 2021-2A A	1	6,077,201	6,251,465
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	3,900,000	(7,734,147)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(11,545,457)		69703P-AE-9	Palmer Square CLO 2018-1-PLMRS 2018-1A B	1	3,900,000	3,811,310
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,889,411	8,464,003	12/28/2012	12/28/2042	Interest Rate Swap - OTC				F7701F-AA-5	SFR FTTH SAS Term Loan	2	8,889,411	8,464,003
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,500,000	23,507,848	12/28/2012	12/28/2042	Interest Rate Swap - OTC				06760W-AG-1	Barings Middle Market CL-BMM 2021-1A B	1	24,500,000	23,507,848
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,750,000	9,548,780	12/28/2012	12/28/2042	Interest Rate Swap - OTC				92918Q-AE-0	Voya CLO Ltd-VOYA 2021-1A B	1	9,750,000	9,548,780
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,096,877	12/28/2012	12/28/2042	Interest Rate Swap - OTC				08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,096,877
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,600,000	4,564,437	12/28/2012	12/28/2042	Interest Rate Swap - OTC				05875H-AE-3	Ballyrook CLO 2018-1 Ltd-SERIES 2018-1A CLASS B	1	4,600,000	4,564,437

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STATEMENT AS OF SEPTEMBER 30, 2023 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*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,375,000	6,248,371	12/28/2012	12/28/2042	Interest Rate Swap - OTC				680033-AC-1	Old National Bancorp/IN-SENIOR UNSECURED NOTE	2	6,375,000	6,248,371
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,022,340	12/28/2012	12/28/2042	Interest Rate Swap - OTC				55819F-AE-1	Madison Park Funding Ltd-MDPK 2022-55A B1	1	5,000,000	5,022,340
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	(6,154,345)	12/28/2012	12/28/2042	Interest Rate Swap - OTC		(11,545,457)		12548J-AE-2	CIFC FUNDING LTD-SERIES 17-3A CLASS ALM XIV Ltd-SERIES 14-14A CLASS	1	5,400,000	5,391,112
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,783,249	12/28/2012	12/28/2042	Interest Rate Swap - OTC				74988L-AC-8	A2R2 Northstar Education Fina-REVENUE BONDS	1	11,900,000	11,783,249
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,000,000	5,824,278	12/28/2012	12/28/2042	Interest Rate Swap - OTC				66704J-AJ-7	Greywolf CLO V Ltd-GWOLF 2015-1A	1	6,000,000	5,824,278
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,917,784	12/28/2012	12/28/2042	Interest Rate Swap - OTC				38808P-AN-6	A2R Benefit Street Partners -SERIES 16-9A CLASS BR	1	8,000,000	7,917,784
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,200,000	11,080,373	12/28/2012	12/28/2042	Interest Rate Swap - OTC				08181B-AS-8	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A1B	1	11,200,000	11,080,373
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,945,352	12/28/2012	12/28/2042	Interest Rate Swap - OTC				94951D-AC-7	Avolon Aerospace Leasing Secured Note B7	1	8,000,000	7,945,352
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,594,707	7,887,045	12/28/2012	12/28/2042	Interest Rate Swap - OTC				05389L-AB-9	GT Loan Financing I Ltd -SERIES 2013-1A CLASS AR	1	8,594,707	7,887,045
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		350,000,000	(96,439,576)	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared	126,759	(136,322,136)		36248M-AJ-6	KREOCS LENDING I LLC - Senior Secured Term Facility	1	40,000,000	39,882,560
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		304,559,223	304,559,223	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				48276#-AA-0	Atlas Senior Loan Fund X-SERIES 18-11A CLASS A1L	1	304,559,223	304,559,223
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,000,000	34,920,445	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				04941Y-AC-3	RRPF Engine Leasing Ltd Senior Secured	2	35,000,000	34,920,445
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,000,000	22,584,643	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				G7332#-AG-8	SLM STUDENT LOAN TRUST 2-SERIES 06-7 CLASS B	1	23,000,000	22,584,643
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,994,175	4,628,452	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				78443G-AJ-4	Donaldson Co Inc Senior Unsecured Notes	1	4,994,175	4,628,452
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,291,948	14,277,510	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				25763#-AF-7	Green Brick Partners, In Senior Unsecured Notes	1	15,291,948	14,277,510
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,808,000	13,840,667	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				392709-AA-8	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	14,808,000	13,840,667
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,000,000	18,000,000	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				18685#-AC-6	Tetraon Financial Group (Delaware) LLC - Revolver	1	18,000,000	18,000,000
57629*GG0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		225,000,000	136,542,251	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared	81,530	(88,457,749)		88167#-AA-8	FIRST EAGLE DIRECT LENDING V-B, LLC - Secured Revolving Loan Facility	1	225,000,000	225,000,000
57629*GF2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		168,021,740	168,021,740	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				32013#-AA-2	YPC ASSET BACKED OPPORTUNISTIC CREDIT Holdings Fund, L.P - Secured Revolving Loan Facility	1	168,021,740	168,021,740
57629*GF2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		142,646,648	142,646,648	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				91831Z-MN-3	QHA Loan Funding 2013-2 -QHAF	1	142,646,648	142,646,648
57629*GF2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,000,000	24,839,025	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				67104L-AF-4	Goldentree Loan Opportun-SERIES 2015-10A CLASS BR	1	25,000,000	24,839,025
57629*GF2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,850,000	13,800,736	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				38137P-AU-4	ALM XIV Ltd-SERIES 14-14A CLASS BR2	1	13,850,000	13,800,736
57629*GF2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,800,000	3,657,751	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				74988L-AJ-3	KKR CLO 14 Ltd-KKR 14 BR	1	3,800,000	3,657,751
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		300,000,000	(101,365,697)	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared	108,620	(116,262,947)		48250W-AJ-4	TICP CLO VI 2016-5 LTD-TICP 2016-5A	1	15,000,000	14,897,250
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,940,260	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				87248K-AS-3	A2R Navient Student Loan Tru-SERIES 15-1 CLASS B	1	5,000,000	4,940,260
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,020,479	937,854	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				63939F-AC-4	THL Credit Wind River 20-WINDR	1	1,020,479	937,854
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,350,000	7,877,966	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				97315T-AG-7	Barings CLO Ltd 2020-III-BABSN	1	8,350,000	7,877,966
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		252,000,000	251,593,776	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				06762W-AA-2	2020-3A	1	252,000,000	251,593,776

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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 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*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,434,172	16,349,585	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				06760G-AA-9	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A1	1	16,434,172	16,349,585
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,072,521	16,310,498	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				13877P-AA-5	Canyon CLO 2021-4 Ltd-CANVC 2021-4A	1	16,072,521	16,310,498
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,200,000	16,020,844	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				06760J-AE-5	Barings CLO Ltd 2018-II-SERIES 2018-2A CLAS A1B	1	16,200,000	16,020,844
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,809,632	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				06760X-AC-8	BARINGS CLO LTD 2018-IV-SERIES 18-4A CLASS A2	1	16,000,000	15,809,632
57629*GE5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,822,960	09/11/2023	06/10/2051	SOFR Replacement Swap - CME cleared				13876L-AL-1	Canyon CLO 2020-1 Ltd-CANVC 2020-1A BR	1	10,000,000	9,822,960
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	8,882,182	(89,564,479)	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared	82,182	(98,311,468)		38137P-AS-9	Goldentree Loan Opportun-SERIES 2015-10A CLASS AJR	1	8,800,000	8,746,989
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,381,220	59,381,220	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				98387*-AA-5	X WH REDF2-TSE SELLER, LLC - Term Loan Facility	1	59,381,220	59,381,220
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,308,293	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				55819T-AU-5	Madison Park Funding XX -SERIES 2016-20A CLASS CR	1	7,500,000	7,308,293
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,900,000	13,677,155	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				03328Y-AE-4	Anchorage Capital CLO Lt-ANHC 2018-1RA B	1	13,900,000	13,677,155
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,459,602	6,887,872	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				64034C-AB-5	Nelnet Student Loan Trus-NSLT 2019-1A B	1	7,459,602	6,887,872
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		53,342,601	52,864,347	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				278300-AJ-7	Eaton Vance CLO 2020-1 L-EATON 2020-1A AR	1	53,342,601	52,864,347
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,350,000	5,239,078	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				36320T-AX-1	Galaxy XXI CLO Ltd-GALXY 2016-22A BRR	1	5,350,000	5,239,078
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,020,000	59,752,071	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				03768M-AJ-6	Apidos CLO XXXIII-APID 2020-33A AR	1	60,020,000	59,752,071
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,107,648	35,039,792	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				282523-AH-2	1828 CLO Ltd-GUGG4 2016-1A A1S1 .. Barings Middle Market CL-BMM 2017-1A CR	2	35,107,648	35,039,792
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,460,500	10,946,238	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				067600-AU-3	SOFR Replacement Swap - CME cleared	2	12,460,500	10,946,238
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,800,000	11,956,979	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				06762T-AG-6	Babson CLO Ltd/Cayman Islands VCP RRL ABS II Ltd-VCRRL 2022-1A B	2	12,800,000	11,956,979
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,322,405	2,207,263	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				91824X-AE-0	Bain Capital Credit CLO -BCC 2020-2A DR	2	2,322,405	2,207,263
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,400,000	2,308,387	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				05683E-AU-6	Elmwood CLO III Ltd-ELMW3 2019-3A DR	2	2,400,000	2,308,387
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,250,000	2,232,005	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				29002H-AS-8	Eaton Vance CLO 2020-1 L-EATON 2020-1A DR	2	2,250,000	2,232,005
57629*GD7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,250,000	2,127,618	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				278300-AQ-1	Bain Capital Credit CLO-BCC 2020-1A B FLOATING	1	2,250,000	2,127,618
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	325,000,000	8,406,892	(120,588,633)	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared	106,892	(128,819,262)		05684D-AG-8	Sound Point CLO II Ltd-SNDPT 2013-1A A2R	1	8,300,000	8,230,629
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,814,624	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				83608G-AQ-9	Bain Capital Credit CLO -SERIES 18-2A CLASS A2	1	8,000,000	7,814,624
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,787,570	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				05682V-AC-9	LOM XIX LTD PARTNERSHIP DEF MEZZ NT CL C	1	15,000,000	14,787,570
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,871,113	2,871,282	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				50188Q-AE-1	Twinbrook Capital Funding VII DSPV, LLC - Term Loan	1	2,871,113	2,871,282
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		88,378,508	88,378,508	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				90139*-AA-3	PCRED LENDING III LLC, PCRED LENDING III SPE I LLC and PCRED LENDING III OFFSHORE LTD.-Term Loan 2020-2	1	88,378,508	88,378,508
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		121,099,443	121,099,443	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				68324*-MN-7	Benefit Street Partners -BSP 2018-15A A2A	1	121,099,443	121,099,443
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,096,877	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				08179M-AC-3		1	1,100,000	1,096,877

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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 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*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,800,000	5,671,379	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				01749B-AC-3	Alllegro CLO VI Ltd-ALLEG 2017-2A C	1	5,800,000	5,671,379
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,118,547	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				06762J-AE-3	Babson CLO Ltd/Cayman Is-BABSN 2021-2A C	1	3,200,000	3,118,547
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,891,165	24,805,514	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				341081-FR-3	Florida Power & Light Co-SECURED Barings Middle Market CL-BMM 2018-1A B	1	32,891,165	24,805,514
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,224,828	22,843,086	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				06761M-AC-1	Canyon Capital CLO 2019-CANVC 2019-2A CR	1	22,224,828	22,843,086
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,428,030	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				13887W-AN-0	Hayfin Kingsland XI Ltd-HAYFN 2019-2A BR	1	5,600,000	5,428,030
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,330,000	5,184,885	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				42086N-AJ-7	Bain Capital Credit CLO -BCC 2020-3A A1R	1	5,330,000	5,184,885
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,786,538	4,898,718	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				05684C-AL-9	OHA Credit Funding 4 Ltd-OAKC 2019-4A CR	1	4,786,538	4,898,718
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,100,000	5,062,933	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				67098D-AW-3	Signal Peak CLO 9 Ltd-SPEAK 2021-9A C	1	5,100,000	5,062,933
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,950,648	5,870,220	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				82670Q-AG-4	Elmwood CLO VII Ltd-ELMW7 2020-4A A	1	5,950,648	5,870,220
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,637,023	4,749,915	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				29002Q-AA-7	Oak Hill Credit Partners	1	4,637,023	4,749,915
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,300,000	4,258,204	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				67707L-AJ-7	KVK CLO 2016-1 Ltd-KVK 2016-1A CR2	1	4,300,000	4,258,204
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,200,000	4,038,657	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				97314D-AG-3	Bain Capital Credit CLO -BCC 2021-5A C	1	4,200,000	4,038,657
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,300,000	4,208,354	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				05682E-AG-8	Neuberger Berman CLO XX -NEUB 2015-20A BRR	1	4,300,000	4,208,354
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,525,000	3,480,282	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				64130T-BC-8	Landmark Equity Partners XVI-D, LLC	1	3,525,000	3,480,282
57629*GC9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		40,000,000	40,000,000	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				51513B-AA-9	OCP CLO 2019-16 Ltd-SERIES 19-16A CLASS CR	1	40,000,000	40,000,000
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	325,000,000	5,906,947	(124,210,340)	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared	106,947	(129,856,309)		67570Q-AP-6	Voya CLO 2018-2 Ltd-VOYA 2018-2A B1	1	5,800,000	5,645,969
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	11,756,928	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				92917J-AE-7	PORED LENDING III LLC, PORED LENDING III SPE I LLC and PORED LENDING III OFFSHORE LTD., -Term Loan Series 2019-1	1	12,000,000	11,756,928
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		80,371,240	80,371,240	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				68324B-AA-0	Sound Point CLO XXVI Ltd-SNDPT 2020-1A AR	1	80,371,240	80,371,240
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,000,000	59,100,780	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				83614X-AQ-4	Oak Hill Credit Partners-OAKC 2021-16A A	1	60,000,000	59,100,780
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		57,736,826	58,069,152	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				67115L-AA-2	OHA Loan Funding 2013-2 -OHALF 2013-2A AR	1	57,736,826	58,069,152
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		53,706,686	53,528,219	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				67104L-AE-7	CIRUS-2018-1A A	1	53,706,686	53,528,219
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	48,448,850	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				17275G-AA-4	DCF 2019-1A A	1	50,000,000	48,448,850
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	47,206,400	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				25255A-AA-4	OHA Credit Funding 4 Ltd-OAKC 2019-4A BR	1	50,000,000	47,206,400
57629*GB1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,971,515	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				67098D-AU-7	Vibrant CLO Ltd-SERIES 18-9A CLASS A2	1	13,100,000	12,971,515
57629*AIW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	23,500,000	10,883,560	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(12,401,274)		92558V-AC-8	SLM STUDENT LOAN TRUST-SERIES 2005-4 CLASS B	1	23,500,000	23,284,834
57629*AIW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,263,723	6,021,343	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				78442G-PL-4	Alllegro CLO VI Ltd-ALLEG 2017-2A B	1	6,263,723	6,021,343
57629*AIW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,292,256	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				01749B-AB-5		1	6,400,000	6,292,256

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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 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*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,284,552	3,545,183	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				12481X-AS-9	CBAM 2018-6 Ltd-CBAM 2018-6A B1R	1	3,284,552	3,545,183
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,425,188	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				77342J-AC-7	Rockford Tower CLO 2018--SERIES 18-1A CLASS B	1	7,500,000	7,425,188
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,000	6,835,768	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				65023T-AK-8	Newark BSL CLO 1 Ltd-NBCLO 2016-1A A2R	1	6,900,000	6,835,768
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		496,718	492,787	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				06759F-AD-8	BABSON CLO LTD 2015-II-SERIES 15-2A CLASS B2R	1	496,718	492,787
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,056,983	11,347,695	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				38137W-AQ-8	Goldentree Loan Managem-GLM 2019-6A AR	1	11,056,983	11,347,695
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,000,000	26,022,866	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(13,528,662)		F7701F-AA-5	SFR FTTH SAS Term Loan	2	26,022,866	24,777,525
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,500,000	18,128,465	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				50188G-AX-1	LCM XVIII LP-LGM 18A A2R	1	18,500,000	18,128,465
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,411,695	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				33882G-AG-3	Flatiron Clo 17 Ltd-FLAT 2017-1A BR	1	7,500,000	7,411,695
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,700,000	4,672,698	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				67707C-AU-2	Oak Hill Credit Partners-OAKC 2014-10RA CR	1	4,700,000	4,672,698
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,000	1,985,656	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	2,000,000	1,985,656
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,647,811	5,615,404	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				25654F-AA-0	Dodger Tickets LLC Senior Secured	1	5,647,811	5,615,404
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,034,664	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				75009J-AB-7	Rad CLO 17 Ltd-RAD 2022-17A B1	1	8,000,000	8,034,664
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	26,000,000	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(12,665,777)		83609Y-AC-0	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS A	1	26,000,000	25,823,096
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,502,976	5,250,343	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				78442G-OA-7	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	5,502,976	5,250,343
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,931,127	40,429,080	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				29002G-AB-7	Elmwood CLO IV Ltd-ELMW4 2020-1A A	1	39,931,127	40,429,080
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,956,365	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				29001L-AN-1	Elmwood CLO II Ltd-ELMW2 2019-2A BR	1	15,000,000	14,956,365
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,900,000	5,886,170	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				40436X-AG-2	HIGHBRIDGE LOAN MANAGEM-SERIES 2014 CLASS BR	1	5,900,000	5,886,170
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	25,900,000	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(12,665,777)		04016V-AC-9	APES XLVII CLO Ltd-SERIES 18-47A CLASS A2	1	25,900,000	25,445,455
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,923,210	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				033292-AS-2	ANCHORAGE CAPITAL CLO 20-SERIES 13-1A CLASS A2R	1	10,000,000	9,923,210
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,900,000	10,774,094	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				38138D-AS-5	Goldentree Loan Managem-GLM 2019-5A CR	1	10,900,000	10,774,094
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,981,540	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				29001L-AQ-4	Elmwood CLO II Ltd-ELMW2 2019-2A CR	1	5,000,000	4,981,540
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,575,000	2,532,930	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				08179H-AC-4	Benefit Street Partners -BSP 2017-12A B	1	2,575,000	2,532,930
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	990,746	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				13876J-AE-2	Canyon Capital CLO Ltd-CANYC 2012-1RA B	1	1,000,000	990,746
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,498,430	6,121,782	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				512807-AU-2	Lam Research Corp-SENIOR UNSECURED	1	6,498,430	6,121,782
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,022,340	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				55819F-AE-1	Madison Park Funding Ltd-HDPK 2022-55A B1	1	5,000,000	5,022,340
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	2,889,344	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(12,591,079)		38137W-AQ-8	Goldentree Loan Managem-GLM 2019-6A AR	1	2,889,344	2,965,311
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,812,500	20,917,666	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				06763H-AC-0	Babson CLO Ltd/Cayman Is-BABSN 2022-4A B	1	20,812,500	20,917,666
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,254,582	12,479,125	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				87248K-AJ-3	TICP CLO V 2016-1 Ltd-TICP 2016-5A A1R	1	12,254,582	12,479,125
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,525,811	13,505,586	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				05875H-AC-7	BALLYROCK CLO 2018-1 LTD-SERIES 2018-1A CLASS A2	1	13,525,811	13,505,586
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	992,828	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR				62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	1,000,000	992,828

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STATEMENT AS OF SEPTEMBER 30, 2023 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*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,500,182	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			48661N-AE-8	KAYNE CLO-SERIES 19-6A CLASS B1	1	5,500,000	5,500,182
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,402,191	6,488,736	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			25654F-AB-8	Dodger Tickets LLC Senior Secured Marble Point CLO XI Ltd-NP11 2017-2A A	1	6,402,191	6,488,736
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	60,000,000	19,744,018	5,908,034	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR		(13,735,723)	56607F-AA-3	NORTHSTAR EDUCATION FINA-SERIES 04-2 CLASS B	1	19,744,018	19,643,757
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,584,696	3,864,000	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			66704J-BD-9	NORTHSTAR EDUCATION FINA-SERIES 05-1 CLASS B	1	4,584,696	3,864,000
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,049,143	3,381,000	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			66704J-BK-3	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	4,049,143	3,381,000
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,500,000	3,379,198	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			94950J-AC-5	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,500,000	3,379,198
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,122,176	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			22615E-AE-0	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	3,200,000	3,122,176
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,000	1,985,656	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			62848F-AC-6	Highbridge Loan Manageme-SERIES 4A-2014 CLASS A2R	1	2,000,000	1,985,656
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,751,321	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			44330G-AE-3	H.H.I. HULL NO. S856 L.L Guaranteed Notes	1	11,900,000	11,751,321
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,431,250	7,031,768	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			40425Q-AA-3	JCP Direct Lending CLO 2-JCPDL 2022-11 C	1	7,431,250	7,031,768
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,441,625	4,158,360	04/11/2023	04/09/2043	Interest Rate Swap - OTC SOFR			46655H-AF-0	Allegro CLO VII Ltd-ALLEG 2018-1A A	1	4,441,625	4,158,360
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	225,000,000	34,574,011	(54,944,205)	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared	74,011	(89,345,156)	01750C-AA-1	KKR CLO 14 Ltd-KKR 14 AR	1	34,500,000	34,400,951
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	997,186	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			48250W-AG-0	Carlyle Global Market St-CGMS 2014-2RA A2	1	1,000,000	997,186
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,943,375	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			14314L-AE-5	Netnet Student Loan Trus-NSLT 2020-5A B	1	5,000,000	4,943,375
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,500,000	2,455,915	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			64032V-AB-5	YPC SPECIALTY LENDING INVESTMENTS INTERMEDIATE, L.P. - Secured Revolving Loan Facility	1	2,500,000	2,455,915
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		64,995,090	64,995,090	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			918598-AA-7	PIONEERS GATE LLC 2021-1 CFCC	1	64,995,090	64,995,090
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		85,824,996	85,671,534	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			72403*-BN-1	Benefit Street Partners -SERIES 18-14A CLASS A2	1	85,824,996	85,671,534
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,400,000	13,164,870	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			08179L-AC-5	CHA Credit Funding 1 LTD-SERIES 18-1A CLASS B	1	13,400,000	13,164,870
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,974,792	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			67115W-AG-5	Diameter Capital CLO 1 L-DQLO 2021-1A A2	1	8,000,000	7,974,792
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,100,000	7,047,091	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			25255D-AE-0	Mesa Air Group, Inc. Class A Notes	1	7,100,000	7,047,091
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,684,148	20,765,339	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			590488-AA-6	Landmark Equity Partners XVI-D, LLC	2	22,684,148	20,765,339
57629*GA3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		56,000,000	56,000,000	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			515138-AA-9	MADISON PARK FUNDING XXI-MDPK 2018-29A A2	1	56,000,000	56,000,000
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	14,082,215	(84,983,491)	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared	82,215	(98,915,549)	55820C-AE-5	DRYDEN 64 CLO LTD-DRSLF 2018-64A A	1	14,000,000	13,932,058
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,628,485	22,521,113	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			26251L-AC-8	Regatta X Funding Ltd-SERIES 2017-3A CLASS B	1	22,628,485	22,521,113
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,934,979	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			75884B-AC-2	Atlas Senior Loan Fund X-ATCLO 2018-10A B	1	13,100,000	12,934,979
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,700,000	4,643,440	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			04942J-AE-1	Wellfleet CLO Ltd-WELF 2021-1A C	1	4,700,000	4,643,440
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,616,008	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			94950C-AG-1	Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2020-1	2	7,000,000	6,616,008
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		173,379,472	173,379,472	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared			46142F-AA-6		2	173,379,472	173,379,472

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,600,000	29,931,836	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				06760W-AE-6	Barings Middle Market CL-BMM 2021-1A A2	1	31,600,000	29,931,836
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		29,059,678	27,340,326	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				62983P-AA-3	Nakilat Inc-SECURED BOND Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	29,059,678	27,340,326
57629*FZ9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	11,000,000	09/11/2023	06/11/2051	SOFR Replacement Swap - CME cleared				186858-AC-6	Madison Park Funding XIV-MDPK 2014-14A BR	1	11,000,000	11,000,000
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	15,013,617	5,356,702	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared	13,617	(9,480,983)		55818R-BA-3	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS BR	1	15,000,000	14,837,685
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,920,000	4,919,793	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				48249V-AS-0	Carlyle US CLO 2021-10 L-CGMS 2021-10A A	1	4,920,000	4,919,793
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,121,029	16,745,800	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				14316Y-AA-3	Bain Capital Credit CLO -BCC 2019-2A BR	1	16,121,029	16,745,800
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,496,952	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				05682L-AL-1	KKR Clo 24 Ltd-KKR 24 BR	1	13,700,000	13,496,952
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,050,000	7,957,361	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				48252R-AQ-7	KKR Clo 14 Ltd-KKR 14 AR	1	8,050,000	7,957,361
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,980,302	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				48250W-AG-0	GAIF Bond Issuer Pty Ltd Gtd Senior Note	1	7,000,000	6,980,302
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,800,000	19,733,076	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				039588-AC-0	Bain Capital Credit CLO -BCC 2020-4A B	1	19,800,000	19,733,076
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,365,728	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				05684K-AN-7	Bluemountain CLO XXX Ltd-BLUEM 2020-30A BR	1	6,400,000	6,365,728
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	2,935,482	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				09630Q-AN-1	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS C	2	3,000,000	2,935,482
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,650,000	1,526,027	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				06760G-AD-3	Elmwood CLO VII Ltd-ELMW7 2020-4A A	1	1,650,000	1,526,027
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,881,077	4,999,910	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				29002Q-AA-7	Fort Benning Family Comm-UNSECURED	1	4,881,077	4,999,910
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	17,885,364	11,333,985	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared	13,613	(9,464,389)		346845-AC-4	Magna Imperio Systems Co-SECURED . Sixth Street CLO-SIXST 2021-20A A1	1	17,871,751	20,798,374
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,657,309	21,165,400	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				55921Q-AA-0	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	21,657,309	21,165,400
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,300,000	18,180,611	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				83012Q-AA-2	Bluemountain CLO XXX Ltd-BLUEM 2020-30A BR	1	18,300,000	18,180,611
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,400,000	9,281,616	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				88434H-AE-3	ARES XXX IIR CLO LTD-SERIES 14-32PA CLASS A1B	1	9,400,000	9,281,616
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,700,000	3,620,428	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				09630Q-AN-1	ACCESS GROUP INC-SERIES 2015-1 CLASS B	1	3,700,000	3,620,428
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,625,000	13,441,471	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				04017E-AE-2	CIFC Funding 2021-I Ltd-CIFC 2021-1A B	1	13,625,000	13,441,471
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,386,411	1,352,946	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				00435T-AB-7	KAYNE CLO I Ltd-KAYNE 2018-1A CR	1	1,386,411	1,352,946
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,537,302	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				12563E-AC-7	US Bancorp-SENIOR UNSECURED Barings Loan Partners CL-BABSN 2022-3A B	1	5,600,000	5,537,302
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,441,414	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				48661A-AN-6	Rockford Tower CLO 2018--SERIES 18-1A CLASS A	1	5,500,000	5,441,414
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,184,444	2,927,213	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				91159H-HR-4	Neuberger Berman CLO Ltd-NEUB 2018-28A B	1	3,184,444	2,927,213
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,000	6,924,240	09/05/2023	03/05/2034	SOFR Replacement Swap - CME cleared				06762V-AC-0		1	6,900,000	6,924,240
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	54,322,111	39,703,353	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared	41,540	(14,503,654)		77342J-AA-1		1	54,280,571	54,207,007
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,950,174	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				64130P-AE-3		1	7,000,000	6,950,174

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STATEMENT AS OF SEPTEMBER 30, 2023 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*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,598,555	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				13877E-AE-2	Canyon Capital CLO Ltd-CANYC 2021-1A B	1	15,000,000	14,598,555
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,934,680	7,065,068	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				64132J-AN-5	Neuberger Berman Loan Ad-NEUB 2019-31A AR	1	6,934,680	7,065,068
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,742,896	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				04017Q-AE-5	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	16,000,000	15,742,896
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,609,870	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				087598-AC-2	BETHPAGE PARK CLO LTD-BETHP 2021-1A B	1	6,750,000	6,609,870
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,800,000	2,799,885	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				48661Y-AA-2	Kayne CLO 4 Ltd-SERIES 19-4A CLASS B1	1	2,800,000	2,799,885
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,100,105	10,716,089	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				559222-AR-5	Magna International Inc-SR UNSECURED	1	11,100,105	10,716,089
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,922,166	5,432,557	08/21/2023	05/19/2034	SOFR Replacement Swap - CME cleared				46655H-AH-6	JCP Direct Lending CLO 2-JCPDL 2022-11 D	1	5,922,166	5,432,557
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	85,000,000	23,506,448	14,336,763	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared	19,448	(9,061,104)		12551R-AA-6	CIFC Funding 2018-I Ltd-CIFC 2018-1A A	1	23,487,000	23,397,867
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,605,049	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				50184N-AN-2	LOM LTD PARTNERSHIP-SERIES 15A CLASS BR	1	5,650,000	5,605,049
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,597,701	5,621,719	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				04009G-AE-7	ARES L CLO Ltd-SERIES 19-53A CLASS B	1	5,597,701	5,621,719
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,315,117	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				97314D-AE-8	KVK CLO 2016-1 Ltd-KVK 2016-1A BR2	1	6,400,000	6,315,117
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,931,900	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				77342K-AA-8	ROCKFORD TOWER CLO 2018-ROCKT 2018-2A A	1	20,000,000	19,931,900
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,900,000	3,751,979	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				05683L-AG-1	Bain Capital Credit CLO -SERIES 1A CLASS C	1	3,900,000	3,751,979
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,092,853	15,322,719	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				F7701#-AA-5	SFR FTTH SAS Term Loan	2	16,092,853	15,322,719
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,022,340	08/09/2023	05/09/2034	SOFR Replacement Swap - CME cleared				55819F-AE-1	Madison Park Funding Ltd-MDPK 2022-55A B1	1	5,000,000	5,022,340
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	10,017,743	2,643,614	07/06/2023	10/06/2034	SOFR Replacement Swap - CME cleared	17,743	(7,300,426)		55819B-AN-0	Madison Park Funding XVI-MDPK 2015-18A BR	1	10,000,000	9,944,040
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,100,000	19,738,059	07/06/2023	10/06/2034	SOFR Replacement Swap - CME cleared				06760G-AB-7	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A2	1	20,100,000	19,738,059
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,685,312	22,754,761	07/06/2023	10/06/2034	SOFR Replacement Swap - CME cleared				77341D-AA-5	Rockford Tower CLO 2017-ROCKT 2017-3A A	1	22,685,312	22,754,761
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,100,000	3,097,353	07/06/2023	10/06/2034	SOFR Replacement Swap - CME cleared				04943A-AG-4	ATLAS SENIOR LOAN FUND L-SERIES 17-8A CLASS C	1	3,100,000	3,097,353
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,534,126	6,988,626	07/06/2023	10/06/2034	SOFR Replacement Swap - CME cleared				172967-LW-9	Citigroup Inc-SENIOR UNSECURED	1	7,534,126	6,988,626
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	12,272,681	(28,891,303)	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared	37,223	(40,471,852)		68489#-AA-1	ORANGE GROVE ENERGY, L.P DELAYED DRAW TE	2	12,235,458	11,580,549
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,048,846	3,855,086	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				F7701#-AA-5	SFR FTTH SAS Term Loan	2	4,048,846	3,855,086
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,206,754	2,129,154	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				429827-AS-7	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	2,206,754	2,129,154
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,200,000	10,163,402	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				00889B-AB-7	Aimco CDO-AIMCO 2021-15A B	1	10,200,000	10,163,402
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,717,639	19,791,525	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				55818Y-BN-0	Madison Park Funding XVI-MDPK 2015-17A AR2	1	19,717,639	19,791,525
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,500,000	20,271,712	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				449272-AA-1	ICG US CLO Ltd-ICG 2021-4A A1	1	20,500,000	20,271,712
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,340,573	19,831,260	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				75009R-AA-1	Rad CLO 14 Ltd-RAD 2021-14A A	1	19,340,573	19,831,260
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,818,120	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				67707C-AS-7	Oak Hill Credit Partners-OAKC 2014-10RA BR	1	20,000,000	19,818,120

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,700,000	8,510,732	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				33836J-AE-9	ASSURANT CLO I LTD-MORGN 2017-1A BR	1	8,700,000	8,510,732
57629*FY2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	12,000,000	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				18685E-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	12,000,000	12,000,000
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	17,623,207	(82,352,552)	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared	92,966	(99,839,621)		29002H-AN-9	Elmwood CLO III Ltd-ELMW3 2019-3A BR	1	17,530,241	17,487,069
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		49,896,190	49,800,450	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				05682V-AA-3	BAIN CAPITAL CREDIT CLO -SERIES 18-2A CLASS A1	1	49,896,190	49,800,450
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,400,000	12,221,762	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				124166-AE-9	Buttermilk Park CLO Ltd-BMILK 2018-1A B1	1	12,400,000	12,221,762
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,600,000	7,565,709	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				75888K-AC-8	REGATTA VIII FUNDING LTD-SERIES 2017-1A CLASS B	1	7,600,000	7,565,709
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,574,132	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				78108Y-AQ-5	RR 1 LLC-RRAM 2017-1A A2B	1	5,650,000	5,574,132
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,500,000	10,326,372	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				14315L-AC-8	Carlyle Global Market St-SERIES 14-3RA CLASS A1B	1	10,500,000	10,326,372
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,500,000	10,364,666	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				12564D-AC-8	CIFC Funding Ltd-CIFC 2021-3A B	1	10,500,000	10,364,666
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,880,000	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				69701X-AC-8	Palmer Square CLO Ltd-SERIES 2021-2A CLASS B	1	10,000,000	9,880,000
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,012,800	28,961,799	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				06760Q-AQ-2	Barings Middle Market CL-BMM 2017-1A A2R	1	31,012,800	28,961,799
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,132,680	23,779,008	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				01750W-AC-3	Alllegro CLO XIII Ltd-ALLEG 2021-1A A	1	23,132,680	23,779,008
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,998,000	21,709,551	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				06760Q-AS-8	Barings Middle Market CL-BMM 2017-1A BR	1	23,998,000	21,709,551
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,790,886	19,226,628	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				30259A-AA-0	FDI I Ltd-SERIES 17-3A CLASS A1	1	19,790,886	19,226,628
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,200,000	8,118,098	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				08186P-AN-3	Benefit Street Partners -BSP 2019-18A BR	1	8,200,000	8,118,098
57629*GHB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,904,280	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				94950J-AA-9	Wellfleet CLO Ltd-SERIES 18-1A CLASS A	1	20,000,000	19,904,280
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	170,192,965	70,280,682	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared	92,965	(99,819,318)		46142H-AC-2	Invesco CMI Investments MM, LLC - TERM LN SER 2021-3	2	170,100,000	170,100,000
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,490,000	10,356,389	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				40437L-AG-7	HPS Loan Management 13-2-HLM 13A-18 B	1	10,490,000	10,356,389
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,932,950	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				40436Q-AL-6	HPS Loan Management 9-20-HLM 9A-2016 A1BR	1	10,000,000	9,932,950
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,390,515	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				64132D-AL-2	Neuberger Berman Loan Advisers CLO 32 Ltd	1	7,500,000	7,390,515
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,800,000	4,673,923	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				64131J-AQ-9	Neuberger Berman Loan Advisers CLO 25 Ltd	1	4,800,000	4,673,923
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,511,475	17,421,431	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				55955A-AA-4	Magnetite XX Ltd	1	17,511,475	17,421,431
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,970,880	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				85816L-AA-6	Steele Creek Clo 2018-2 Ltd	1	16,000,000	15,970,880
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,604,659	8,551,310	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				87289B-AA-2	TCP DLF VIII 2018 CLO, LLC	1	8,604,659	8,551,310
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		29,925,000	29,029,135	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				Q3958E-AJ-5	GAIF Bond Issuer Pty Ltd.	1	29,925,000	29,029,135
57629*GS4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	55,000,000	09/18/2023	06/16/2051	SOFR Replacement Swap - CME cleared				51513E-AA-9	Landmark Equity Partners XVII-D, LLC	1	55,000,000	55,000,000
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	16,689,456	(82,188,797)	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared	89,456	(98,593,349)		92915P-AK-1	Voya CLO 2014-1 Ltd-INGIM 2014-1A ABR2	1	16,600,000	16,404,552

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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 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*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,911,831	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				64032V-AB-5	Nelnet Student Loan Trus-NSLT 2020-5A B	1	5,000,000	4,911,831
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	12,573,665	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				67332F-AH-6	RRPF Engine Leasing Ltd Senior Secured	2	13,000,000	12,573,665
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,865,640	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				04941Y-AJ-8	Atlas Senior Loan Fund X-ATCLO 2018-11A B	1	10,000,000	9,865,640
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,815,000	26,661,967	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				55954Y-AJ-4	Magnetite XXVI Ltd-MAGNE 2020-26A A1R	1	26,815,000	26,661,967
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,738,315	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				40256G-AC-5	Gulf Stream Meridian-GSM 2021-6A A2	1	11,900,000	11,738,315
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		68,313,143	68,313,143	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				48275B-AE-5	KREF Lending VII 2018-4 Term Loan Middle Market Credit Fund II SPV, LLC-Class A-1 Senior Secured Notes (Carlyle BDC Direct Lending)	1	68,313,143	68,313,143
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,280,186	59,280,186	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				59576F-AA-4	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A2	1	59,280,186	59,280,186
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,244,385	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				94951D-AJ-2	Parliament Funding I LLC-Variable Funding Notes	1	7,500,000	7,244,385
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		37,088,021	37,088,021	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				70163F-AA-0	Anchorage Capital CLO Lt-ANCHC 2018-10A A1A	1	37,088,021	37,088,021
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,929,600	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				03331J-AA-0	Shepherds Flat Funding T Trust A-1-G Cer	1	20,000,000	19,929,600
57629*GR6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,247,050	38,763,590	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				82340*-AB-3	Bain Capital Credit CLO -BCC 2017-2A AR2	1	41,247,050	38,763,590
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	25,047,386	471,171	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared	47,386	(24,384,129)		48253H-AN-5	CATSKILL PARK CLO LTD.-SERIES 17-1A CLASS A2	1	25,000,000	24,855,300
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,115,762	54,810,484	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				05683H-AN-5	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	55,115,762	54,810,484
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,980,000	11,925,072	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				149420-AE-1	Denali Capital Clo XII L-DEN12 2016-1A A1R	1	11,980,000	11,925,072
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,937,030	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				88434H-AE-3	Highbridge Loan Managem-SERIES 12A-18 CLASS A1B	1	5,000,000	4,937,030
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,534,167	21,438,512	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				24824T-AQ-3	Bank of NT Butterfield &-SUBORDINATED	2	21,534,167	21,438,512
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,250,000	10,131,223	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				44330Q-AB-7	Gridiron Fdg LLC Sr Secd Nt	2	10,250,000	10,131,223
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	7,845,168	08/04/2023	11/04/2044	SOFR Replacement Swap - CME cleared				06422T-AC-5	Carlyle Global Market St-SERIES C17A CLASS A1BR	1	9,200,000	7,845,168
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	36,089,458	(63,945,656)	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared	89,458	(98,613,656)		39808C-AA-3	THL Credit Wind River 20-WINDR 2018-2A B	1	36,000,000	34,668,000
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,900,000	25,492,282	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				14307P-AE-5	0CP CLO 2017-14 Ltd-SERIES 17-14A CLASS A2	1	25,900,000	25,492,282
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,440,326	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				88434H-AG-8	Navient Student Loan Tru-NSLT 2019-7A B	1	11,600,000	11,440,326
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,400,000	11,240,696	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				67097Q-AE-5	Ballyrock CLO 2019-2 Ltd-SERIES 19-2A CLASS A2R	1	11,400,000	11,240,696
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,500,000	10,410,719	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				64034W-AD-7	KREF Lending VII 2018-5 Term Loan	1	10,500,000	10,410,719
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,810,115	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				05875M-AQ-5	VOYA 2018-1A A1	1	15,000,000	14,810,115
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		846,852	846,852	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				48275B-AD-7	Nelnet Student Loan Trus-NSLT 2018-5A B	1	846,852	846,852
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,374,030	22,274,555	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				92917A-AA-4		1	22,374,030	22,274,555
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,662,315	11,162,553	09/18/2023	06/17/2051	SOFR Replacement Swap - CME cleared				64034B-AB-7		1	11,662,315	11,162,553

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STATEMENT AS OF SEPTEMBER 30, 2023 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*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,000,000	44,840,115	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				94949J-AA-3	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	1	45,000,000	44,840,115
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,125,000	5,954,805	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				94950C-AE-6	Wellfleet CLO Ltd-WELF 2021-1A B	1	6,125,000	5,954,805
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,790,000	8,693,714	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				55951P-BC-0	Magnetite VII Ltd-MAGNE 2012-7A A2R2	1	8,790,000	8,693,714
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,100,000	10,897,814	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				12481Q-AE-5	Obam 2018-5 Ltd-SERIES 18-5A CLASS B1	1	11,100,000	10,897,814
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,700,000	2,656,746	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				14316W-AE-9	Carlyle Global Market St-CGMS 2021-7A B	1	2,700,000	2,656,746
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,320,767	30,173,547	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				Q35348-AB-5	Australian Gas Networks Senior Note Ser	1	31,320,767	30,173,547
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,084,787	14,037,154	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				61744Y-AP-3	Morgan Stanley-SENIOR UNSECURED Landmark Equity Partners XVII-D, LLC	1	15,084,787	14,037,154
57629*G08	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		70,000,000	70,000,000	09/18/2023	06/17/2051	SOFR Replacement Swap - OME cleared				515138-AA-9	MM Investment Holding Revolver	1	70,000,000	70,000,000
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	178,081,582	56,468,926	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared	81,587	(99,364,444)		G5695#-AA-6	Floating Line	2	177,999,995	155,833,370
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		3,600,000	3,470,623	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				61773K-AE-2	Morgan Stanley Eaton Van-MSEV 2021-1A C	1	3,600,000	3,470,623
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,000,000	5,000,000	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	5,000,000	5,000,000
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		25,000,000	25,127,075	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				236057-AA-3	Danby Park CLO Ltd-DANBY 2022-1A A1A	1	25,000,000	25,127,075
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,874,209	15,325,370	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				67112R-AS-3	OHA Credit Funding 3 LTD-OAKC 2019-3A AR	1	14,874,209	15,325,370
57629*GPO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		25,000,000	25,172,225	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				69700X-AA-3	Palmer Square CLO 2022-4-PLMRS 2022-4A A1A	1	25,000,000	25,172,225
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	350,000,000	271,375,296	132,037,121	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared	114,233	(139,223,942)		G66848-AA-9	OHA Credit Solutions Master Fund I SPV, L.P. - Fund I Revolver	1	271,261,063	271,261,063
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,827,425	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	5,000,000	4,827,425
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,150,000	9,893,865	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				48662N-AC-1	KAYNE CLO-KAYNE 2021-11A B	1	10,150,000	9,893,865
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,400,000	10,343,247	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				67115W-AE-0	OHA Credit Funding 1 LTD-SERIES 18-1A CLASS A2	1	10,400,000	10,343,247
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,000,000	21,963,546	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				26245R-AA-8	Dryden 58 Clo Ltd-DRSLF 2018-58A A1	1	22,000,000	21,963,546
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		72,000,000	71,984,952	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				48661W-AA-6	KAYNE CLO-SERIES 19-3A CLASS A	1	72,000,000	71,984,952
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,767,880	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				55817A-AU-8	Madison Park Funding XX-MDPK 2018-32A CR	1	10,000,000	9,767,880
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,750,000	2,668,339	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				04015U-AK-4	Ares XXXVIII CLO Ltd-SERIES 2015-38A CLASS CR	1	2,750,000	2,668,339
57629*GN5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		48,000,000	48,000,000	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				515138-AA-9	Landmark Equity Partners XVII-D, LLC	1	48,000,000	48,000,000
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	400,000,000	190,336,604	31,157,965	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared	130,545	(159,048,094)		46142#-AB-4	Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2020-2	2	190,206,059	190,206,059
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,554,274	45,554,274	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				90139#-AA-9	Twinbrook Capital Funding VIII DSPV, LLC - Term Loan	1	45,554,274	45,554,274
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,813,235	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				77341E-AC-9	Rockford Tower CLO 2020-ROCKT 2020-1A B	1	15,000,000	14,813,235
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,500,000	13,476,659	09/18/2023	06/18/2051	SOFR Replacement Swap - OME cleared				06760B-AE-2	BABSON CLO LTD-SERIES 17-1A CLASS B1	1	13,500,000	13,476,659

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STATEMENT AS OF SEPTEMBER 30, 2023 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*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,600,000	9,331,296	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				63941R-AC-4	NAVSL 2019-2A B	1	9,600,000	9,331,296
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,700,000	12,611,786	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				40436X-AE-7	HIGHBRIDGE LOAN MANAGEME-SERIES 2014 CLAS A2R	1	12,700,000	12,611,786
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,900,000	13,654,095	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				09628J-AN-1	BlueMountain CLO 2015-3 -BLUEM 2015-3A A2R	1	13,900,000	13,654,095
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,400,000	7,285,677	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				55821T-AC-1	Madison Park Funding Ltd-SERIES 18-30A CLASS B	1	7,400,000	7,285,677
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,750,000	12,610,847	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				67706X-AG-8	OH Credit Partners XIV -OAKC 2017-14A B FLOATING COUP	1	12,750,000	12,610,847
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,400,000	27,988,882	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				04017T-AC-3	Ares XXXIR CLO Ltd-SERIES 14-31RA CLASS A2	1	28,400,000	27,988,882
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		65,000,000	65,000,000	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				51513B-AA-9	Landmark Equity Partners XVI-D, LLC	1	65,000,000	65,000,000
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,812,940	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				86271P-AE-5	Strata CLO II Ltd-STRTA 2021-1A B Babson CLO Ltd/Cayman Is-BABSN LP-2A B	1	10,000,000	9,812,940
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,400,000	17,089,253	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				06763B-AC-3	Babson CLO Ltd/Cayman Islands	1	17,400,000	17,089,253
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,400,000	17,031,503	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				06762T-AC-5	Babson CLO Ltd/Cayman Islands VCP PRL ABS II Ltd-VCPRL 2022-1A A	1	17,400,000	17,031,503
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,992,858	14,432,699	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				91824X-AC-4	VCP PRL ABS II Ltd-VCPRL 2022-1A A	1	14,992,858	14,432,699
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,493,336	13,751,461	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				48661C-AA-0	Rad CLO 7 Ltd-RAD 2020-7A A1	1	13,493,336	13,751,461
57629*GM7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,300,000	4,216,387	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				40637L-AC-4	Halsey Point CLO Ltd-SERIES 2021-4A CLASS B	1	4,300,000	4,216,387
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		200,000,000	9,535,266	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared	65,266	(79,459,064)		74989H-AE-2	RR 12 Ltd-RRAM 2020-12A A2R2	1	9,470,000	9,418,824
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,350,000	9,229,133	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				87166R-DG-9	SYMP 2019-21A BR	1	9,350,000	9,229,133
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,096,261	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				65357L-AL-9	Niagara Park CLO Ltd-NIAPK 2019-1A BR	1	9,200,000	9,096,261
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,100,000	8,903,021	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				12551J-AQ-9	CIFC Funding 2017-IV Ltd-CIFC 2017-4A BR	1	9,100,000	8,903,021
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,100,000	8,971,963	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				42087D-AC-3	Hayfin US XII Ltd-HAYFN 2020-12A B1	1	9,100,000	8,971,963
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,000,000	8,946,324	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				38138L-AN-8	Goldentree Loan Management-SERIES 2020-7A CLASS BR	1	9,000,000	8,946,324
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		74,276,438	76,764,975	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				31650Z-AA-1	Fidus Re Ltd-UNSECURED	1	74,276,438	76,764,975
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,997,374	15,335,222	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				66704J-AY-4	NORTHSTAR EDUCATION FINA-SERIES 2004-1 CLASS B1	1	16,997,374	15,335,222
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,815,804	26,756,594	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				75887X-AA-5	Regatta Funding Ltd.-REG11 2018-1A	1	26,815,804	26,756,594
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,282,196	11,221,746	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				449258-AA-0	IOG US CLO 2018-1 LTD-SERIES 2018-1A CLASS A1	1	11,282,196	11,221,746
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,113,156	3,103,891	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				63942N-AC-2	Navient Student Loan Tru-NAVSL 2021-1A B	1	3,113,156	3,103,891
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,200,000	11,038,406	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				17181T-AC-5	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A2	1	11,200,000	11,038,406
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,200,000	16,041,143	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				16409T-AC-3	CHENANGO PARK CLO LTD-SERIES 18-1A CLASS A1B	1	16,200,000	16,041,143
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,897,122	1,823,783	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				05890M-AA-1	BANCO DE CREDITO E INVER-SENIOR UNSECURED	1	1,897,122	1,823,783
57629*GL9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,830,000	13,000,200	09/18/2023	06/18/2051	SOFR Replacement Swap - CME cleared				53636C-AA-2	LiquiGlide Inc-SECURED	1	13,830,000	13,000,200

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STATEMENT AS OF SEPTEMBER 30, 2023 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*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	13,638,310	(24,769,943)	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared	38,310	(38,288,642)	67690A-AG-6	OHA Credit Funding 9 Ltd-OAKC 2021-9A B	1	13,600,000	13,518,699
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	12,750,000	12,633,848	12,633,848	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			40436Q-AN-2	HPS Loan Management 9-20-HLM 9A-2016 A2R	1	12,750,000	12,633,848
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	25,000,000	24,981,275	24,981,275	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			87249Q-AA-8	TICP CLO Ltd-TICP 2018-11A A	1	25,000,000	24,981,275
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	15,200,000	15,181,122	15,181,122	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			87248K-AL-8	TICP CLO VI 2016-5 Ltd-TICP 2016-5A BR	1	15,200,000	15,181,122
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	30,000,000	29,782,920	29,782,920	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			00119V-AN-9	AGL CLO 6 LTD-AGL 2020-6A AR	1	30,000,000	29,782,920
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	11,400,000	11,252,792	11,252,792	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			38138D-AQ-9	Goldentree Loan Managem-GLM 2019-5A BR	1	11,400,000	11,252,792
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	18,000,000	18,000,000	18,000,000	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	18,000,000	18,000,000
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	16,110,596	15,229,141	15,229,141	08/07/2023	02/05/2045	SOFR Replacement Swap - CME cleared			74340X-BL-4	Prologis LP-SENIOR UNSECURED	1	16,110,596	15,229,141
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	300,000,000	794,793	(122,533,535)	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared	95,351	(123,232,862)	78449F-AC-5	SMB PRIVATE ED LN TR 201-SMB PRIVATE ED LN TR 2016-A NT	1	699,442	699,327
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	174,155,309	174,155,309	174,155,309	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			143088-AA-6	Carlyle Aviation Runway PDP Fund LP - Revolving Promissary Note	1	174,155,309	174,155,309
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	61,000,000	60,987,251	60,987,251	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			48661W-AA-6	KAYNE CLO-SERIES 19-3A CLASS A	1	61,000,000	60,987,251
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	10,000,000	9,907,010	9,907,010	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			67109Y-AN-4	Oak Hill Credit Partners-SERIES 15-12A CLASS A2R	1	10,000,000	9,907,010
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	4,200,000	4,107,655	4,107,655	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			08180X-AU-6	Benefit Street Partners -BSP 2015-8A BR	1	4,200,000	4,107,655
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	10,000,000	9,956,790	9,956,790	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	9,956,790
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	9,248,552	6,443,498	6,443,498	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			G5383*-AA-7	Last Mile Infrastructure Senior Secured Notes (Delayed Tranche)	2	9,248,552	6,443,498
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	8,196,484	8,445,099	8,445,099	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			67112R-AS-3	OHA Credit Funding 3 LTD-OAKC 2019-3A AR	1	8,196,484	8,445,099
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	6,951,766	6,856,607	6,856,607	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			X7760Y-AB-6	Sisu Industrial Energy Solutions Oy	2	6,951,766	6,856,607
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	5,998,551	5,650,876	5,650,876	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			512807-AU-2	Lam Research Corp-SENIOR UNSECURED	1	5,998,551	5,650,876
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,586,132	1,471,290	1,471,290	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			172967-LW-9	Citigroup Inc-SENIOR UNSECURED	1	1,586,132	1,471,290
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,161,505	1,183,724	1,183,724	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			48661C-AA-0	Rad CLO 7 Ltd-RAD 2020-7A A1	1	1,161,505	1,183,724
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,130,650	949,558	949,558	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared				DP World Ltd-SENIOR UNSECURED	2	1,130,650	949,558
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,140,464	759,034	759,034	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			G6954#-AD-4	Peabody Trust Senior Secured Notes	1	1,140,464	759,034
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,217,500	619,878	619,878	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			G91608-AB-4	UK Power Networks Servinc Senior Unsecured Notes	2	1,217,500	619,878
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	1,037,395	873,924	873,924	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			636012-A8-5	National Express Group P Senior Note Series A	2	1,037,395	873,924
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	914,673	920,091	920,091	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			14316W-AA-7	Carlyle Global Market St-CGMS 2021-7A A1	1	914,673	920,091
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	955,609	547,313	547,313	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			G2564*-AA-5	Cross London Trains Limi Senior Secured Notes	2	955,609	547,313
57629*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	794,992	807,495	807,495	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared			06761K-AL-5	Barings CLO Ltd 2019-III-BABSN 2019-3A A1R	1	794,992	807,495

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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 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*GK1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		920,690	403,331	09/21/2023	06/21/2051	SOFR Replacement Swap - CME cleared				G0892#-AB-6	Bazalgette Tunnel Limite Senior Secured Notes	2	920,690	403,331
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	66,425	(83,994,939)	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared	66,425	(83,994,939)		008065-B*-4	AEROVIAS DE MEXICO SA USD TERM LN TICP CLO XIII Ltd-TICP 2019-13A BR	2		
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,931,184	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				87250A-AL-5	BluelMountain Fuji US Clo-SERIES	1	8,000,000	7,931,184
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,836,000	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				09628F-AE-9	2017-3A CLASS B	1	8,000,000	7,836,000
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		54,738,261	54,442,072	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				858102-AX-4	Steele Creek CLO 2016-1 -SERIES 2016-1A CLASS AR	1	54,738,261	54,442,072
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				85816W-AC-8	Steele Creek CLO 2014-1 -SERIES 14-1RA CLASS A	1		
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,956,790	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				04965L-AE-8	TRIUMPH XIV LLC-ATRM 14A A2A	1	10,000,000	9,956,790
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,839,640	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				87232A-AN-4	TCI-Flatiron Clo 2018-1 -TFLAT 2018-1A BR	1	10,000,000	9,839,640
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,696,300	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				77342M-AQ-9	Rockford Tower CLO 2019-SERIES 2019-1A CLASS B1R	1	10,000,000	9,696,300
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,591,640	1,711,475	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				429827-AK-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A10	1	1,591,640	1,711,475
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,257,566	1,275,809	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				429827-AP-3	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A14	1	1,257,566	1,275,809
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,195,000	1,193,129	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				429827-AB-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A2	1	1,195,000	1,193,129
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		630,017	627,683	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				83715A-AJ-8	SOUTH CAROLINA STUDENT L-SR UNSECURED	1	630,017	627,683
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,778,968	1,716,385	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				64033Q-AC-3	NELNET STUDENT LOAN TRUS-SERIES 2015-2A CLASS B	1	1,778,968	1,716,385
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		369,822	366,174	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				709163-GJ-2	PENNSYLVANIA ST HGR EDU -SERIES 2006 CL B	1	369,822	366,174
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		552,938	536,910	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				17284L-AB-0	CIT EDUCATION LOAN TRUST-SERIES 2007-1 CLASS B	1	552,938	536,910
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,275,000	8,060,098	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				056162-AS-9	Babson CLO Ltd 2015-I-BABSN 2015-IA CR	1	8,275,000	8,060,098
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,254,764	11,630,406	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				230000-AB-7	GULLEN/FROST CAP TR II-SUBORDINATED NOTE	2	12,254,764	11,630,406
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	12,900,238	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				75887X-AC-1	Regatta Funding Ltd.-REG11 2018-1A B	1	13,000,000	12,900,238
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,953,820	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				41154X-AL-9	Harbor Park CLO, Ltd-HARB 2018-1A C	1	4,000,000	3,953,820
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,106	7,118,384	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				73052V-AC-9	Point Au Roche Park CLO -PAPPK 2021-1A B1	1	6,900,106	7,118,384
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,746,992	6,924,883	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				27829P-AL-0	Eaton Vance CLO 2020-2 L-EATON 2020-2A AR	1	6,746,992	6,924,883
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,867,182	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				13887W-AL-4	Canyon Capital CLO 2019-CANVC 2019-2A BR	1	7,000,000	6,867,182
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,000,000	5,789,226	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				92919D-AE-8	Voya CLO Ltd-VOYA 2021-3A C	1	6,000,000	5,789,226
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,403,645	5,475,976	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				64132D-AJ-7	Neuberger Berman Loan Ad-NEUB 2019-32A AR	1	5,403,645	5,475,976
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,800,000	5,670,300	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				06762T-AE-1	Babson CLO Ltd/Cayman Islands	1	5,800,000	5,670,300
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,429,665	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				40437W-AS-7	HPS Loan Management 14-2-HLM 14A-19 BR	1	5,600,000	5,429,665
57629*GIW5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,277,390	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				83616A-AL-3	Sound Point CLO Ltd-SNDPT 2021-4A C	1	5,600,000	5,277,390

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STATEMENT AS OF SEPTEMBER 30, 2023 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*GI5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,460,000	3,429,203	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				55822A-AQ-0	Madison Park Funding XLV-MDPK 2020-46A CR	1	3,460,000	3,429,203
57629*GI5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,450,000	3,395,249	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				38138T-AG-6	Goldentree Loan Managem-GLM 2021-10A C	1	3,450,000	3,395,249
57629*GI5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		37,000,000	37,000,000	09/22/2023	06/22/2051	SOFR Replacement Swap - CME cleared				515138-AA-9	Landmark Equity Partners XVII-D, LLC	1	37,000,000	37,000,000
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	300,000,000	118,119	(123,087,430)	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared	118,119	(123,087,430)		008065-B*-4	AEROVIAS DE MEXICO SA USD TERM LN	2		
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,542,093	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				08179C-AQ-4	Benefit Street Partners -BSP 2017-11A A2R FLOATING	1	11,600,000	11,542,093
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		934,707	917,317	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				00432C-CI-9	ACCESS GROUP INC-SERIES 2005-B CLASS A3	1	934,707	917,317
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,912,897	8,832,949	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				28148W-AC-7	EDUCATIONAL FUNDING OF T-SERIES 2011-1 CLASS B	1	8,912,897	8,832,949
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		339,851,717	326,493,338	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				00177#-AA-1	AMF Levered II, LLC - Revolver	1	339,851,717	326,493,338
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,714,077	1,642,028	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				38021F-AB-7	GOAL CAPITAL FUNDING TRU-SERIES 2015-1 CLASS B	3	1,714,077	1,642,028
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,257,719	1,189,900	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				78442G-GM-2	SLM STUDENT LOAN TRUST 2003-4 LN BKD CTF CL B	2	1,257,719	1,189,900
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,429,636	1,382,804	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				28090A-AB-5	EDUCATIONAL SERVICES OF -2014-4 SERIES B	1	1,429,636	1,382,804
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,200,000	7,080,077	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				03767M-AE-8	Apidos CLO-SERIES 18-29A CLASS A1B	1	7,200,000	7,080,077
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,800,000	8,667,622	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				39729R-AC-2	Greenwood Park CLO Ltd-SERIES 18-1A CLASS B	1	8,800,000	8,667,622
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,500,000	10,402,833	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	10,500,000	10,402,833
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,178,888	7,214,598	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				03768R-AG-1	Apidos CLO Series 19-32A-APID 2019-32A B1	1	7,178,888	7,214,598
57629*GV7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,701,119	24,073,880	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				06761K-AL-5	Barings CLO Ltd 2019-111-BABSN 2019-3A A1R	1	23,701,119	24,073,880
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	7,728,745	(74,827,039)	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared	78,745	(82,042,032)		281397-AP-4	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A1	1	7,650,000	7,214,993
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,840,720	5,878,083	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				008065-B*-4	AEROVIAS DE MEXICO SA USD TERM LN EDUCATION LOAN ASSET-BAC-SERIES 2003-1 CLASS A2	1	4,350,000	4,105,289
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,350,000	4,105,289	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				281397-AB-5	2005-4 CLASS A4R1	2	2,650,000	2,330,706
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,650,000	2,330,706	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				640310-CK-5	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A2	1	2,950,000	2,782,252
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,950,000	2,782,252	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				281397-AQ-2	GOAL CAPITAL FUNDING TR 2010-1 STUDENT LN BKD NT	1	611,311	606,159
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		611,311	606,159	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				38021E-AA-2	Nelnet Student Loan Trus-SERIES 2005-4 CLASS A4R2	2	2,733,027	2,638,535
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,733,027	2,638,535	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				64031Q-CM-1	SLM STUDENT LN TR 2006-5-NOTE CL B	1	9,547,230	9,090,337
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,547,230	9,090,337	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				83149E-AG-2	Dryden 64 CLO Ltd-DRSLF 2018-64A B	1	13,900,000	13,667,203
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,900,000	13,667,203	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				26251L-AE-4	NSLT 2013-2A B	1	28,000,000	26,508,286
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,000,000	26,508,286	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				64033E-AB-2	Northisstar Education Fina-REVENUE BONDS	1	7,223,531	7,216,376
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,223,531	7,216,376	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				66704J-AF-5	SLM Student Loan Trust 2-SLMA 2003-14 B	1	10,218,739	9,764,558
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,218,739	9,764,558	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				78442G-KP-0		1		

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STATEMENT AS OF SEPTEMBER 30, 2023 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*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,600,000	12,012,570	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				64034X-AB-9	Nelnet Student Loan Trus-NSLT 2021-1A B	1	13,600,000	12,012,570
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,100,000	8,989,073	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				64034G-AB-6	Nelnet Student Loan Trus-NSLT 2020-1A B	1	10,100,000	8,989,073
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,575,535	6,314,277	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				64031C-AB-8	NELNET STUDENT LOAN TRUS-SERIES 2012-2A CLASS B	1	6,575,535	6,314,277
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,548	1,850,549	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				78442G-PS-9	SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS B	2	2,000,548	1,850,549
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,954,457	15,897,883	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				04623T-AA-3	ASSURANT CLO I LTD-ASRNT 2018-1A A	1	15,954,457	15,897,883
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,871,523	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				67707B-AB-6	QHA Credit Partners XV L-SERIES 17-15A CLASS B	1	13,100,000	12,871,523
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,350,000	7,242,073	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				12551R-AC-2	CIFC Funding 2018-I Ltd-SERIES 18-1A CLASS B	1	7,350,000	7,242,073
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	12,771,018	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				21623P-AC-1	COOK PARK CLO LTD-COOK 2018-1A A2	1	13,000,000	12,771,018
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,891,445	3,879,863	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				63942N-AC-2	Navient Student Loan Tru-NAVSL 2021-1A B	1	3,891,445	3,879,863
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,400,000	8,305,853	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				48252Y-AE-9	KKR CLO 23 Ltd-KKR 23 B	1	8,400,000	8,305,853
57629*GU9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,948,000	26,948,000	09/28/2023	06/28/2051	SOFR Replacement Swap - CME cleared				66684B-AA-9	QHA Credit Solutions Master Fund I SPV, L.P. - Fund I Revolver	1	26,948,000	26,948,000
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	10,950,301	(23,286,020)	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared	32,801	(34,273,359)		008065-B*-4	AEROVIAS DE MEXICO SA USD TERM LN SOUTH CAROLINA STUDENT L-SERIES 2014-1 CLASS B	2	10,917,500	10,987,339
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,713,163	12,316,432	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				83715R-AG-7	SLC STUDENT LOAN TRUST-SERIES 2005-1 CLASS B	1	12,713,163	12,316,432
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,423,939	3,328,393	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				78442Q-AE-1	SLM STUDENT LOAN TRUST-SERIES 2005-8 CLASS B	1	3,423,939	3,328,393
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,747,875	2,683,764	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				78442G-OT-6	Cedar Funding IX CLO Ltd-SERIES 18-9A CLASS A2	1	2,747,875	2,683,764
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,300,000	19,064,019	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				15033E-AC-2	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS B	1	19,300,000	19,064,019
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,645,000	2,472,633	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				63938E-AE-4	NELNET STUDENT LOAN TRUS-SERIES 2006-3 CLASS B	1	2,645,000	2,472,633
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,410,014	1,244,050	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64031A-AJ-5	NAVIENT STUDENT LOAN TRU-SERIES 2015-3 CLASS B	1	1,410,014	1,244,050
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,426,498	4,377,055	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				63939L-AC-1	NELNET STUDENT LOAN TRUS-SERIES 2014-1A CLASS B	1	4,426,498	4,377,055
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,984,286	10,156,191	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64033J-AB-1	COLLEGE LOAN CORPORATION-SERIES 2005-2 CLASS B	1	9,984,286	10,156,191
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,126,641	1,054,019	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				194266-AE-2	NELNET STUDENT LOAN TRUS-SERIES 2014-5A CLASS B	1	1,126,641	1,054,019
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,227,156	3,170,172	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64033N-AB-2	SLM STUDENT LOAN TRUST-SERIES 2004-3 CLASS B	1	3,227,156	3,170,172
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,353,545	1,324,812	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				78442G-LJ-3	NELNET STUDENT LOAN TRUS-SERIES 2012-1A CLASS B	1	1,353,545	1,324,812
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,250,000	3,064,895	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64032A-AB-1	NELNET STUDENT LOAN TRUS-SERIES 2014-2A CLASS B	1	3,250,000	3,064,895
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,822,901	1,792,163	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64033L-AD-2	NELNET STUDENT LOAN TRUS-SERIES 2014-3A CLASS B	1	1,822,901	1,792,163
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,240,000	3,097,106	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				64033K-AB-8	Apidos CLO-SERIES 18-29A CLASS A2	1	3,240,000	3,097,106
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,750,000	14,588,960	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				03767M-AG-3	Magnetite VIII Ltd-MAGNE 2014-8A CR2	1	14,750,000	14,588,960
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,430,309	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				55952Y-AT-4		1	4,500,000	4,430,309

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STATEMENT AS OF SEPTEMBER 30, 2023 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 Corporate Bonds	1		6,700,000	6,593,711	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				04015U-AJ-7	Ares XXXVIII CLO Ltd-SERIES 15-38A CLASS BR	1	6,700,000	6,593,711
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	2,977,089	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				48250R-BN-5	KKR CLO 12 Ltd-KKR 12 BR2	1	3,000,000	2,977,089
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,250,000	14,122,505	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				67112K-AB-5	OCF CLO Ltd-SERIES 18-15A CLASS A2	1	14,250,000	14,122,505
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		874,569	482,570	09/06/2023	12/06/2046	SOFR Replacement Swap - CME cleared				692888-AB-1	University of East Angli Senior Unsecured Notes	1	874,569	482,570
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	17,709,472	(56,382,949)	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared	60,765	(73,798,260)		29364N-AS-7	ENTERGY MISSISSIPPI INC-SECURED NOTE	1	17,648,707	17,415,311
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,815,000	9,496,562	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				05684L-AG-0	Bain Capital Credit CLO-BCC 2021-1A C	1	9,815,000	9,496,562
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,606,587	31,611,249	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				75972Y-AA-9	RENAISSANCE FINANCE-SR UNSECURED	1	32,606,587	31,611,249
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,428,237	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				33882G-AJ-7	Flatiron Clo 17 Ltd-FLAT 2017-1A CR	1	9,500,000	9,428,237
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,122,176	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				22615E-AE-0	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,200,000	3,122,176
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,928,160	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				67104L-AG-2	CHA Loan Funding 2013-2 -OHALF 2013-2A CR	1	8,000,000	7,928,160
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,000,000	13,951,140	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				39862E-AB-0	GRIPPEN PARK CLO LTD-SERIES 17-1A CLASS B	1	14,000,000	13,951,140
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,487,759	28,624,662	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06761T-AE-2	Barings Middle Market CI-BMM 2019-1A A2	1	28,487,759	28,624,662
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,600,000	23,339,055	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				542798-AC-7	Long Point Park CLO Ltd-LNGPT 2017-1A A1B	1	23,600,000	23,339,055
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,400,000	5,305,889	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				64130H-AQ-4	Neuberger Berman Loan Ad-SERIES 2017-24A CLASS CR	1	5,400,000	5,305,889
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,424,355	6,098,910	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				00206R-GL-0	AT&T Inc-SENIOR UNSECURED	2	6,424,355	6,098,910
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,075,287	15,866,632	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				00928Q-AQ-4	AIRCADLE LTD-SENIOR UNSECURED	2	16,075,287	15,866,632
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,492,032	5,910,129	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				29365T-AF-1	Entergy Texas Inc-SECURED	1	6,492,032	5,910,129
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,855,904	11,128,532	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				90933J-AA-9	United Airlines 2016-2 C-UNTD AIR 16-2 B	3	11,855,904	11,128,532
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,790,672	10,023,604	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				05682L-AJ-6	Bain Capital Credit CLO -BCC 2019-2A AR	1	9,790,672	10,023,604
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,747,647	25,630,795	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				64135D-AA-3	Neuberger Berman Loan Ad-NEUB 2022-47A A	1	24,747,647	25,630,795
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,802,984	19,107,084	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				96467K-AA-7	Whitebox CLO Ltd-WBOX 2023-4A A1	1	18,802,984	19,107,084
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,400,000	5,418,970	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06762V-AC-0	Barings Loan Partners CL-BABSN 2022-3A B	1	5,400,000	5,418,970
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	1,592,930	(72,064,971)	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared	60,698	(73,518,695)		031162-CJ-7	AMGEN INC-SENIOR UNSECURED	2	1,532,232	1,453,724
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		175,095	173,619	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				445658-CD-7	JB HUNT TRANSPRT SVCS-SENIOR UNSECURED NOTE	2	175,095	173,619
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,724,175	21,176,892	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				456866-AM-4	INGERSOLL-RAND CO-DEBENTURE	2	21,724,175	21,176,892
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		184,900,000	184,472,696	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				42086P-AC-7	Kingsland Ltd-SERIES 18-BA CLASS A	1	184,900,000	184,472,696
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,900,000	5,850,180	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				05875M-AS-1	Ballyrock CLO 2019-2 Ltd-SERIES 19-2A CLASS BR	1	5,900,000	5,850,180
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,747,695	13,882,476	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				042735-AK-6	Arrow Electronics Inc-DEBENTURE	2	13,747,695	13,882,476

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STATEMENT AS OF SEPTEMBER 30, 2023 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*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	3,000,000	2,940,855	2,940,855	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				830120-AE-4	Sixth Street CLO-SIXST 2021-20A C Barings Middle Market CL-BMM 2018-1A C	1	3,000,000	2,940,855
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	11,728,192	11,447,443	11,447,443	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06761M-AD-9	Barings Middle Market CL-BMM 2021-1A C	2	11,728,192	11,447,443
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	12,200,000	11,109,405	11,109,405	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06760W-AJ-5	Barings Middle Market CL-BMM 2021-1A C	2	12,200,000	11,109,405
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	1,725,000	1,650,045	1,650,045	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				04018X-AJ-8	ARES CLO-ARES 2021-ALFA D	2	1,725,000	1,650,045
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	1,081,355	(72,517,428)	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared	60,663	(73,369,594)		04352E-AA-3	Ascension Health-SENIOR UNSECURED	1	1,020,692	852,166
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	5,176,738	4,937,500	4,937,500	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				195869-AP-7	COLONIAL PIPELINE CO-SR UNSECURED DISCOVER FINANCIAL SVS-SENIOR UNSECURED	1	5,176,738	4,937,500
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	47,882,682	44,003,915	44,003,915	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				254709-AM-0	LMI LTD PARTNERSHIP-SERIES 25A CLASS C2	2	47,882,682	44,003,915
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	2,500,000	2,432,998	2,432,998	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				50189P-AN-2	Barings CLO Ltd 2020-III-BABSN 2020-3A B	1	2,500,000	2,432,998
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	32,327,316	27,656,568	27,656,568	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06762X-AA-0	Steele Creek CLO 2016-1-SERIES 2016-1A CLASS AR	2	32,327,316	27,656,568
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	73,500,000	73,102,291	73,102,291	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				858102-AX-4	FLORIDA POWER & LIGHT CO-SECURED BOND	1	73,500,000	73,102,291
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	47,931,389	38,248,245	38,248,245	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				341081-FG-7	Bain Capital Credit CLO-BCC 2018-1A A2	1	47,931,389	38,248,245
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	8,800,000	8,676,844	8,676,844	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				05683L-AC-0	COX COMMUNICATIONS INC-SENIOR UNSECURED	1	8,800,000	8,676,844
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	11,656,695	10,865,716	10,865,716	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				224044-CG-0	Penske Truck Leasing Co-SENIOR UNSECURED	2	11,656,695	10,865,716
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	14,227,026	13,853,625	13,853,625	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				709599-AZ-7	Xcel Energy Inc-SENIOR UNSECURED	2	14,227,026	13,853,625
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	20,390,263	19,163,246	19,163,246	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				98389B-AV-2	Babson CLO Ltd 2013-I-SERIES 2013-IS CLASS BR	2	20,390,263	19,163,246
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	33,000,000	33,000,000	33,000,000	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				186858-AC-6	AERCAP IRELAND CAPITAL D-SENIOR UNSECURED	1	33,000,000	33,000,000
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	16,973,667	(58,319,342)	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared	60,743	(73,705,072)		00774M-AB-1	GLENCORE FUNDING LLC-SR UNSECURED	2	16,912,924	15,385,730
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	18,439,255	17,925,760	17,925,760	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				378272-AL-2	Coca-Cola Co/The-SENIOR UNSECURED	2	18,439,255	17,925,760
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	50,441,513	30,027,852	30,027,852	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				191216-CY-4	Bon Secours Mercy Health-SECURED	1	50,441,513	30,027,852
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	16,427,829	14,448,108	14,448,108	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				09778P-AA-3	O'REILLY AUTOMOTIVE INC-SENIOR UNSECURED	1	16,427,829	14,448,108
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	8,893,680	8,313,905	8,313,905	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				67103H-AF-4	SCHLUMBERGER HLDGS CORP-SR UNSECURED	2	8,893,680	8,313,905
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	9,365,368	9,164,133	9,164,133	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				806851-AG-6	DTE Electric Co-SECURED	2	9,365,368	9,164,133
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	14,093,641	10,505,483	10,505,483	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				23338V-AE-6	INTEL CORP-SENIOR UNSECURED NOTE	1	14,093,641	10,505,483
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	70,686,500	57,244,010	57,244,010	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				458140-AK-6	Brookfield Finance Inc-SENIOR UNSECURED	1	70,686,500	57,244,010
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	23,316,027	21,808,674	21,808,674	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				11271L-AC-6	HAMILTON COLLEGE-UNSECURED	1	23,316,027	21,808,674
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	19,688,530	16,274,783	16,274,783	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				40728T-AA-1	Reckitt Benckiser Treasu-SENIOR UNSECURED	1	19,688,530	16,274,783
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	18,739,457	17,709,788	17,709,788	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				75625Q-AE-9	Barings CLO Ltd 2020-III-BABSN 2020-3A B	1	18,739,457	17,709,788
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	15,500,000	13,260,514	13,260,514	09/15/2023	09/15/2047	SOFR Replacement Swap - CME cleared				06762X-AA-0	Barings CLO Ltd 2020-III-BABSN 2020-3A B	2	15,500,000	13,260,514

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STATEMENT AS OF SEPTEMBER 30, 2023 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*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		34,000,000	34,000,000	09/15/2023	09/15/2047	SOFR Replacement Swap - OME cleared				515138-AA-9	Landmark Equity Partners XVI-D, LLC	1	34,000,000	34,000,000
	Sovereign Bond of Mexico	2Z	20,000,000	25,795,682	23,982,669	06/20/2023	12/20/2028	5 Yr Credit Default Swap	(137,272)	(261,504)		912810-FP-8	US TREAS N/B-BOND	1	25,932,954	24,244,173
	Sovereign Bond of Indonesia	2Z	40,000,000	36,194,666	26,569,519	06/20/2023	12/20/2028	5 Yr Credit Default Swap	213,915	129,207		912810-RV-2	US TREASURY N/B-UNSECURED	1	35,980,751	26,440,312
	Sovereign Bond of Indonesia	2Z		14,898,041	10,775,391	06/20/2023	12/20/2028	5 Yr Credit Default Swap				912810-RU-4	US TREASURY N/B-UNSECURED	1	14,898,041	10,775,391
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	150,000,000	9,926,823	(30,184,845)	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared	26,823	(39,963,431)		69688X-AU-5	Palmer Square CLO 2014-1-SERIES 2014-1A CLASS A2RR	1	9,900,000	9,778,586
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,221,801	2,306,370	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				281378-AB-5	EDUCATIONAL SERVICES OF -SERIES 2015-1 CLASS B	1	2,221,801	2,306,370
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,935,604	2,867,337	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				281377-AB-9	EDUCATIONAL SERVICES OF -SERIES 2014-2 CLASS B	1	2,935,604	2,867,337
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		776,429	687,913	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				19458L-BD-1	COLLEGIATE FUNDING SERVI-SERIES 2005-A CLASS B	1	776,429	687,913
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,000,000	15,000,000	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	15,000,000	15,000,000
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,330,259	11,381,956	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				708696-BY-4	Pennsylvania Electric Co-SENIOR UNSECURED	2	12,330,259	11,381,956
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		24,106,561	23,017,749	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				806851-AK-7	Schlumberger Holdings Co-SENIOR UNSECURED	2	24,106,561	23,017,749
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		28,134,242	27,235,810	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				10510K-AC-1	BRAMBLES USA INC-SR UNSECURED	2	28,134,242	27,235,810
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		32,261,299	26,847,141	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				438516-BB-1	HONEYWELL INTERNATIONAL - SENIORUNSECURED NOTE	1	32,261,299	26,847,141
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		24,681,375	21,113,090	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				438516-AT-3	HONEYWELL INTERNATIONAL -SENIOR NOTE	1	24,681,375	21,113,090
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,572,863	14,500,727	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				03328Y-AA-2	ANCHORAGE CAPITAL CLO 1--ANCHC 2018-1RA A1	1	14,572,863	14,500,727
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,197,212	9,999,042	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				06761T-AJ-1	Barings Middle Market CI-BMM 2019-1A C	2	10,197,212	9,999,042
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,700,000	2,643,551	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				125550-AW-6	CIFC Funding 2020-I Ltd-CIFC 2020-1A DR	2	2,700,000	2,643,551
57629*ER8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,700,000	2,597,859	08/30/2023	08/30/2034	SOFR Replacement Swap - OME cleared				06762J-AG-8	Babson CLO Ltd/Cayman Is-BABSN 2021-2A D	2	2,700,000	2,597,859
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	19,770,846	(57,899,652)	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared	41,264	(69,656,855)		693304-AY-3	PECO Energy Co-SECURED	1	19,729,582	11,757,203
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,066,634	15,233,757	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				579780-AN-7	MCCORMICK & CO INC/MID-SENIOR UNSECURED	2	16,066,634	15,233,757
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,805,705	13,211,886	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				90932K-AA-7	United Airlines 2019-2 C-UNTD AIR 19-2 B FIXED	3	14,805,705	13,211,886
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,336,050	13,470,499	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				22822V-AE-1	CROWN CASTLE INTL CORP-SENIOR UNSECURED	2	14,336,050	13,470,499
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,594,595	24,332,408	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				05369A-AA-9	Aviation Capital Group L-SENIOR UNSECURED	2	26,594,595	24,332,408
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		45,350,000	43,819,755	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				592688-B8-3	Metller-Toledo Internati Senior Note Ser	2	45,350,000	43,819,755
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,000,000	9,999,540	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				290015-AN-6	Elmwood CLO I Ltd-ELMW1 2019-1A BR	1	10,000,000	9,999,540
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		7,850,000	7,846,625	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				48661Q-AE-1	Kayne CLO 9 Ltd-SERIES 20-9A CLASS B1	1	7,850,000	7,846,625
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,000,000	14,884,605	08/30/2023	08/30/2039	SOFR Replacement Swap - OME cleared				04019L-AL-8	ARES LI CLO Ltd-ARES 2019-51A A1R	1	15,000,000	14,884,605

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STATEMENT AS OF SEPTEMBER 30, 2023 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*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,000,000	14,884,275	08/30/2023	08/30/2039	SOFR Replacement Swap - CME cleared				17180W-AC-9	CIFC Funding 2018-11 Ltd-CIFC 2018-2A A2	1	15,000,000	14,884,275
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		11,750,000	11,627,107	08/30/2023	08/30/2039	SOFR Replacement Swap - CME cleared				55821A-AC-2	Madison Park Funding Ltd-SERIES 18-28A CLASS A2	1	11,750,000	11,627,107
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		35,500,000	30,370,854	08/30/2023	08/30/2039	SOFR Replacement Swap - CME cleared				06762X-AA-0	Barings Clo Ltd 2020-111-BABSN 2020-3A B	2	35,500,000	30,370,854
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,000,000	21,000,000	08/30/2023	08/30/2039	SOFR Replacement Swap - CME cleared				186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	21,000,000	21,000,000
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	1,449,887	(87,900,895)	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared	53,546	(89,240,705)		984851-AF-2	Yara International ASA-SENIOR UNSECURED	2	1,396,341	1,339,810
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		30,171,888	28,465,668	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				28176E-AD-0	Edwards Lifesciences Cor-SENIOR UNSECURED	2	30,171,888	28,465,668
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		36,966,211	34,486,047	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				361448-BC-6	GATX Corp-SENIOR UNSECURED	2	36,966,211	34,486,047
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		17,730,960	16,851,754	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				120568-AX-8	BUNGE LTD FINANCE CORP-SENIOR UNSECURED	2	17,730,960	16,851,754
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,590,025	15,545,484	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				00908P-AC-1	Air Canada 2017-1 Class -SECURED	2	16,590,025	15,545,484
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,215,079	5,006,521	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				171340-AN-2	CHURCH & DWIGHT CO INC-SENIOR UNSECURED	2	5,215,079	5,006,521
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		45,213,220	33,702,199	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				23338V-AE-6	DTE Electric Co-SECURED	1	45,213,220	33,702,199
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,999,999	42,022,482	08/30/2023	08/30/2049	SOFR Replacement Swap - CME cleared				G5695F-AA-6	MM Investment Holding Revolver Floating Line	2	47,999,999	42,022,482
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	306,000,000	75,102,910	(61,956,840)	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared	102,910	(134,665,365)		30290Y-AC-5	FS Global Credit Opportu-FS GLOBAL CREDIT	1	75,000,000	72,708,525
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,467,198	9,883,412	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				801060-AD-6	Sanofi-SENIOR UNSECURED	1	10,467,198	9,883,412
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,042,081	6,466,958	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				00108W-AH-3	AEP Texas Inc-SENIOR UNSECURED	2	7,042,081	6,466,958
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,500,000	12,621,328	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				892331-AD-1	Toyota Motor Corp-SENIOR UNSECURED	1	13,500,000	12,621,328
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,701,238	19,556,695	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				79466L-AF-1	salesforce.com Inc-SENIOR UNSECURED	1	20,701,238	19,556,695
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,020,895	7,518,374	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				369550-BC-1	General Dynamics Corp-SENIOR UNSECURED	1	8,020,895	7,518,374
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,865,400	22,144,661	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				892330-AC-5	Toyota Industries Corp-SENIOR UNSECURED	1	23,865,400	22,144,661
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,416,756	32,220,505	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				501886-AT-0	LOM XVIII LP-LCM 18A A1R	1	32,416,756	32,220,505
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		43,858,616	43,740,680	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				13876J-AC-6	Canyon Capital Clo Ltd-CANYC 2012-1RA A	1	43,858,616	43,740,680
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,300,210	2,285,915	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				313747-AU-1	Federal Realty Investmen-SENIOR UNSECURED	2	2,300,210	2,285,915
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		78,234,275	68,491,635	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				G5695F-AA-6	MM Investment Holding Revolver Floating Line	2	78,234,275	68,491,635
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	255,000,000	141,085,541	12,088,155	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared	85,545	(111,352,885)		G5695F-AA-6	MM Investment Holding Revolver Floating Line	2	140,999,996	123,441,040
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,960,671	7,366,211	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				06406R-AF-4	Bank of New York Mellon -SENIOR UNSECURED	1	7,960,671	7,366,211
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,548,731	11,517,034	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				90932P-AA-6	United Airlines 2014-1 C-SECURED NOTE	2	11,548,731	11,517,034
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,850,550	12,079,114	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				606822-AV-6	Mitsubishi UFJ Financial-SENIOR UNSECURED	1	12,850,550	12,079,114

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STATEMENT AS OF SEPTEMBER 30, 2023 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*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,800,000	6,346,734	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				631005-BH-7	Narransett Electric Co-SENIOR UNSECURED	1	6,800,000	6,346,734
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,331,990	2,232,755	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				532457-AZ-1	Eli Lilly & Co-SENIOR UNSECURED	1	2,331,990	2,232,755
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,101,665	11,685,583	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				09062X-AF-0	BIODEN INC-SR UNSECURED	2	12,101,665	11,685,583
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,073,830	2,938,438	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				46625H-JY-7	JPMorgan Chase & Co-SUBORDINATED NOTE	1	3,073,830	2,938,438
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,723,016	2,602,772	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				452308-AX-7	Illinois Tool Works Inc-SENIOR UNSECURED	1	2,723,016	2,602,772
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,636,677	7,011,405	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				313747-AY-3	Federal Realty Investmen-SENIOR UNSECURED	2	7,636,677	7,011,405
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,560,259	7,491,080	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				477143-AJ-0	JetBlue 2019-1 Class A P-JETBLUE 19-1 A	2	8,560,259	7,491,080
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,195,708	5,827,927	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				670346-AP-0	Nucor Corp-SENIOR UNSECURED	1	6,195,708	5,827,927
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,971,217	1,888,723	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				78442G-RY-4	SLM STUDENT LOAN TRUST-SERIES 2006-2 CLASS B	1	1,971,217	1,888,723
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		98,077,163	97,762,139	09/05/2023	09/03/2049	SOFR Replacement Swap - CME cleared				42086Q-AA-9	Kingsland VI Ltd-KING 2013-6A AR 18A CLASS A	1	98,077,163	97,762,139
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	98,020,695	50,618,137	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared	69,647	(47,176,581)		85816W-AC-8	CIFC Funding 2020-I Ltd-CIFC 2020-1A A1R	1	97,951,048	97,794,718
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		96,235,517	96,554,971	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				12555Q-AN-6	ALM XIV Ltd-SERIES 14-14A CLASS A1R2	1	96,235,517	96,554,971
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,306,544	14,283,368	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				74988L-AA-2	CIFC Funding 2014-V Ltd-CIFC 2014-5A A1R2	1	14,306,544	14,283,368
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,500,000	15,484,640	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				12550A-AT-3	Wind River CLO Ltd-SERIES 18-3A CLASS A2	1	15,500,000	15,484,640
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,814,510	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				88432U-AC-0	Ares XXVII CLO Ltd-ARES 2013-2A BR2	1	15,000,000	14,814,510
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,741,909	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				00190Y-BF-1	Ballyrock CLO 2018-1 Ltd	1	11,900,000	11,741,909
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,777,607	23,832,418	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				05875H-AA-1	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	23,777,607	23,832,418
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,826,086	9,826,086	07/10/2023	01/08/2032	SOFR Replacement Swap - CME cleared				186858-AC-6	COOF Onshore Co-Borrower Revolving Loan	1	9,826,086	9,826,086
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	109,355,290	61,876,113	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared	55,290	(47,423,887)		14987#-AA-2	Morgan Stanley-SENIOR UNSECURED	1	109,300,000	109,300,000
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,132,031	17,232,510	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				61744Y-AK-4	Diameter Capital CLO 4 L-DLO 2022-4A A1	1	19,132,031	17,232,510
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		49,569,201	50,059,650	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				25255N-AA-6	Barings CLO Ltd 2019-III-BABSN 2019-3A A1R	1	49,569,201	50,059,650
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,697,667	14,928,825	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				06761K-AL-5	Taylor Wimpey PLC Senior Unsecured Notes	2	14,697,667	14,928,825
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,178,432	4,181,619	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				877409-A#-9	Navient Student Loan Tru-NAVSL 2021-1A B	1	4,178,432	4,181,619
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,043,009	2,036,928	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				63942N-AC-2	DTE Electric Co-SECURED	1	2,043,009	2,036,928
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,718,163	1,280,729	07/10/2023	01/08/2035	SOFR Replacement Swap - CME cleared				23338V-AE-6	Hofer Financial Services Senior Note Ser	1	1,718,163	1,280,729
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	400,000,000	74,905,248	(91,957,963)	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared	135,248	(164,909,108)		A3158#-AC-3	TPF Equity REIT Operatin Gtd Senior Note	1	74,770,000	72,951,145
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		79,100,000	74,471,147	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				87278*-AD-4		1	79,100,000	74,471,147

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		57,050,000	56,576,485	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				00458*-AB-5	AquaSure Finance Pty Ltd Gtd Senior Secu	1	57,050,000	56,576,485
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,800,000	54,165,106	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				G5147*-AD-8	Johnson Matthey PLC Senior Note Ser	1	59,800,000	54,165,106
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		62,900,000	62,429,823	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				786594-A#-9	Safran Senior Note Ser	1	62,900,000	62,429,823
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		62,800,000	60,331,332	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				Q0832*-AD-8	Australia Pacific Airpor Gtd Senior Note	2	62,800,000	60,331,332
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,347,075	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				03330A-AE-2	Anchorage Capital CLO 3--ANCHC 2014-3RA C	1	7,500,000	7,347,075
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,625,172	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				00119Y-AC-7	AGL CLO Ltd-AGL 2021-10A B	1	6,750,000	6,625,172
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,025,000	11,868,038	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				06762J-AC-7	Babson CLO Ltd/Cayman Is-BABSN 2021-2A B	1	12,025,000	11,868,038
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,704,257	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				64133V-AC-1	Neuberger Berman CLO Ltd-NEUB 2021-44A B	1	11,900,000	11,704,257
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,100,000	6,003,937	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				05682E-AE-3	Bain Capital Credit CLO -BCC 2021-5A B	1	6,100,000	6,003,937
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,552,546	14,869,530	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				00119Y-AA-1	AGL CLO 10 Ltd-AGL 2021-10A A	1	14,552,546	14,869,530
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,000,000	13,349,350	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				03330P-AA-7	ANCHORAGE CREDIT FUNDING-SERIES 18-5A CLASS A	1	14,000,000	13,349,350
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,930,945	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				75009P-AC-1	Rad CLO 12 Ltd-RAD 2021-12A B	1	13,100,000	12,930,945
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,029,330	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				08179P-AE-2	Benefit Street Partners -BSP 2022-27A B1	1	10,000,000	10,029,330
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,625,000	6,522,710	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				48250E-AS-4	KKR CLO 30 Ltd-KKR 30A BR	1	6,625,000	6,522,710
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		43,000,000	43,000,000	08/11/2023	02/11/2050	SOFR Replacement Swap - CME cleared				51513#-AA-9	Landmark Equity Partners XVI-D, LLC	1	43,000,000	43,000,000
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	185,000,000	23,875,040	(54,252,220)	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared	57,201	(78,461,254)		06761M-AB-3	Barings Middle Market CL-BMM 2018-1A A2	1	23,817,839	24,209,034
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,454,020	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				55820B-AL-1	Madison Park Funding XLV-MDPK 2020-45A BR	1	5,500,000	5,454,020
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,870,580	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				38137Y-AS-0	Goldentree Loan Managem-GLM 2019-4A BR	1	15,000,000	14,870,580
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,500,000	11,396,305	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				282523-AM-1	1828 CLO Ltd-GUGG4 2016-1A A1JR	1	11,500,000	11,396,305
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,941,240	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				14317R-AC-3	CARLYLE US CLO 2018-3 LT-CGMS 2018-3A A1B	1	8,000,000	7,941,240
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,622,469	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				67113G-AG-2	Oak Hill Credit Partners-OAKC 2020-5A B	1	7,700,000	7,622,469
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,117,651	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				64129J-BG-4	Neuberger Berman CLO XIV-NEUB 2013-14A BR2	1	9,200,000	9,117,651
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,882,760	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				27831B-AE-3	Eaton Vance CLO 2018-1 L-EATON 2018-1A B	1	8,000,000	7,882,760
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,700,000	14,508,577	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				55821L-AC-8	Madison Park Funding XXX-MDPK 2021-39A B	1	14,700,000	14,508,577
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,378,697	12,341,957	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				553205-AC-9	MP CLO III LTD-MP3 2013-1A AR	1	12,378,697	12,341,957
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,357,472	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				88432U-AE-6	Wind River CLO Ltd-SERIES 18-3A CLASS B	1	9,500,000	9,357,472
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,161,402	3,156,675	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				05875H-AC-7	BALLYROCK CLO 2018-1 LTD-SERIES 2018-1A CLASS A2	1	3,161,402	3,156,675
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,950,000	9,839,147	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				03328T-BC-8	Anchorage Capital CLO 7 -ANCHC 2015-7A BR2 FLOATING	1	9,950,000	9,839,147

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STATEMENT AS OF SEPTEMBER 30, 2023 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*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,912,184	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				74979V-AE-3	RR Ltd-RRAM 2018-5A A2	1	8,000,000	7,912,184
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,670,500	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				74980P-AC-7	ALM Ltd/KY-SERIES 21-14A CLASS A2 Wind River CLO Ltd-WINDR 2021-1A B1	1	20,000,000	19,670,500
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,458,228	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				97314H-AC-3	Madison Park Funding XXI-MDPK 2018-29A B	1	7,700,000	7,458,228
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,455,226	11,476,483	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				55820C-AG-0	GT Loan Financing I Ltd -SERIES 2013-1A CLASS BR	1	11,455,226	11,476,483
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,969,305	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				36248M-AL-1	Sound Point Clo XXXI Ltd-SNDPT 2021-3A B	1	7,000,000	6,969,305
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,100,000	9,846,914	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				83615P-AC-1	CenterPoint Properties T Senior Note Ser	1	10,100,000	9,846,914
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,135,000	13,791,124	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				151895-D*-7	RREEF America REIT II, I Senior Unsecured Notes	1	14,135,000	13,791,124
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	12,767,895	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				749868-BB-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	15,000,000	12,767,895
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	16,000,000	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				186858-AC-6	KREF Lending VII LLC - Term Loan Series 2019-7	1	16,000,000	16,000,000
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	215,000,000	50,316,575	(41,138,336)	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared	66,526	(91,388,385)		482758-AG-0	Peace Park CLO Ltd-PCEPK 2021-1A A	1	50,250,049	50,250,049
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,300,000	24,114,931	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				70470M-AC-9	THL Credit Wind River 20-WINDR 2017-1A BR	1	24,300,000	24,114,931
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,000,000	21,322,818	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				97315T-AE-2	TICP CLO VI 2016-2 Ltd-TICP 2016-6A AR2	1	22,000,000	21,322,818
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,923,290	36,251,092	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				87246M-AS-1	Atrium IX-ATRM 9A BR2	1	35,923,290	36,251,092
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,000,000	20,791,743	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				55821C-AC-8	Goldentree Loan Managem-SERIES 19-4A CLASS AJR	1	21,000,000	20,791,743
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,000,000	23,815,200	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				38137Y-AQ-4	TIAA CLO I Ltd-TIA 2016-1A AR	1	24,000,000	23,815,200
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,900,000	8,873,754	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				87271L-AJ-1	Flatiron CLO 18 Ltd-FLAT 2018-1A A	1	8,900,000	8,873,754
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,144,511	25,051,803	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				33883G-AA-5	Kingsland Ltd-SERIES 18-8A CLASS A	1	25,144,511	25,051,803
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,100,000	8,081,281	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				42086P-AC-7	Millennium Pipeline Comp Senior Secured	1	8,100,000	8,081,281
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,924,383	20,038,313	08/21/2023	02/20/2050	SOFR Replacement Swap - CME cleared				60040#-AB-8	Manchester United Football Club, Ltd Senior Secu	1	19,924,383	20,038,313
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		250,000,000	51,583,536	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared	93,536	(110,854,254)		G5791#-AA-9	MM Investment Holding Revolver Floating Line	2	51,500,000	48,055,062
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		189,999,995	166,338,991	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				G5695#-AA-6	Victoria Power Networks Gtd Senior Note	1	189,999,995	166,338,991
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,500,000	36,229,440	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				Q8396#-AK-7	Envestra Victoria Pty Lt Senior Secured	1	39,500,000	36,229,440
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,237,613	21,498,477	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				04351L-AA-8	Fonterra Co-operative Gr Senior Unsecured Notes	1	24,237,613	21,498,477
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,401,563	25,172,702	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				46247#-AA-2	Iowa Interstate Railroad Senior Secured	1	26,401,563	25,172,702
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	37,993,421	(75,341,092)	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared	93,421	(110,380,476)		Q3920#-AL-3	Envestra Victoria Pty Lt Senior Secured	1	37,900,000	35,039,384
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,150,000	37,061,558	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				Q3535#-AD-8	RREEF AMERICA REIT II INC SR UNSECD NT SER D	1	36,150,000	37,061,558
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,000,000	36,783,630	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				749868-AV-3		1	39,000,000	36,783,630

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STATEMENT AS OF SEPTEMBER 30, 2023 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*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,250,000	35,735,139	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				Q3920F-AG-4	Fonterra Co-operative Gr Senior Note	1	38,250,000	35,735,139
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,921,535	24,671,183	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				87305Q-CM-1	TTX CO-SENIOR UNSECURED	1	31,921,535	24,671,183
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		704,444	677,740	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				493268-BW-5	KEYCORP STUDENT LOAN TRU-SERIES 2004-A CLASS 1B	1	704,444	677,740
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,900,000	7,760,984	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				92916Q-AC-6	VOYA CLO 2017-4 LTD-SERIES 17-4A CLASS B	1	7,900,000	7,760,984
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,050,000	6,941,360	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				04016P-AN-8	Ares XLIII CLO Ltd-SERIES 2017-43A CLASS CR	1	7,050,000	6,941,360
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,974,562	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				14315R-AE-1	Carlyle Global Market S1-SERIES 18-4A CLASS A2	1	7,000,000	6,974,562
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,500,000	42,837,932	08/25/2023	02/25/2050	SOFR Replacement Swap - CME cleared				27889*-AM-1	ECOM Atlantic Inc - Guaranteed Series A Senior Note	1	45,500,000	42,837,932
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	38,997,452	(80,482,514)	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared	97,452	(115,051,699)		06235F-AN-2	Mirvac Group Finance Ltd Senior Note	1	38,900,000	34,569,185
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,417,500	29,735,501	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				74979U-AA-3	RS 2018 Private, LLC Senior Secured	1	31,417,500	29,735,501
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,600,000	35,254,431	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				05565E-G8-8	BMW U.S. Capital LLC Gtd Senior Note	1	35,600,000	35,254,431
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,150,000	34,219,406	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				Q3189*-AC-3	DEXUS Funds Management L Senior Note Ser	1	38,150,000	34,219,406
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,000,000	60,000,000	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				515138-AA-9	Landmark Equity Partners XVI-D, LLC	1	60,000,000	60,000,000
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,100,000	29,131,961	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				74264*-AC-0	PRISA LHC Senior Note Ser	1	31,100,000	29,131,961
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,783,200	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				65023P-AQ-3	Newark BSL CLO 2 Ltd-NBCLO 2017-1A A2R	1	16,000,000	15,783,200
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,850,000	9,778,548	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				48254H-AC-8	KKR CLO 32 Ltd-KKR 32A B	1	9,850,000	9,778,548
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,300,000	8,296,348	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				29002Q-AC-3	Elmwood CLO VII Ltd-ELMW7 2020-4A B	1	8,300,000	8,296,348
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,125,000	5,055,792	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				05683H-AS-4	Bain Capital Credit CLO -BCC 2017-2A GR2	1	5,125,000	5,055,792
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,100,000	5,100,041	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				06760B-AJ-1	BABSON CLO LTD-SERIES 17-1A CLASS C	1	5,100,000	5,100,041
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,500,000	38,502,665	08/29/2023	02/26/2050	SOFR Replacement Swap - CME cleared				G2037*-AA-4	Chanel Limited Senior Note Series A	1	39,500,000	38,502,665
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	50,082,245	(85,865,617)	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared	82,245	(135,445,567)		143133-AA-4	CGMS 2021-6A A1	1	50,000,000	49,579,950
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,599,150	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				82670Q-AA-7	Signal Peak CLO 9 Ltd-SPEAK 2021-9A A1	1	50,000,000	49,599,150
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	12,990,471	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				03766G-AQ-5	Apidos CLO XXVI-APID 2017-26A A2R	1	13,100,000	12,990,471
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,516,570	60,163,676	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				25255D-AA-8	Diameter Capital CLO 1 L-DOLO 2021-1A A1A	1	60,516,570	60,163,676
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,600,000	13,367,549	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				97316L-AC-2	THL Credit Wind River 20-WINDR 2017-3A BR	1	13,600,000	13,367,549
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,525,000	11,473,599	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				48252U-AJ-6	KKR CLO 25 Ltd-SERIES 25 CLASS BR	1	11,525,000	11,473,599
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	10,894,455	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				06759J-AS-7	Barings CLO Ltd 2019-I-SERIES 2019-1A CLASS BR	1	11,000,000	10,894,455
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,148,508	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				39809G-AC-9	GREYWOLF CLO VI Ltd-GWOLF 2018-1A A2	1	9,200,000	9,148,508
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,650,000	8,495,191	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				67400F-AE-1	OAKTREE CLO 2018-1 LTD SR SECD NT CL A-2	1	8,650,000	8,495,191

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,170,595	8,291,941	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				124166-AA-7	Buttermilk Park CLO Ltd-BMILK 2018-1A A1	1	8,170,595	8,291,941
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	10,813,847	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				13875M-AC-0	Canyon CLO 2021-3 Ltd-CANVC 2021-3A	1	11,000,000	10,813,847
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,200,000	7,147,620	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				06759M-AE-1	Babson CLO Ltd 2016-1-BABSN 2016-1A A2R	1	7,200,000	7,147,620
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,000	6,825,756	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				67110U-AN-9	QHA Loan Funding 2016-1 -OHALF 2016-1A B1R	1	6,900,000	6,825,756
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,617,275	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				87249C-AC-5	TICP CLO X LTD-SERIES 18-10A CLASS B	1	6,700,000	6,617,275
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,000,000	25,000,000	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				14987#-AA-2	CCOF Onshore Co-Borrower Revolving Loan	1	25,000,000	25,000,000
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,033,816	6,180,092	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				87250R-AA-2	TICP CLO XV Ltd-TICP 2020-15A A	1	6,033,816	6,180,092
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,800,000	5,763,785	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				29002G-AC-5	Elmwood CLO IV Ltd-ELMW4 2020-1A B	1	5,800,000	5,763,785
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,750,000	5,678,620	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				77340G-AL-5	Rockford Tower CLO 2017-2 Ltd	1	5,750,000	5,678,620
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,545,594	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				50200F-AG-4	LCM 26 Ltd-SERIES 26A CLASS C	1	5,650,000	5,545,594
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,250,000	5,250,210	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				12555X-AG-6	CIFC Funding Ltd-CIFC 2019-6A C	1	5,250,000	5,250,210
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,236,842	14,211,216	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				87241F-AA-0	TCW Direct Lending Structured Solutions 2019 LLC - Class A Note	1	14,236,842	14,211,216
57629*FF3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,500,000	19,456,533	09/15/2023	06/15/2050	SOFR Replacement Swap - CME cleared				74264*-AE-6	PRISA LHC, LLC Senior Note Series C	1	21,500,000	19,456,533
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		300,000,000	56,544,298	(124,762,031)	09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared	100,469	(164,174,102)	149123-CJ-8	Caterpillar Inc-SENIOR UNSECURED	1	56,443,829	39,412,071
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,512,969	30,207,788		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			91324P-EA-6	UnitedHealth Group Inc-SENIOR UNSECURED	1	50,512,969	30,207,788
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		46,540,543	30,244,325		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			143499-AB-7	Carnegie Institution of -UNSECURED	1	46,540,543	30,244,325
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		44,767,041	32,053,137		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			355611-AA-2	Fred Hutchinson Cancer R-UNSECURED	1	44,767,041	32,053,137
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,894,525	10,519,757		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			29157T-AD-8	Emory University-UNSECURED	1	12,894,525	10,519,757
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		86,000,000	86,000,000		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			515138-AA-9	Landmark Equity Partners XVI-D, LLC	1	86,000,000	86,000,000
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,561,136		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			14315D-AC-6	Carlyle Global Market St-CGMS 2021-3SA A2	1	6,700,000	6,561,136
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,904,035	15,856,625		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			26442T-AH-0	Duke University-UNSECURED	1	25,904,035	15,856,625
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,637,646	16,821,472		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			06654D-AC-1	Banner Health-UNSECURED	1	25,637,646	16,821,472
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,750,000	11,553,564		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			50200F-AE-9	LCM 26 Ltd-SERIES 26A CLASS B	1	11,750,000	11,553,564
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,474,662		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			64130H-AN-1	Neuberger Berman Loan Ad-NEUB 2017-24A BR FLOATING	1	11,600,000	11,474,662
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,325,000	10,191,260		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			05683E-AQ-5	Bain Capital Credit CLO -BCC 2020-2A BR	1	10,325,000	10,191,260
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,236,908	37,440,349		09/29/2023	06/29/2050	SOFR Replacement Swap - CME cleared			44919*-AC-2	1 595 Express, LLC Senior Secured	1	41,236,908	37,440,349
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		200,000,000	23,074,170	(82,362,112)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	74,170	(103,419,624)	41242*-AY-8	Hardwood Funding LLC Senior Secured	1	23,000,000	21,057,512
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,190,000	20,230,002		09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared			Q7795#-AA-0	QIC Finance (Shopping Ce Gtd Senior Note	1	22,190,000	20,230,002

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,560,915	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				949723-AC-4	Wellman Park CLO Ltd-SERIES 21-1A CLASS B	1	7,700,000	7,560,915
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,694,924	8,047,074	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				02376*-AA-0	American Airlines Group Senior Secured	1	8,694,924	8,047,074
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,600,000	21,018,830	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05237*-AF-1	Austin Powder Holdings C Senior Note Ser	1	21,600,000	21,018,830
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,600,000	17,827,561	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				62044@-BA-2	Compass Group PLC Senior Note Ser	1	18,600,000	17,827,561
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,325,259	13,469,711	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				69706#-AA-5	WINGS Aviation 62696 USD Tranche A-1 Ln	1	14,325,259	13,469,711
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,400,000	18,719,122	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				12656*-AK-8	CSLB Holdings, Inc. Gtd Senior Note	1	20,400,000	18,719,122
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,100,000	20,993,445	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				69850@-AC-7	YORKSHIRE WTR SERV BRADFORD-GTD SR	1	21,100,000	20,993,445
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,950,000	8,838,939	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				50184N-AP-7	LCM LTD PARTNERSHIP-SERIES 15A CLASS CR	1	8,950,000	8,838,939
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,016,868	21,005,407	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				141781-BJ-2	Cargill Inc-SENIOR UNSECURED	1	28,016,868	21,005,407
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	8,360,158	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				38136F-BJ-1	Goldentree Loan Managem-GLM 2017-1A B1R2	1	8,500,000	8,360,158
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,550,000	7,388,385	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				92917W-AY-4	Voya CLO 2018-4 Ltd-SERIES 18-4A CLASS BR	1	7,550,000	7,388,385
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,850,000	13,689,714	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05684R-AE-2	Bain Capital Credit CLO-BCC 2021-2A B	1	13,850,000	13,689,714
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,432,261	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				48255A-AC-2	KKR CLO 36 Ltd-KKR 36A B	1	13,700,000	13,432,261
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,440,595	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				08182B-AN-8	Benefit Street Partners -BSP 2019-17A BR	1	5,500,000	5,440,595
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,900,000	15,580,787	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				74170*-AW-9	Prime Property Fund LLC Senior Note Series U	1	17,900,000	15,580,787
57629*FJ5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,000,000	22,000,000	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				51513@-AA-9	Landmark Equity Partners XVI-D, LLC	1	22,000,000	22,000,000
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	18,824,142	(85,244,679)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	74,142	(103,307,810)		74170*-AC-3	Prime Property Fund LLC Senior Note Ser	1	18,750,000	18,063,131
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,100,000	19,360,260	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				56081#-CA-6	Major League Baseball Tr Series 44 Term Note	1	20,100,000	19,360,260
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,450,000	20,446,258	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				62044@-AY-1	Compass Group PLC Senior Note Ser	1	20,450,000	20,446,258
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,700,000	17,230,442	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				41242*-AU-6	Hardwood Funding LLC Senior Note Ser	1	18,700,000	17,230,442
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,315,000	18,534,075	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				36198*-AA-4	GI Manager L.P. Senior Secured Notes	1	19,315,000	18,534,075
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,700,000	16,844,364	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				41242*-AX-0	Hardwood Funding LLC Senior Secured	1	17,700,000	16,844,364
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,900,000	15,213,692	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				68233J-A@-3	Oncor Electric Delivery SR SEC'D NT SER B	1	15,900,000	15,213,692
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		78,284,368	77,213,635	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				931142-CS-0	WAL-MART STORES INC-SENIOR NOTE	1	78,284,368	77,213,635
57629*FLO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,700,000	27,210,818	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				38176D-AJ-8	Golub Capital Partners C-GOCAP 2015-26A A2R	1	27,700,000	27,210,818
57629*FIM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	24,074,194	(80,409,032)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	74,194	(103,515,464)		00114*-AR-4	AEP Transmission Company Senior Note Ser	1	24,000,000	23,106,432
57629*FIM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,700,000	25,050,330	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				64622#-AB-5	Howard De Walden Estates Gtd Senior Note	1	25,700,000	25,050,330
57629*FIM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,750,000	24,435,007	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				60646#-AN-9	Associated British Foods Senior Note Ser	1	24,750,000	24,435,007

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,900,000	22,290,789	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				57169*-AU-1	Mars, Inc. Senior Note Ser	1	23,900,000	22,290,789
57629*FM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,750,000	21,188,350	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				06235#-AF-9	Mirvac Group Finance Ltd Gtd Senior Note	1	21,750,000	21,188,350
57629*FM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,150,000	19,877,109	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				25763#-AE-0	Donaldson Co Inc Senior Note Ser	1	20,150,000	19,877,109
57629*FM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		135,999,996	119,063,699	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				65695#-AA-6	MM Investment Holding Revolver Floating Line	2	135,999,996	119,063,699
57629*FM8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	12,963,418	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				48250W-AG-0	KKR QLO 14 Ltd-KKR 14 AR	1	13,000,000	12,963,418
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	8,555,580	(69,731,903)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	55,580	(77,373,038)		74170*-AR-0	Prime Property Fund LLC Senior Note Ser	1	8,500,000	7,641,135
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	7,825,950	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				41242*-BF-8	Hardwood Funding LLC Senior Secured	1	8,500,000	7,825,950
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,200,000	7,907,326	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				479142-E8-6	Johnson Matthey PLC Series A Senior Notes	1	8,200,000	7,907,326
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,850,001	3,786,641	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				838515-F8-8	South Jersey Gas Co. Medium Term Not	1	3,850,001	3,786,641
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,386,855	7,034,997	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				184692-B#-7	Clearbridge Energy MLP Fd Inc-Senior Secured	1	7,386,855	7,034,997
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,582,970	4,174,719	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05389L-AK-9	Avolon Aerospace Leasing Secured Note B7	1	4,582,970	4,174,719
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,978,287	4,947,935	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				C1466#-AA-6	QPR Leasing Ltd Senior Secured	2	4,978,287	4,947,935
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,950,000	6,826,492	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				92203#-AR-9	Vanguard Group, Inc. Senior Notes Series D	1	6,950,000	6,826,492
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,450,000	4,304,841	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				04018E-AE-1	Ares LIX QLO Ltd-ARES 2021-59A C1	1	4,450,000	4,304,841
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,282,872	3,916,554	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05389L-AH-6	Avolon Aerospace Leasing Secured Note B7	1	4,282,872	3,916,554
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		93,212,867	73,642,639	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				055451-AV-0	BHP Billiton Finance USA-SR UNSECURED	1	93,212,867	73,642,639
57629*FN6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,430,600	26,177,570	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				90226#-AA-3	2014 REPLACEMENT PWR STATUTORY TR SR SEC NT	1	27,430,600	26,177,570
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	13,919,501	(65,277,046)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	55,501	(77,049,578)		78403D-AR-1	SBA Tower Trust-ASSET BACKED RREEF America REIT II, I Senior	1	13,864,000	11,772,532
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,646,554	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				749868-AN-1	Avolon Aerospace Leasing Secured Note Ser	1	6,700,000	6,646,554
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,150,428	3,796,969	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05389L-AA-1	Avolon Aerospace Leasing Secured Note A3	1	4,150,428	3,796,969
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,440,000	6,275,600	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				74170*-AD-1	Prime Property Fund LLC Senior Note Ser	1	6,440,000	6,275,600
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,137,341	3,783,061	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05389L-AD-5	Avolon Aerospace Leasing Secured Note A3	1	4,137,341	3,783,061
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,161,282	4,793,442	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05400F-AE-1	Avolon Aerospace Funding Senior Secured	1	5,161,282	4,793,442
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,146,479	4,792,010	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05400F-AG-6	Avolon Aerospace Funding Senior Secured	1	5,146,479	4,792,010
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,500,805	6,357,761	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				184692-B*-1	Clearbridge Energy MLP Fd Inc-Senior Secured	1	6,500,805	6,357,761
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,808,368	4,467,772	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05400F-AC-5	Avolon Aerospace Funding Senior Secured	1	4,808,368	4,467,772
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,200,000	5,469,469	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				393154-L8-6	Green Mountain Power Cor First Mtg Bond	1	5,200,000	5,469,469
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,634,263	27,299,222	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				45866F-AH-7	Intercontinental Exchang-SENIOR UNSECURED	1	36,634,263	27,299,222

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,842,660	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				55819D-AE-6	Madison Park Funding XXX-MDPK 2018-31A A2A	1	20,000,000	19,842,660
57629*FP1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		106,999,997	93,675,116	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	106,999,997	93,675,116
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		150,000,000	(70,652,617)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	55,510	(77,085,518)		90312*-AC-8	UNS Gas, Inc. Gtd Senior Note	1	6,500,000	6,432,901
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,671,199	3,628,686	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				63080#-AA-5	NARA Caves Lease Trust Lease Backed Ce	1	3,671,199	3,628,686
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,400,000	5,083,160	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				479142-E#-4	Johnson Matthey PLC Series B Senior Notes	1	5,400,000	5,083,160
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,982,118	3,688,022	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05400F-AA-9	Avolon Aerospace Funding Senior Secured	1	3,982,118	3,688,022
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		419,773	416,312	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05577@-AN-0	BTMU Capital Corp. Equipment Note	1	419,773	416,312
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,117,229	19,363,219	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				06761T-AG-7	Barings Middle Market CI-BMM 2019-1A B	1	19,117,229	19,363,219
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,061,561	4,137,161	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				589331-AD-9	MERCK SHARP & DOHME CORP-DEBENTURE	1	4,061,561	4,137,161
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		929,238	888,783	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05348E-AW-9	AVALONBAY COMMUNITIES IN-SR UNSECURED	1	929,238	888,783
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,070,448	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				74264*-AD-8	PRISA LHC LLC-SENIOR NOTE SER B	1	4,500,000	4,070,448
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,135,592	4,677,250	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				89236T-DR-3	Toyota Motor Credit Corp-SENIOR UNSECURED	1	5,135,592	4,677,250
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,870,527	3,726,423	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				18468P-A#-7	Clearbridge Energy MLP Op Fd Inc-Senior Secured	1	3,870,527	3,726,423
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,888,366	10,765,218	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				74980X-AC-0	ALM Ltd/KY-PRAM 2021-15A A2	1	10,888,366	10,765,218
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,767,648	3,619,538	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				18468Q-A#-5	Clearbridge Energy MLP Fd Inc-Senior Secured	1	3,767,648	3,619,538
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,250,000	9,045,936	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				64131T-AS-3	Neuberger Berman CLO XVI-SERIES 2017 CALSS 16SA	1	9,250,000	9,045,936
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		500,000	500,000	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				84519#-AF-1	Southwest Power Pool, In Senior Note Ser	1	500,000	500,000
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,304,050	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				03329F-AN-4	Anchorage Capital CLO 15-ANCHC 2020-15A AR	1	50,000,000	49,304,050
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,000,000	20,807,031	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				97316D-AA-4	Wind River CLO Ltd-WINDR 2021-3A A	1	21,000,000	20,807,031
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,425,000	6,319,437	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				08180X-AQ-5	Benefit Street Partners -BSP 2015-8A A1BR	1	6,425,000	6,319,437
57629*F09	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,450,000	2,392,258	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				04018X-AG-4	ARES CLO-ARES 2021-ALFA C	1	2,450,000	2,392,258
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		300,000,000	25,091,957	(143,749,533)	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared	116,110	(170,100,566)	244199-AW-5	Deere & Co-BOND	1	24,975,847	26,351,033
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,465,000	40,429,125	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				Z22066-36-8	AUST & NZ BANKING GROUP-SUBORDINATED NOTE	1	21,465,000	40,429,125
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,820,962	38,753,803	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				873050-CB-5	TTX CO-UNSECURED NOTE	1	41,820,962	38,753,803
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,101,475	31,347,534	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				594918-CB-8	MICROSOFT CORP-SENIOR UNSECURED	1	36,101,475	31,347,534
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		137,343,949	137,343,949	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				48275@-AL-9	KREF Lending VII LLC - Term Loan Series 2022-11	1	137,343,949	137,343,949
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,375,000	50,375,000	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				69325*-AC-7	PORED II HOLDING I LLC, PORED II HOLDING II OFFSHORE LP and PORED III HOLDCO ARGUS S.A.R.L.,-Term Loan Series 2022-4	1	50,375,000	50,375,000

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STATEMENT AS OF SEPTEMBER 30, 2023 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*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		69,519,000	68,756,863	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				46655H-AB-9	JCP Direct Lending CLO 2-JCPDL 2022-11 A	1	69,519,000	68,756,863
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		64,000,000	59,701,568	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				18685E-AA-0	Cliffwater Corporate Len Senior Secured Notes	1	64,000,000	59,701,568
57629*FT3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	11,000,000	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				51513E-AA-9	Landmark Equity Partners XVI-D, LLC	1	11,000,000	11,000,000
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	13,868,645	(72,575,930)	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared	58,170	(85,516,130)		662325-BE-7	North Shore Gas Co. First Mtg Bond	1	13,810,475	12,940,200
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,300,000	12,795,265	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				G1108F-AG-3	British Land Company PLC Senior Note Ser	1	13,300,000	12,795,265
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,400,000	11,451,474	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				720186-F*-1	Piedmont Natural Gas Co. Senior Note Ser	2	12,400,000	11,451,474
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,112,464	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				41242*-AT-9	Hardwood Funding LLC Senior Note Ser	1	11,600,000	11,112,464
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,534,615	10,012,509	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				48661E-C#-3	Kayne Anderson Midstream SER I SR UNSECD NT	1	10,534,615	10,012,509
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,250,000	10,625,603	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				151515-XX-6	Bridge Investment Group Senior Secured Notes	1	11,250,000	10,625,603
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,925,000	9,298,564	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				74170*-AE-9	Prime Property Fund LLC Senior Note Ser	1	9,925,000	9,298,564
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,722,130	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				57169*-AT-4	Mars, Inc. Senior Note Ser	1	10,000,000	9,722,130
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,600,000	8,482,662	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				05237*-AG-9	Austin Powder Holdings C Senior Note Ser	1	8,600,000	8,482,662
57629*FU0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		105,999,997	92,799,647	07/14/2023	07/14/2050	SOFR Replacement Swap - CME cleared				G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	105,999,997	92,799,647
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	117,195,112	(12,688,778)	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared	92,673	(129,114,796)		11702E-AA-4	Brunswick Asset Financing LLC - Term A Loan	1	117,102,439	116,426,018
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		61,000,000	61,000,000	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				51513E-AA-9	Landmark Equity Partners XVI-D, LLC	1	61,000,000	61,000,000
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	27,115,890	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				06759X-AA*-8	Barings Corporate Invest Convertible Not	1	30,000,000	27,115,890
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,500,000	25,396,355	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				68233J-AA*-5	Oncor Electric Delivery & Senior Secured	1	26,500,000	25,396,355
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,200,000	11,983,712	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				Q1297#-AK-4	CSL Finance Pty Ltd Gtd Senior Note	1	13,200,000	11,983,712
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,457,951	39,109,110	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				20030N-AM-3	Comcast Corp-NOTE	1	41,457,951	39,109,110
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,045,000	2,018,045	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				056162-AQ-3	Babson CLO Ltd 2015-I-BABSN 2015-IA BR	1	2,045,000	2,018,045
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,900,000	17,096,959	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				03464A-AA*-1	Angel Oak Financial Stra Senior Note Series A	1	18,900,000	17,096,959
57629*FK2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,376,000	15,459,206	09/05/2023	09/02/2050	SOFR Replacement Swap - CME cleared				05707#-AA-9	Baird Financial Corporat Senior Secured Notes	1	16,376,000	15,459,206
57629*HL8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	263,072,173	146,091,254	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared	72,180	(84,156,928)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	262,999,993	230,248,182
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	6,704,251	(57,045,095)	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared	54,251	(63,605,553)		55954Y-AL-9	Magnetite XXVI Ltd-MAGNE 2020-26A BR	1	6,650,000	6,560,458
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,550,000	6,399,579	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared				00190Y-BH-7	Ares XXVII CLO Ltd-ARES 2013-2A CR2	1	6,550,000	6,399,579
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,216,506	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared				278300-AN-8	Eaton Vance CLO 2020-1 L-EATON 2020-1A CR	1	6,400,000	6,216,506
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,317,286	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared				143133-AG-1	CGMS 2021-6A C	1	6,400,000	6,317,286
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,242,208	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared				87168B-AG-5	SYMP 2021-28A C-SYMP 2021-28A C	1	6,400,000	6,242,208

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STATEMENT AS OF SEPTEMBER 30, 2023 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*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,333,466	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			12565E-AE-1	CIFC Funding Ltd-CIFC 2021-5A C	1	6,400,000	6,333,466
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,043,757	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			97316J-AG-8	THL Credit Wind River 20-WINDR 2019-1A CR	1	6,400,000	6,043,757
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,216,301	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			05685A-AJ-7	Bain Capital Credit CLO-BCC 2021-4A C	1	6,400,000	6,216,301
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,261,760	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			38136N-AU-0	Goldentree Loan Managem-GLM 2020-8A CR	1	6,400,000	6,261,760
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,100,000	5,997,185	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			00900L-AS-3	AIMCO CLO Series 2015-A-AIMCO 2015-AA CR2	1	6,100,000	5,997,185
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,050,000	5,966,867	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			05685A-AG-3	Bain Capital Credit CLO-BCC 2021-4A B	1	6,050,000	5,966,867
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,050,000	5,987,697	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			00119V-AQ-2	AGL CLO 6 LTD-AGL 2020-6A BR	1	6,050,000	5,987,697
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,700,000	5,602,901	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			13887T-AN-7	Canyon Capital CLO 2019-CANVC 2019-1A BR	1	5,700,000	5,602,901
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,552,617	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			670881-AP-6	OCF CLO 2020-19 Ltd-OCF 2020-19A BR	1	5,650,000	5,552,617
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,625,000	5,600,987	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			03766G-AS-1	Apidos CLO XXVI-APID 2017-26A BR	1	5,625,000	5,600,987
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,300,000	5,265,555	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			48253U-AC-0	KKR-SERIES 34A CLASS B	1	5,300,000	5,265,555
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,300,000	5,200,053	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			08627F-AQ-3	BlueMountain CLO XXV Ltd-BLUEM 2019-25A BR	1	5,300,000	5,200,053
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,150,000	5,022,795	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			95023A-AC-4	Wellfleet CLO Ltd-WELF 2021-2A B	1	5,150,000	5,022,795
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,125,000	5,014,613	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			14317Y-AG-9	Carlyle Global Market St-SERIES 21-5A CLASS C	1	5,125,000	5,014,613
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,650,000	4,603,058	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			48661A-AL-0	KAYNE CLO I Ltd-KAYNE 2018-1A BR	1	4,650,000	4,603,058
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,600,000	4,498,363	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			29002V-AE-8	ELM10 2021-3A C-ELM10 2021-3A C	1	4,600,000	4,498,363
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,600,000	4,559,456	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			67110N-AP-0	QHA Credit Partners XIII-OAKC 2016-13A BR	1	4,600,000	4,559,456
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,367,322	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			73052V-AG-0	Point Au Roche Park CLO -PARPK 2021-1A C	1	4,500,000	4,367,322
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,242,155	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			83615P-AE-7	Sound Point Clo XXXI Ltd-SNDPT 2021-3A C	1	4,500,000	4,242,155
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,457,363	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			29002H-AQ-2	Elmwood CLO III Ltd-ELMW3 2019-3A CR	1	4,500,000	4,457,363
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,432,451	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			33835N-AE-1	ASSURANT CLO LTD-MORGN 2018-3A CR	1	4,500,000	4,432,451
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,330,922	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			97316D-AG-1	Wind River CLO Ltd-WINDR 2021-3A C	1	4,500,000	4,330,922
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,400,000	4,259,477	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			48255A-AE-8	KKR CLO 36 Ltd-KKR 36A C	1	4,400,000	4,259,477
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,300,000	4,214,396	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			125550-AU-0	CIFC Funding 2020-I Ltd-CIFC 2020-1A CR	1	4,300,000	4,214,396
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,778,410	7,892,789	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			48253W-AA-0	KKR CLO 28 LTD-KKR 28A A	1	7,778,410	7,892,789
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,827,425	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	5,000,000	4,827,425
57629*H07	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,000,000	20,289,625	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared			886756-AB-3	Tiger Global Management Senior Note Series B	1	25,000,000	20,289,625

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STATEMENT AS OF SEPTEMBER 30, 2023 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*HC7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	16,000,000	07/10/2023	07/08/2051	SOFR Replacement Swap - CME cleared				186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	16,000,000	16,000,000
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	350,000,000	48,576,535	(102,400,126)	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared	108,591	(151,155,185)		14316W-AA-7	Carlyle Global Market St-CGMS 2021-7A A1	1	48,467,944	48,755,059
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		48,500,000	48,187,224	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				12547L-AL-2	CIFC Funding 2020-II Ltd-CIFC 2020-2A AR	1	48,500,000	48,187,224
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,100,000	44,897,817	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				05876L-AA-1	Ballyrock CDO Ltd-BALLY 2021-17A A1A	1	45,100,000	44,897,817
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,400,299	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				87168B-AE-0	SYMP-SYMP 2021-28A B	1	13,700,000	13,400,299
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,417,150	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				97316D-AC-0	Wind River CLO Ltd-WINDR 2021-3A B1	1	13,700,000	13,417,150
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,074,622	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				13876G-AL-2	Canyon Capital CLO 2017-CANVC 2017-1A BR	1	9,200,000	9,074,622
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,070,041	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				03330N-AK-0	Anchorage Capital Clo 11-ANCHC 2019-11A BR	1	9,200,000	9,070,041
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,087,291	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				03328W-AU-2	Anchorage Capital CLO 9-ANCHC 2016-9A BR2	1	9,200,000	9,087,291
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,045,578	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				14316W-AC-3	Carlyle Global Market St-CGMS 2021-7A A2	1	9,200,000	9,045,578
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,012,403	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				12547L-AQ-1	CIFC Funding 2020-II Ltd-CIFC 2020-2A BR	1	9,200,000	9,012,403
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,077,695	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				04018X-AE-9	ARES CLO-ARES 2021-ALFA B	1	9,200,000	9,077,695
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,046,167	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				25255L-AC-6	Diameter Capital Clo 2 L-DCLO 2021-2A A2	1	9,200,000	9,046,167
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,053,748	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				125550-AS-5	CIFC Funding 2020-I Ltd-CIFC 2020-1A BR	1	9,200,000	9,053,748
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,070,446	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				48253H-AQ-8	KKR CLO 26 Ltd-KKR 26 BR	1	9,200,000	9,070,446
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,100,000	8,854,346	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				86271P-AG-0	Strata CLO II Ltd-STRTA 2021-1A C	1	9,100,000	8,854,346
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,725,000	8,566,833	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				38136N-AS-5	GoldenTree Loan Managem-GLM 2020-8A BR	1	8,725,000	8,566,833
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,911,373	17,156,330	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				13876N-AN-3	Canyon CLO 2020-2 Ltd-CANVC 2020-2A BR	1	16,911,373	17,156,330
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,800,000	7,686,518	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				143133-AE-6	CGMS 2021-6A B-CGMS 2021-6A B	1	7,800,000	7,686,518
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,375,000	7,268,512	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				13877P-AC-1	CANVC-2021-4A B	1	7,375,000	7,268,512
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,300,000	7,126,253	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				13875M-AE-6	Canyon CLO 2021-3 Ltd-CANVC 2021-3A C	1	7,300,000	7,126,253
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,300,000	7,233,957	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				12551J-AN-6	CIFC Funding 2017-IV Ltd-CIFC 2017-4A A2R	1	7,300,000	7,233,957
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,200,000	7,027,718	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				97315V-AE-7	Wind River CLO Ltd-WINDR 2021-2A B	1	7,200,000	7,027,718
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,100,000	7,023,398	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				04019L-AN-4	ARES LI CLO Ltd-ARES 2019-51A BR	1	7,100,000	7,023,398
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,040,000	6,906,930	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				03328W-AW-8	Anchorage Capital CLO 9-ANCHC 2016-9A CR2	1	7,040,000	6,906,930
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,851,411	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				61773K-AC-6	Morgan Stanley Eaton Van-MSEV 2021-1A B	1	7,000,000	6,851,411
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,927,830	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				00901A-AL-1	AIMCO CLO 10 Ltd-AIMCO 2019-10A BR	1	7,000,000	6,927,830

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STATEMENT AS OF SEPTEMBER 30, 2023 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*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,800,000	6,695,817	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				03762Y-AH-0	Apidos Clo XXV-APID 2016-25A A2R	1	6,800,000	6,695,817
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,617,660	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				50204A-AE-6	LOM LP-LOM 32A B	1	6,750,000	6,617,660
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,885,145	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				48251M-AS-5	KKR CLO 15 Ltd-KKR 15 A2R	1	15,000,000	14,885,145
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,912,745	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				55952Y-AR-8	Magnetite VIII Ltd-MAGNE 2014-8A BR2	1	15,000,000	14,912,745
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,365,955	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				48252W-AC-7	KKR CLO LTD 22-SERIES 22A CLASS B Stonehenge OH Rural Fund II LLC	1	9,500,000	9,365,955
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,884,136	7,984,247	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				86209*-AA-6	Series 2021B-1	1	8,884,136	7,984,247
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,222,491	7,183,531	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				86208*-AA-3	Stonehenge Cap Fund Conn VI Series 2021B-1	1	8,222,491	7,183,531
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,666,667	6,691,334	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				87289B-AB-0	TOP DLF VIII 2018 CLO, LLC - Class A-2 Secured Floating Rate Note	1	6,666,667	6,691,334
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,063,868	5,562,544	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				46655H-AH-6	JCP Direct Lending CLO 2-JCPDL 2022-11 D	1	6,063,868	5,562,544
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,547,901	4,257,859	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				46655H-AF-0	JCP Direct Lending CLO 2-JCPDL 2022-11 C	1	4,547,901	4,257,859
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,390,224	7,941,515	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				46655H-AD-5	JCP Direct Lending CLO 2-JCPDL 2022-11 B	1	8,390,224	7,941,515
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,624,621	1,537,454	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				86208B-AA-5	Stonehenge Capital Fund South Carolina IV, LLC Senior Structured Notes	1	1,624,621	1,537,454
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,666,667	2,715,734	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				87289B-AD-6	TOP DLF VIII 2018 CLO, LLC - Class B Secured Floating Rate Note	1	2,666,667	2,715,734
57629*HC8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,222,223	2,232,445	07/10/2023	07/09/2051	SOFR Replacement Swap - CME cleared				87289B-AE-4	TOP DLF VIII 2018 CLO, LLC - Class C Secured Floating Rate Note	1	2,222,223	2,232,445
57629*HM6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	268,054,071	145,992,862	07/12/2023	07/12/2051	SOFR Replacement Swap - CME cleared	54,078	(88,632,662)		G5695H-AA-6	MM Investment Holding Revolver Floating Line	2	267,999,993	234,625,524
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	350,000,000	50,121,250	(109,092,867)	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared	121,250	(158,290,217)		83615P-AA-5	Sound Point Clo XXXI Ltd-SNDPT 2021-3A A	1	50,000,000	49,197,350
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,350,200	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				95023A-AA-8	Wellfleet CLO Ltd-WELF 2021-2A A1	1	50,000,000	49,350,200
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,771,000	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				69702E-AA-3	Palmer Square CLO Ltd-PLMRS 2021-4A A	1	50,000,000	49,771,000
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,595,650	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				03328J-AA-5	Anchorage Capital CLO 19-ANCHC 2021-19A A	1	50,000,000	49,595,650
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,326,050	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				42088A-AA-2	Hayfin US XII Ltd-HAYFN 2021-14A A1	1	50,000,000	49,326,050
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,996,430	59,849,092	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				87168B-AC-4	SYMP-SYMP 2021-28A A	1	59,996,430	59,849,092
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	49,748,750	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				67110N-AM-7	OHA Credit Partners XIII-OAKC 2016-13A AR	1	50,000,000	49,748,750
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,312,500	14,023,846	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				70470M-AE-5	Peace Park CLO Ltd-POEPK 2021-1A B1	1	14,312,500	14,023,846
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,090,000	13,823,234	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				55822A-AN-7	Madison Park Funding XLV-MDPK 2020-46A B1R	1	14,090,000	13,823,234
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,788,730	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				13876R-AE-4	Canyon CLO 2020-3 Ltd-CANYC 2020-3A B	1	10,000,000	9,788,730
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,916,810	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				69703P-AC-3	Palmer Square CLO 2018-1-PLMRS 2018-1A A2	1	10,000,000	9,916,810
57629*HB0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,830,060	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				13876X-AG-6	Canyon Capital CLO Ltd-CANYC 2021-2A B1	1	10,000,000	9,830,060

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STATEMENT AS OF SEPTEMBER 30, 2023 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*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,945,564	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				94949R-AW-7	Wellfleet CLO 2016-1 Ltd-WELF 2016-1A CR	1	4,000,000	3,945,564
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,895,220	3,975,436	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				25255L-AA-0	Diameter Capital Clo 2 L-DCLO 2021-2A A1	1	3,895,220	3,975,436
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,050,000	3,996,082	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				00120B-AE-0	AGL CLO Ltd-AGL 2021-12A B	1	4,050,000	3,996,082
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,885,000	3,791,927	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				83012K-AE-7	SIXST-SERIES 2021-19A CLASS C	1	3,885,000	3,791,927
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,750,000	3,711,585	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				74980Q-AE-1	ALM Ltd/KY-BRAM 2021-17A A2	1	3,750,000	3,711,585
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,550,000	3,526,055	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				26251B-AN-6	Dryden XXVIII Senior Loa-DRSLF 2013-28A A2LR	1	3,550,000	3,526,055
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,600,000	3,554,010	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				67110N-AT-2	QHA Credit Partners XIII-OAKC 2016-13A CR	1	3,600,000	3,554,010
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,600,000	3,519,986	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				92918Q-AG-5	Voya CLO Ltd-VOYA 2021-1A C	1	3,600,000	3,519,986
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,525,000	3,339,303	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				94950A-AS-9	Wellfleet CLO 2020-2 Ltd-WELF 2020-2A CR	1	3,525,000	3,339,303
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,500,000	3,427,445	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				55821L-AE-4	Madison Park Funding XXX-MDPK 2021-39A C	1	3,500,000	3,427,445
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,500,000	3,391,420	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				13876N-AS-2	Canyon CLO 2020-2 Ltd-CANYC 2020-2A CR	1	3,500,000	3,391,420
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	2,920,911	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				05684A-AU-3	Bain Capital Credit Clo -BCC 2019-4A CR	1	3,000,000	2,920,911
57629*H0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,800,000	2,717,551	07/21/2023	07/21/2051	SOFR Replacement Swap - CME cleared				27829P-AS-5	Eaton Vance CLO 2020-2 L-EATON 2020-2A CR	1	2,800,000	2,717,551
57629*H4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	267,053,105	145,420,522	08/09/2023	08/09/2051	SOFR Replacement Swap - CME cleared	53,112	(88,329,533)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	266,999,993	233,750,055
57629*H9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	300,000,000	400,079,628	217,815,209	08/09/2023	08/09/2051	SOFR Replacement Swap - CME cleared	79,639	(132,372,140)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	399,999,989	350,187,349
57629*H9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	331,076,702	182,091,183	08/10/2023	08/10/2051	SOFR Replacement Swap - CME cleared	76,711	(107,688,848)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	330,999,991	289,780,031
57629*H7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	265,061,346	145,913,196	08/10/2023	08/10/2051	SOFR Replacement Swap - CME cleared	61,353	(86,085,922)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	264,999,993	231,999,118
57629*HJ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	300,000,000	396,092,066	217,361,123	08/10/2023	08/10/2051	SOFR Replacement Swap - CME cleared	92,076	(129,324,352)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	395,999,990	346,685,475
57629*HK0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	332,076,864	182,274,366	08/10/2023	08/10/2051	SOFR Replacement Swap - CME cleared	76,873	(108,381,133)		G5695#-AA-6	MM Investment Holding Revolver Floating Line	2	331,999,991	290,655,499
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	15,396,244	(74,406,684)	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared	52,401	(89,527,013)		48252#-AA-8	KKR Eagle Asset Term Loan A PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-3	1	15,343,843	15,120,329
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,325,000	41,325,000	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				69325*-AB-9	PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-1	1	41,325,000	41,325,000
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,050,496	41,050,496	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				69325*-AA-1	PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-1	1	41,050,496	41,050,496
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,728,070	23,806,373	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				87241F-AB-8	TOW Direct Lending Structured Solutions 2019 LLC - Class B Note	2	23,728,070	23,806,373
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,990,789	26,990,789	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				67080B-A*-8	NXT Capital Structured Note I, LLC - Class A Secured Float Rate Revolving Loan	1	26,990,789	26,990,789
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	12,000,000	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				70216*-AA-1	PARTNERS GROUP PRIVATE EQUITY II, LLC - Senior Secured Revolving Facility	1	12,000,000	12,000,000

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STATEMENT AS OF SEPTEMBER 30, 2023 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*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,915,161	39,915,161	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				895326-AB-4	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2022-3	1	39,915,161	39,915,161
57629*LG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,795,410	25,519,834	08/23/2023	08/23/2051	SOFR Replacement Swap - CME cleared				22822R-BH-2	Crown Castle Towers LLC-SECURED CARLYLE SECURED LENDING III SPV, - Senior Secured Loan	1	27,795,410	25,519,834
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	204,377,590	68,000,000	42,308,929	11/23/2022	05/23/2024	TRS Bond Index		(25,691,071)		14318*-AA-6	Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2022-10	1	68,000,000	68,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		65,036,037	65,036,037	11/23/2022	05/23/2024	TRS Bond Index				46142F-AK-4	PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-7	2	65,036,037	65,036,037
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		68,150,000	68,150,000	11/23/2022	05/23/2024	TRS Bond Index				69325*-AE-3	Aimco CLO 12 Ltd-AIMCO 2020-12A AR Series 2022-7	1	68,150,000	68,150,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,915,996	9,915,040	11/23/2022	05/23/2024	TRS Bond Index				00140L-AG-9	CRE II LENDER SUB I, LLC - Term Loan Series 2022-2	1	9,915,996	9,915,040
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	269,184,783	24,670,083	(25,590,642)	12/13/2022	06/13/2024	TRS Bond Index		(50,260,725)		127816-AB-4	Twin Brook Capital Funding XIII WSPV, LLC	1	24,670,083	24,670,083
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		239,643,046	239,643,046	12/13/2022	06/13/2024	TRS Bond Index				901396-AA-1	Invesco CLO 2022-1 Ltd-INVCO 2022-1A A	1	239,643,046	239,643,046
Need to File with the NAIC	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,541,728	9,858,840	12/13/2022	06/13/2024	TRS Bond Index				460988-AA-6	Canal & River Trust Senior Note Ser	1	9,541,728	9,858,840
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	308,812,500	8,450,300	(15,192,761)	10/24/2022	11/28/2048	Currency Swap	(26,242,200)	(31,498,421)		G18196-AB-6	University of Stirling Senior Note Ser	1	34,692,500	16,305,660
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,044,000	7,801,343	10/24/2022	11/28/2048	Currency Swap				G9302*-AE-9	Paradigm Homes Charitabl Senior Secured	1	14,044,000	7,801,343
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		66,111,210	34,098,213	10/24/2022	11/28/2048	Currency Swap				G6892F-AA-5	Paradigm Homes Charitabl Senior Secured	1	66,111,210	34,098,213
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		40,912,520	23,469,966	10/24/2022	11/28/2048	Currency Swap				G6892F-AB-3	University of Lancaster Senior Note Ser	1	40,912,520	23,469,966
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,479,970	17,887,566	10/24/2022	11/28/2048	Currency Swap				G9308*-AA-1	University of Durham Senior Unsecured Notes	1	36,479,970	17,887,566
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,183,400	7,434,496	10/24/2022	11/28/2048	Currency Swap				G9309F-AA-6	University of East Angli Senior Unsecured Notes	1	14,183,400	7,434,496
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		92,959,911	51,293,412	10/24/2022	11/28/2048	Currency Swap				G92896-AB-1	Cambridge Housing Societ Senior Secured Notes Series B	1	92,959,911	51,293,412
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,874,000	24,009,104	10/24/2022	11/28/2048	Currency Swap				G1870*-AB-4	Cambridge Housing Societ Senior Secured Notes Series A	2	38,874,000	24,009,104
57629*HR5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,399,050	17,041,101	10/24/2022	11/28/2048	Currency Swap				G1870*-AA-6	College of Corpus Christ Senior Notes	2	28,399,050	17,041,101
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	258,992,600	(14,744,040)	(10,940,404)	10/26/2022	08/15/2052	Currency Swap	(21,013,040)	(14,391,351)		G2269F-AA-9	The Master, The Fellows Senior Notes	1	6,269,000	3,450,947
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,054,720	9,938,729	10/26/2022	08/15/2052	Currency Swap				G58796-AA-6	Network Homes Ltd Senior Secured Note	1	18,054,720	9,938,729
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		62,360,000	32,876,617	10/26/2022	08/15/2052	Currency Swap				G6428F-AH-2	Duchy of Lancaster Senior Note Series A	1	62,360,000	32,876,617
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,174,000	6,434,515	10/26/2022	08/15/2052	Currency Swap				G2034F-AB-1	LORD MAYOR & CITIZENS CITY WESTMINSTER GBP TERM LN ISSUED AUG 2019	2	12,174,000	6,434,515
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		181,230,000	82,939,404	10/26/2022	08/15/2052	Currency Swap				G5649*-AA-7	Forth Ports Finance plc Senior Secured	1	181,230,000	82,939,404
57629*HT1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,716,533	10,958,915	10/26/2022	08/15/2052	Currency Swap				G3646F-AB-9	Aroundtown SA Senior Unsecured Notes	2	14,716,533	10,958,915
57629*HS3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	213,608,440	72,992,770	51,939,340	10/26/2022	10/12/2033	Currency Swap	(15,299,480)	(14,471,671)		L0289F-AH-2	Segro plc Senior Note Series B Capital Investors Europe PBI Limited - Series B Senior Note	2	88,292,250	66,411,011
57629*HS3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,825,500	12,864,552	10/26/2022	10/12/2033	Currency Swap				G7996F-AE-0	Capital Investors Europe PBI Limited - Series B Senior Note	1	17,825,500	12,864,552
57629*HS3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		153,657,000	95,857,123	10/26/2022	10/12/2033	Currency Swap				G1847F-AB-0	Capital Investors Europe PBI Limited - Series B Senior Note	1	153,657,000	95,857,123

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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*HU8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	108,755,400	34,692,041	17,986,064	10/27/2022	11/27/2043	Currency Swap	(7,079,540)	(5,932,607)	G5560*AB-0	London School Of Econom Senior Note Ser	1	41,771,581	23,918,671
57629*HU8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,315,661	5,280,069	10/27/2022	11/27/2043	Currency Swap			G18198-AA-8	Canal & River Trust Senior Note Ser	1	10,315,661	5,280,069
57629*HU8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,839,474	16,284,077	10/27/2022	11/27/2043	Currency Swap			G9302*AD-1	University of Stirling Senior Note Ser	1	27,839,474	16,284,077
57629*HU8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		53,888,086	29,059,487	10/27/2022	11/27/2043	Currency Swap			G4R1JK-AY-7	Heathrow Funding Limited Senior Secured Notes Class A	2	53,888,086	29,059,487
57629*HV6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	61,752,000	63,078,800	38,705,885	10/27/2022	02/22/2050	Currency Swap	(3,831,600)	(1,160,811)	B1401#AE-7	Brussels Airport Company Senior Secured Notes	2	66,910,400	39,866,696
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	207,703,020	(2,036,780)	(2,613,770)	10/27/2022	12/19/2028	Currency Swap	(12,954,060)	(11,038,182)	G5264#AW-9	Kingspan Securities 2017 Gtd Senior Note	2	10,917,280	8,424,412
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,559,600	24,919,280	10/27/2022	12/19/2028	Currency Swap			N5084#AB-7	Koole Terminals Subholdr Senior Secured	2	31,559,600	24,919,280
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		29,205,000	25,005,043	10/27/2022	12/19/2028	Currency Swap			F4832#AA-4	Groupe Holder S.A.S. Bank Loan	2	29,205,000	25,005,043
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		97,344,300	78,366,273	10/27/2022	12/19/2028	Currency Swap			F8494#AB-2	Sodiaal International S. Senior Unsecured Notes	2	97,344,300	78,366,273
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,900,400	26,203,369	10/27/2022	12/19/2028	Currency Swap			N5946*AB-7	NSI N V EURO LN FAC	2	31,900,400	26,203,369
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,790,400	13,077,369	10/27/2022	12/19/2028	Currency Swap			479142-E*-8	Johnson Matthey PLC Senior Note Series C	1	15,790,400	13,077,369
57629*HI4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,807,070	22,232,854	10/27/2022	12/19/2028	Currency Swap			N2319#AD-7	Corbion N.V. Senior Subordinated Debt	2	26,807,070	22,232,854
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	241,672,900	(2,655,590)	(7,537,435)	10/27/2022	09/12/2030	Currency Swap	(15,507,520)	(16,263,751)	G1744#AT-5	Cadogan Estates Ltd Gtd Senior Note	2	12,851,930	8,726,316
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		27,964,915	19,311,918	10/27/2022	09/12/2030	Currency Swap			G5304*AA-3	Knowsley Housing Trust Senior Secured	2	27,964,915	19,311,918
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		101,153,632	69,141,986	10/27/2022	09/12/2030	Currency Swap			G7496*AC-3	RIT Capital Partners plc Senior Note Ser	2	101,153,632	69,141,986
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		30,505,673	22,227,196	10/27/2022	09/12/2030	Currency Swap			G8302#AC-9	University of West Londo Senior Secured	2	30,505,673	22,227,196
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		7,339,113	5,383,054	10/27/2022	09/12/2030	Currency Swap			G7737#AC-8	SGN MidCo Limited Gtd Senior Secu	2	7,339,113	5,383,054
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,556,164	7,807,739	10/27/2022	09/12/2030	Currency Swap			G2685#AH-2	Great Portland Estates Senior Note Ser	2	10,556,164	7,807,739
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		59,852,442	48,200,510	10/27/2022	09/12/2030	Currency Swap			G9720#AA-7	Wireless Infrastructure Senior Secured Notes	2	59,852,442	48,200,510
57629*HX2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		46,725,864	35,583,605	10/27/2022	09/12/2030	Currency Swap			G7445#AA-5	Red Funnel Ferry Senior Term Loa	2	46,725,864	35,583,605
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	337,502,600	14,551,204	5,487,068	10/28/2022	10/26/2041	Currency Swap	(16,715,520)	(13,258,805)	G9302#AB-3	University of Edinburgh Senior Note Ser	1	31,266,724	18,745,873
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,511,748	10,268,475	10/28/2022	10/26/2041	Currency Swap			G1128*AC-2	BIRMINGHAM ARPT FIN PLC SR NT	2	18,511,748	10,268,475
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		40,914,750	21,175,771	10/28/2022	10/26/2041	Currency Swap			G7896*AA-3	Scottish Oriental Smaller Senior Unsecured Notes	1	40,914,750	21,175,771
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		44,271,782	29,343,699	10/28/2022	10/26/2041	Currency Swap			G2493#AA-7	Crail Meters Limited - Term Loan	2	44,271,782	29,343,699
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,429,553	7,348,890	10/28/2022	10/26/2041	Currency Swap			G9000#AG-5	Tottenham Hotspur Stadiu Gtd Senior Secured Note Series C	2	13,429,553	7,348,890
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		103,134,310	45,180,495	10/28/2022	10/26/2041	Currency Swap			G0892#AB-6	Bazalgette Tunnel Limite Senior Secured Notes	2	103,134,310	45,180,495
57629*HY0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		136,382,500	69,437,802	10/28/2022	10/26/2041	Currency Swap			G9160#AB-4	UK Power Networks Servic Senior Unsecured Notes	2	136,382,500	69,437,802
57629*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	174,033,900	25,718,137	13,795,694	10/28/2022	12/02/2040	Currency Swap	(8,934,040)	(7,108,057)	G5304*AC-9	Knowsley Housing Trust Senior Secured	2	34,652,177	20,903,751
57629*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		67,267,913	36,113,450	10/28/2022	12/02/2040	Currency Swap			G5258#AB-3	King's College, London Senior Note Ser	1	67,267,913	36,113,450
57629*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,309,332	8,523,852	10/28/2022	12/02/2040	Currency Swap			G7228#AB-6	PPRES & SCHOLARS ST MARY MAGDALEN SR NT SER B	1	15,309,332	8,523,852

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STATEMENT AS OF SEPTEMBER 30, 2023 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*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,423,834	12,717,966	10/28/2022	12/02/2040	Currency Swap				G68538-AC-0	Oxford Brookes Universit Senior Note Ser	2	20,423,834	12,717,966
57629*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,392,372	7,639,403	10/28/2022	12/02/2040	Currency Swap				G9000#-AB-6	Tottenham Hotspur Limite Senior Secured Note Series B	2	12,392,372	7,639,403
57629*HZ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		64,533,900	34,215,927	10/28/2022	12/02/2040	Currency Swap				G7895*-AH-9	Scottish Mortgage Invest Senior Unsecured Notes	1	64,533,900	34,215,927
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	294,033,600	(186,180)	104,471	10/27/2022	06/27/2029	Currency Swap	(14,526,660)	(12,193,280)		G294A#-AH-2	Dyson Finance Limited Gtd Senior Note	1	14,340,480	12,297,751
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		17,823,520	15,212,339	10/27/2022	06/27/2029	Currency Swap				B1401#-AB-3	Brussels Airport Company Senior Secured	2	17,823,520	15,212,339
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,068,040	21,385,015	10/27/2022	06/27/2029	Currency Swap				48021P-AB-7	Jones Lang LaSalle Finan Gtd Senior Note	2	26,068,040	21,385,015
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		45,832,540	38,541,406	10/27/2022	06/27/2029	Currency Swap				N9146#-AE-7	Van Oord NV - EUR Term Loan	2	45,832,540	38,541,406
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		135,240,840	116,500,989	10/27/2022	06/27/2029	Currency Swap				F2977#-AA-3	Elis S.A. Senior Note Series A	2	135,240,840	116,500,989
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		67,994,280	55,169,216	10/27/2022	06/27/2029	Currency Swap				F8568#-AF-6	Sonepar S.A. Senior Note Series C Bidcorp Foodservice Inte Senior	2	67,994,280	55,169,216
57629*JA0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,856,400	15,878,546	10/27/2022	06/27/2029	Currency Swap				G1267*-AB-5	Unsecured Notes	2	18,856,400	15,878,546
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	144,459,719	14,167,222	8,215,181	10/28/2022	09/27/2042	Currency Swap	(7,154,669)	(5,703,102)		G7137#-AC-4	Plymouth Community Homes Senior Secured	1	21,321,891	13,918,283
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,645,086	28,090,421	10/28/2022	09/27/2042	Currency Swap				G9303#-AC-8	University of Glasgow Senior Note Ser	1	50,645,086	28,090,421
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,637,893	17,224,013	10/28/2022	09/27/2042	Currency Swap				G9304*-AA-5	University of Birmingham Senior Unsecure	1	30,637,893	17,224,013
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,291,962	17,039,186	10/28/2022	09/27/2042	Currency Swap				G9306#-AB-7	University of Keele Senior Note Ser	1	27,291,962	17,039,186
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,670,068	10,341,470	10/28/2022	09/27/2042	Currency Swap				G8279#-AB-4	South East Water Limited Gtd Senior Secured Note Series 2	2	17,670,068	10,341,470
57629*JB8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,060,408	7,557,947	10/28/2022	09/27/2042	Currency Swap				G5383*-AD-1	Last Mile Infrastructure Senior Secured Notes	2	13,060,408	7,557,947
57629*JD4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	116,031,600	5,179,080	841,059	10/31/2022	06/28/2039	Currency Swap	(6,272,520)	(6,284,104)		G4622#-AP-4	Howard De Walden Estates Senior Unsecured Notes Series B	1	11,451,600	7,125,163
57629*JD4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		53,963,760	34,289,213	10/31/2022	06/28/2039	Currency Swap				G1608#-AA-1	Bromford Housing Group L Senior Secured Notes	1	53,963,760	34,289,213
57629*JD4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		63,390,000	41,449,318	10/31/2022	06/28/2039	Currency Swap				G6043#-AF-2	Metropolitan Housing Tru Senior Secured Notes	1	63,390,000	41,449,318
57629*JC6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	123,989,250	66,133,500	50,225,891	10/31/2022	03/31/2034	Currency Swap	(7,495,290)	(6,731,344)		G9006#-AD-8	Transmission Finance DAC Senior Secured	2	73,628,790	56,957,235
57629*JC6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		9,293,880	6,273,337	10/31/2022	03/31/2034	Currency Swap				D5472#-AQ-3	Molkerei Alois Muller GM Senior Note Series M	2	9,293,880	6,273,337
57629*JC6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		55,785,000	42,392,499	10/31/2022	03/31/2034	Currency Swap				D7002#-AB-3	Rheinkalk Holding GmbH Senior Note Series A-2034	2	55,785,000	42,392,499
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	166,457,590	18,814,783	11,815,735	10/31/2022	12/02/2035	Currency Swap	(9,150,132)	(6,261,581)		G5304*-AB-1	Knowsley Housing Trust Senior Secured	2	27,964,915	18,077,316
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		67,542,866	41,688,286	10/31/2022	12/02/2035	Currency Swap				G0746*-AA-0	Bankers Investment Trust Senior Note	1	67,542,866	41,688,286
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,309,332	9,282,820	10/31/2022	12/02/2035	Currency Swap				G7228#-AA-8	PPRES & SCHOLARS ST MARY MAGDALEN SR NT SER A	1	15,309,332	9,282,820
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,423,834	13,551,576	10/31/2022	12/02/2035	Currency Swap				G68538-AB-2	Oxford Brookes Universit Senior Note Ser	2	20,423,834	13,551,576
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		6,196,186	4,314,564	10/31/2022	12/02/2035	Currency Swap				G9000#-AA-8	Tottenham Hotspur Limite Senior Secured Note Series A	2	6,196,186	4,314,564
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		32,774,439	20,650,915	10/31/2022	12/02/2035	Currency Swap				G3122#-AD-0	ESPUG Finance Limited Senior Secured Notes	2	32,774,439	20,650,915
57629*JE2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		33,493,203	21,058,548	10/31/2022	12/02/2035	Currency Swap				G2685#-AL-3	Great Portland Estates P Senior Unsecured Notes	2	33,493,203	21,058,548
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	173,400,000	28,375,317	17,738,411	11/01/2022	12/14/2036	Currency Swap	(9,690,000)	(8,027,545)		G1512#-AA-8	AVI Global Trust PLC - Senior Note Series A GBP	1	38,065,317	25,765,956

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STATEMENT AS OF SEPTEMBER 30, 2023 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*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,937,683	15,516,920	11/01/2022	12/14/2036	Currency Swap				G9302*-AB-5	University of Stirling Senior Note Ser	1	22,937,683	15,516,920
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,920,441	12,769,778	11/01/2022	12/14/2036	Currency Swap				G4622*-AM-1	Howard De Walden Estates Gtd Senior Note	1	20,920,441	12,769,778
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		34,438,504	24,440,172	11/01/2022	12/14/2036	Currency Swap				G4410*-AB-5	Heriot Watt University Senior Unsecured	2	34,438,504	24,440,172
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,714,777	4,024,163	11/01/2022	12/14/2036	Currency Swap				G9000*-AF-7	Tottenham Hotspur Stadium Gtd Senior Secured Note Series B	2	6,714,777	4,024,163
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,442,413	12,445,213	11/01/2022	12/14/2036	Currency Swap				G4569*-AB-0	Hightown Housing Association Limited	1	18,442,413	12,445,213
57629*JF9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		61,431,693	41,205,379	11/01/2022	12/14/2036	Currency Swap				G4378*-AL-3	Heathrow Airport Limited Senior Secured Notes	2	61,431,693	41,205,379
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	191,094,020	5,742,060	1,315,999	11/01/2022	07/14/2032	Currency Swap	(11,897,900)	(11,690,368)		G1591*-BJ-0	Britvic PLC Senior Notes Series 0	2	17,639,860	13,006,367
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		34,682,040	24,850,342	11/01/2022	07/14/2032	Currency Swap				D5472*-AP-5	Molkerei Alois Muller GM Senior Note Series L	2	34,682,040	24,850,342
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		38,521,000	28,677,868	11/01/2022	07/14/2032	Currency Swap				F3152*-AJ-3	Ermewa Holding SAS Senior Secured Notes	2	38,521,000	28,677,868
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,623,000	12,543,165	11/01/2022	07/14/2032	Currency Swap				G2687*-AB-5	Dawsongroup plc Senior Note Series B	2	16,623,000	12,543,165
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		32,103,000	27,248,812	11/01/2022	07/14/2032	Currency Swap				N7660*-AY-3	SHV Holdings NV Guaranteed Notes	2	32,103,000	27,248,812
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,338,000	25,210,188	11/01/2022	07/14/2032	Currency Swap				479142*-F#-3	Johnson Matthey PLC Senior Notes Sustainability-Linked Series A	1	31,338,000	25,210,188
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,093,000	13,954,963	11/01/2022	07/14/2032	Currency Swap				F4832*-AC-0	Groupe Holder S.A.S. Senior Unsecured Notes	2	15,093,000	13,954,963
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,164,000	20,075,140	11/01/2022	07/14/2032	Currency Swap				243435*-B*-4	Decbra Pharmaceuticals P Senior Unsecured Notes	2	20,164,000	20,075,140
57629*JG7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,654,188	7,590,820	11/01/2022	07/14/2032	Currency Swap				G2044*-AA-5	Channel Link Enterprises Senior Secured	2	10,654,188	7,590,820
57629*JH5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	128,662,800	11,404,129	7,128,465	11/01/2022	10/06/2032	Currency Swap	(7,189,980)	(7,018,326)		G6774*-AD-6	Origin Housing Limited Senior Secured	1	18,594,109	14,146,791
57629*JH5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		61,921,860	45,003,243	11/01/2022	10/06/2032	Currency Swap				G0892*-AA-8	Bazalgette Tunnel Limite Senior Secured	2	61,921,860	45,003,243
57629*JH5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		33,182,500	23,843,902	11/01/2022	10/06/2032	Currency Swap				G3122#-AB-4	ESPUG Finance Limited Gtd Senior Secu	2	33,182,500	23,843,902
57629*JH5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,122,000	9,408,507	11/01/2022	10/06/2032	Currency Swap				G6970*-AX-4	Peel Ports PP Finance Lt Senior Secured Notes	2	12,122,000	9,408,507
57629*JH5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		17,812,080	17,447,179	11/01/2022	10/06/2032	Currency Swap				G2283*-AG-8	Colombo BidCo Limited Senior Secured Notes	2	17,812,080	17,447,179
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	310,627,067	857,369	(2,354,616)	11/01/2022	10/06/2037	Currency Swap	(16,509,601)	(14,387,998)		G5676*-AA-9	Lowland Investment Compa Senior Note	1	17,366,970	12,033,382
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		138,274,473	101,805,851	11/01/2022	10/06/2037	Currency Swap				G7304*-AD-9	Quadgas Midco Limited Fixed Rate Guar	2	138,274,473	101,805,851
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,512,234	15,378,081	11/01/2022	10/06/2037	Currency Swap				G7137*-AB-6	Plymouth Community Homes Senior Secured	1	21,512,234	15,378,081
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		27,535,600	18,532,216	11/01/2022	10/06/2037	Currency Swap				G8306*-AA-9	University of Keele Senior Note Ser	1	27,535,600	18,532,216
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		61,921,860	43,233,220	11/01/2022	10/06/2037	Currency Swap				G3620*-AA-1	ForCapital Limited Senior Secured	2	61,921,860	43,233,220
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		33,182,500	21,178,539	11/01/2022	10/06/2037	Currency Swap				G3122#-AC-2	ESPUG Finance Limited Gtd Senior Secu	2	33,182,500	21,178,539
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,177,000	8,345,145	11/01/2022	10/06/2037	Currency Swap				G5383*-AC-3	Last Mile Infrastructure Senior Secured Notes	2	13,177,000	8,345,145
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,940,847	2,522,400	11/01/2022	10/06/2037	Currency Swap				G2711*-AA-7	Coro Places Ltd. Senior Secured Notes	1	4,940,847	2,522,400
57629*JJ1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,574,894	16,810,776	11/01/2022	10/06/2037	Currency Swap				G3646*-AB-9	Forth Ports Finance plc Senior Secured	2	22,574,894	16,810,776
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	160,260,800	10,646,849	5,663,213	11/02/2022	11/24/2051	Currency Swap	(10,134,960)	(5,478,232)		G8300*-AB-0	University of Glasgow Senior Note Ser	1	20,781,809	11,141,445

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STATEMENT AS OF SEPTEMBER 30, 2023 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*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	75,010,375	31,034,522	11/02/2022	11/24/2051	Currency Swap				G9312*-AB-3	Vale of Aylesbury Housin Senior Secured Notes	1	75,010,375	31,034,522
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	2,644,126	1,512,057	11/02/2022	11/24/2051	Currency Swap				G6260#-AB-7	MORhones plc Senior Secured Notes	2	2,644,126	1,512,057
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	11,840,766	5,031,436	11/02/2022	11/24/2051	Currency Swap				G5744#-AA-7	Magna Housing Limited Senior Secured Notes	1	11,840,766	5,031,436
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	41,834,220	17,076,102	11/02/2022	11/24/2051	Currency Swap				G5702*-AA-1	MDS Group Investments Ltd Senior Unsecured Notes	1	41,834,220	17,076,102
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	32,598,720	14,556,024	11/02/2022	11/24/2051	Currency Swap				G5702*-AD-5	MDS Group Investments Ltd Senior Note Series D	1	32,598,720	14,556,024
57629*JK8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	128,513	65,608	11/02/2022	11/24/2051	Currency Swap				G2711*-AA-7	Curo Places Ltd. Senior Secured Notes	1	128,513	65,608
57629*JL6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	90,275,000	30,327,687	11/02/2022	11/17/2050	Currency Swap	(5,542,100)	(2,897,291)		G2034#-AA-3	Duchy of Lancaster Senior Unsecured Notes	2	35,869,787	14,748,968
57629*JL6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	66,709,181	25,568,335	11/02/2022	11/17/2050	Currency Swap				G6658#-AB-9	Northumberland Estates L Senior Unsecured Notes	1	66,709,181	25,568,335
57629*KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	56,197,920	36,315,200	11/02/2022	12/15/2035	Currency Swap	(3,885,120)	(3,943,098)		A8688#-AC-3	TIWAG-Tiroler Wasserkraf Senior Note	1	40,200,320	31,947,383
57629*KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	22,012,000	15,386,992	11/02/2022	12/15/2035	Currency Swap				F3152*-AK-0	Ernema Holding SAS Senior Secured Notes	2	22,012,000	15,386,992
57629*KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	5,327,094	3,795,410	11/02/2022	12/15/2035	Currency Swap				G2044*-AA-5	Channel Link Enterprises Senior Secured	2	5,327,094	3,795,410
57629*JN2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	73,143,945	24,815,865	11/02/2022	06/08/2036	Currency Swap	(5,080,365)	(4,976,948)		G1512#-AB-6	AVI Global Trust PLC - Senior Note Series B EUR	1	29,896,230	23,820,489
57629*JN2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	29,253,780	17,112,837	11/02/2022	06/08/2036	Currency Swap				F1000#-AC-2	Akiem Holding SAS Green Senior Notes Series A	2	29,253,780	17,112,837
57629*JN2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	26,950,950	15,377,991	11/02/2022	06/08/2036	Currency Swap				G1847#-AC-8	Capital Investors Europe PBI Limited - Series C Senior Note	1	26,950,950	15,377,991
57629*KL4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	34,573,000	20,846,000	11/02/2022	11/01/2037	Currency Swap	(2,450,000)	(2,485,185)		G1512#-AC-4	British Empire Securitie Senior Unsecure	1	23,296,000	16,310,282
57629*KL4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	16,509,000	11,113,199	11/02/2022	11/01/2037	Currency Swap				F3152*-AL-8	Ernema Holding SAS Senior Secured Notes	2	16,509,000	11,113,199
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	139,919,000	34,662,315	11/03/2022	11/14/2034	Currency Swap	(9,238,320)	(7,260,873)		G2479#-AB-3	Coventry University Senior Note Ser	1	43,900,635	30,043,038
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	12,611,417	8,952,956	11/03/2022	11/14/2034	Currency Swap				G4622#-AN-9	Howard De Walden Estates Senior Unsecured Notes Series A	1	12,611,417	8,952,956
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	21,527,026	16,098,938	11/03/2022	11/14/2034	Currency Swap				G6750*-AF-9	1887 Company Ltd Senior Secured Note Series F	2	21,527,026	16,098,938
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	10,181,112	7,067,061	11/03/2022	11/14/2034	Currency Swap				G4622#-AS-8	Howard De Walden Estates Senior Unsecured Notes Series E	1	10,181,112	7,067,061
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	63,265,959	43,276,897	11/03/2022	11/14/2034	Currency Swap				G6300#-AB-9	Moto Investments Limited Senior Secured Notes	2	63,265,959	43,276,897
57629*KK6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	12,014,743	8,869,891	11/03/2022	11/14/2034	Currency Swap				G6970*-AY-2	Peel Ports PP Finance Lt Senior Secured Notes	2	12,014,743	8,869,891
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	278,348,060	1,856,000	11/02/2022	11/30/2031	Currency Swap	(19,845,760)	(17,826,189)		X2145*-AD-8	Elenia Verkko Oyj Gtd Senior Note Americold Realty Trust Senior	2	21,701,760	17,324,692
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	42,847,000	29,097,523	11/02/2022	11/30/2031	Currency Swap				03063#-AD-6	Unsecured Notes	2	42,847,000	29,097,523
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	24,236,000	16,557,003	11/02/2022	11/30/2031	Currency Swap				D5472#-AL-4	Molkerei Alois Muller GM Senior Unsecured Notes	2	24,236,000	16,557,003
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	38,201,600	28,204,739	11/02/2022	11/30/2031	Currency Swap				F8494#-AC-0	Sodiaal International S. Senior Unsecured Notes	2	38,201,600	28,204,739
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	31,760,100	21,430,618	11/02/2022	11/30/2031	Currency Swap				LB367#-AG-8	Shurgard Self Storage S. Senior Unsecured Notes	2	31,760,100	21,430,618
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	56,590,000	43,406,611	11/02/2022	11/30/2031	Currency Swap				F9768#-AB-9	Vilmorin & Cie SA Senior Unsecured Notes	2	56,590,000	43,406,611
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	90,078,120	68,326,261	11/02/2022	11/30/2031	Currency Swap				F2000#-AA-6	C2 Developpement Senior Unsecured Notes	2	90,078,120	68,326,261
57629*KJ9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	25,700,160	18,672,900	11/02/2022	11/30/2031	Currency Swap				F9731#-AJ-6	Vicat SA Senior Unsecured Notes	2	25,700,160	18,672,900

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STATEMENT AS OF SEPTEMBER 30, 2023 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*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,562,150	23,087,695	14,513,084	11/03/2022	12/22/2031	Currency Swap	(16,077,920)	(12,814,864)	G41338-AA-1	Grosvenor Limited Senior Note Ser	2	39,165,615	27,327,948
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	14,115,946	14,115,946	10,526,651	11/03/2022	12/22/2031	Currency Swap			G7178*-AD-6	Porterbrook Rail Finance Senior Secured	2	14,115,946	10,526,651
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	11,767,748	11,767,748	8,305,519	11/03/2022	12/22/2031	Currency Swap			G4622*-AL-3	Howard De Walden Estates Gtd Senior Note	1	11,767,748	8,305,519
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	35,463,702	35,463,702	26,342,673	11/03/2022	12/22/2031	Currency Swap			G82798-AA-6	South East Water Limited Gtd Senior Secured Note Series 1	2	35,463,702	26,342,673
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	31,560,754	31,560,754	23,816,183	11/03/2022	12/22/2031	Currency Swap			L0808*-AC-1	Bacon Finco S.a.r.l Senior Secured Note Series B	2	31,560,754	23,816,183
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	22,063,834	22,063,834	15,515,540	11/03/2022	12/22/2031	Currency Swap			G1151*-AB-0	Bellway Plc Senior Note Series B	2	22,063,834	15,515,540
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	59,706,574	59,706,574	39,610,080	11/03/2022	12/22/2031	Currency Swap			G8655*-AA-8	TP REIT Procco 2 Limited Senior Secured Notes	1	59,706,574	39,610,080
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	21,380,871	21,380,871	14,596,684	11/03/2022	12/22/2031	Currency Swap			G1320*-AB-0	Breedon Group Plc Senior Note Series B	2	21,380,871	14,596,684
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	38,524,954	38,524,954	27,323,726	11/03/2022	12/22/2031	Currency Swap			G82778-AE-0	SOUTH STAFFORDSHIRE PLC GBP FAC A LN - ISSUED DEC 2021	2	38,524,954	27,323,726
57629*KH3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	33,942,556	33,942,556	28,506,088	11/03/2022	12/22/2031	Currency Swap				DP World Ltd-SENIOR UNSECURED	2	33,942,556	28,506,088
57629*KG5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	234,948,546	53,392,134	41,310,598	11/04/2022	12/11/2031	Currency Swap	(16,878,966)	(15,134,668)	F3152*-AG-9	ERMEIA HLDG SECD SR INITIAL PP NTS 2019-2	2	70,271,100	56,445,266
57629*KG5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	141,191,040	141,191,040	95,815,340	11/04/2022	12/11/2031	Currency Swap			N52698-AB-4	Lineage Treasury Europe Senior Unsecured Notes Series D	2	141,191,040	95,815,340
57629*KG5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	29,599,783	29,599,783	24,586,997	11/04/2022	12/11/2031	Currency Swap			E5444*-AF-1	Futbol Club Barcelona Senior Secured Note Series B1 (Amortizing)	2	29,599,783	24,586,997
57629*KG5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	33,828,004	33,828,004	26,119,252	11/04/2022	12/11/2031	Currency Swap			E5444*-AG-9	Futbol Club Barcelona Senior Secured Note Series B2 (Bullet)	2	33,828,004	26,119,252
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	197,737,711	(8,243,893)	(7,287,453)	11/04/2022	12/07/2029	Currency Swap	(14,098,375)	(12,080,432)	24906P-C8-4	DENTSPLY Sirona Inc. Senior Note Ser	2	5,854,482	4,792,979
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	17,563,446	17,563,446	14,378,936	11/04/2022	12/07/2029	Currency Swap			D8286*-AD-2	Sirona Dental Services G Senior Note Ser	2	17,563,446	14,378,936
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	64,579,647	64,579,647	50,879,002	11/04/2022	12/07/2029	Currency Swap			B95508-AB-7	Unicore SA Senior Note Ser	2	64,579,647	50,879,002
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	13,280,890	13,280,890	10,979,138	11/04/2022	12/07/2029	Currency Swap			F5662*-AA-6	Laurent-Perrier Group Senior Unsecured	2	13,280,890	10,979,138
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	38,300,500	38,300,500	32,108,160	11/04/2022	12/07/2029	Currency Swap			B95508-AD-3	Unicore SA Senior Note Series B	2	38,300,500	32,108,160
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	19,855,700	19,855,700	15,629,333	11/04/2022	12/07/2029	Currency Swap			F1000*-AB-4	Akiem Holding SAS Senior Secured Notes (Bullet)	2	19,855,700	15,629,333
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	5,596,230	5,596,230	4,585,655	11/04/2022	12/07/2029	Currency Swap			285295-B8-7	Electrocomponents plc Senior Notes Series C	2	5,596,230	4,585,655
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	44,594,550	44,594,550	36,543,288	11/04/2022	12/07/2029	Currency Swap			N3527*-AA-7	Getec Infra NL BV Term Fac	2	44,594,550	36,543,288
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	15,939,450	15,939,450	12,138,255	11/04/2022	12/07/2029	Currency Swap			D30028-AA-4	GETEC INFRA NLBV-2021 EUR Fixed Incremental Term Loan	2	15,939,450	12,138,255
57629*KF7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	1,506,465	1,506,465	1,380,455	11/04/2022	12/07/2029	Currency Swap			U74079-AP-6	Netflix Inc-SENIOR UNSECURED	2	1,506,465	1,380,455
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	292,527,085	21,967,705	14,573,223	11/04/2022	08/19/2030	Currency Swap	(20,951,945)	(19,075,712)	592688-B8-1	Mettler-Toledo Internati Senior Note	2	42,919,650	33,648,935
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	70,494,750	70,494,750	60,632,067	11/04/2022	08/19/2030	Currency Swap			X2145*-AC-0	Elenia Verkko Oyj Gtd Senior Note	2	70,494,750	60,632,067
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	34,749,000	34,749,000	28,045,525	11/04/2022	08/19/2030	Currency Swap			G3076*-AE-6	Envol Investments Limite Senior Secured Notes	2	34,749,000	28,045,525
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	36,998,400	36,998,400	29,675,166	11/04/2022	08/19/2030	Currency Swap			F5900*-AA-8	MacqPisto SAS Senior Term Loa	2	36,998,400	29,675,166
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	27,855,090	27,855,090	21,189,126	11/04/2022	08/19/2030	Currency Swap			G49408-AA-4	Irish Residential Proper Senior Secured Notes	2	27,855,090	21,189,126

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STATEMENT AS OF SEPTEMBER 30, 2023 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*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,857,060	12,704,908	11/04/2022	08/19/2030	Currency Swap				G3301*-AB-9	FIL Limited Senior Unsecured Notes	2	15,857,060	12,704,908
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,506,560	43,415,137	11/04/2022	08/19/2030	Currency Swap				G294A8-AK-5	Dyson Finance Limited Guaranteed Series A Senior Notes	1	47,506,560	43,415,137
57629*KE0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		56,150,000	46,121,561	11/04/2022	08/19/2030	Currency Swap				F7754#-AC-7	Safran Group Senior Unsecured Notes	1	56,150,000	46,121,561
57629*KD2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		58,747,500	3,701,481	11/07/2022	04/05/2046	Currency Swap	(5,334,000)	(4,158,240)		G83028-AC-1	University of Edinburgh Senior Note Ser	1	13,785,763	7,859,721
57629*KD2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		60,085,531	34,692,484	11/07/2022	04/05/2046	Currency Swap				X3204#-AB-4	Gibraltar Capital Assets Senior Secured	2	60,085,531	34,692,484
57629* KC4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		159,348,640	1,659,120	11/07/2022	11/29/2030	Currency Swap	(12,861,200)	(11,986,486)		F5662#-AB-4	Laurent-Perrier Group Senior Unsecured Notes	2	14,520,320	12,221,804
57629* KC4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		178,005,000	138,700,587	11/07/2022	11/29/2030	Currency Swap				F3419#-AA-7	FFP SA Senior Unsecured Notes	1	178,005,000	138,700,587
57629*KB6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,179,875	4,773,240	11/07/2022	12/08/2045	Currency Swap	(3,799,235)	(3,242,786)		G7228#-AC-4	NT SER C	1	15,309,332	8,016,026
57629*KB6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,942,594	21,765,354	11/07/2022	12/08/2045	Currency Swap				G2867#-AA-5	Dunedin Income Growth In Senior Secured	1	39,942,594	21,765,354
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		174,986,912	6,019,851	11/07/2022	12/31/2029	Currency Swap	(15,973,325)	(13,541,139)		G0566*-AC-3	Arqiva PP Financing plc Gtd Senior Secu	2	21,993,176	15,807,838
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,009,721	13,365,088	11/07/2022	12/31/2029	Currency Swap				G1745*-AM-3	BUUK Infrastructure Issuer PLC - Senior Note Series B	2	20,009,721	13,365,088
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		51,605,875	33,815,274	11/07/2022	12/31/2029	Currency Swap				G01768-AA-7	ALLIANCE TR PLC	1	51,605,875	33,815,274
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,640,503	4,553,499	11/07/2022	12/31/2029	Currency Swap				G0566*-AD-1	Arqiva Financing No 1 Li Gtd Senior FI R	2	4,640,503	4,553,499
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,688,311	22,413,246	11/07/2022	12/31/2029	Currency Swap				G8472#-AE-1	STERIS Corporation Senior Note Ser	2	26,688,311	22,413,246
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,780,285	17,962,115	11/07/2022	12/31/2029	Currency Swap				G6750*-AE-2	1887 Company Ltd Senior Secured Note Series E	2	21,780,285	17,962,115
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,698,381	21,166,712	11/07/2022	12/31/2029	Currency Swap				L0808#-AB-3	Beacon Finco S.a.r.l Senior Secured Note Series A	2	26,698,381	21,166,712
57629*KAB	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		60,236,612	40,264,094	11/07/2022	12/31/2029	Currency Swap				G8277#-AF-7	SOUTH STAFFORDSHIRE PLC GBP FAC B LN - ISSUED DEC 2021	2	60,236,612	40,264,094
57629*JZ5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		34,605,300	33,324,594	11/07/2022	12/11/2033	Currency Swap	(3,233,300)	(2,993,338)		G6774*-AC-8	Origin Finance 2 plc Senior Secured	1	36,557,894	24,920,232
57629*JZ5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		6,923,692	4,766,110	11/07/2022	12/11/2033	Currency Swap				G7737#-AD-6	SGN MidCo Limited Gtd Senior Secu	2	6,923,692	4,766,110
57629*JZ5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,618,322	3,255,122	11/07/2022	12/11/2033	Currency Swap				G1591#-BF-8	Britvic PLC Senior Notes Se	2	4,618,322	3,255,122
57629*JY8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		61,834,505	20,101,326	11/07/2022	08/14/2029	Currency Swap	(1,394,173)	(2,455,713)		Q7794#-AF-0	QPH Finance Co. Pty. Ltd Gtd Senior Secu	2	21,495,499	14,917,117
57629*JY8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,415,500	26,723,200	11/07/2022	08/14/2029	Currency Swap				Q8458*-AA-0	Servco Australia Pty Ltd Senior Note Ser	2	31,415,500	26,723,200
57629*JY8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		24,181,920	18,809,871	11/07/2022	08/14/2029	Currency Swap				Q2600#-AD-2	Coates Group Pty Ltd Senior Note Series 2022-D (AUD)	2	24,181,920	18,809,871
57629*JX0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		48,513,122	36,048,726	11/07/2022	11/15/2049	Currency Swap	332,752	(848,942)		J3891#-AC-6	Lilly Japan Financing Go Senior Note Series C	1	70,302,724	36,897,668
57629*JIW2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		65,036,160	40,556,160	11/08/2022	07/17/2034	Currency Swap	120,960	(638,635)		Q0846#-AA-4	Australian Laboratory Se Senior Unsecured Notes	2	40,435,200	29,729,137
57629*JIW2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,091,040	21,559,710	11/08/2022	07/17/2034	Currency Swap				Q2600#-AF-7	Coates Group Pty Ltd Senior Note Series 2022-F (AUD)	2	31,091,040	21,559,710
57629*JV4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		64,370,000	69,612,480	11/08/2022	06/25/2031	Currency Swap	(30,000)	(795,539)		74726M-A*-0	Qantas Airways Limited Senior Secured Notes	2	69,642,480	50,266,595
57629*JU6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		64,738,386	84,357,210	11/09/2022	05/11/2032	Currency Swap	1,155,386	1,465,974		L2289#-AB-7	DH Japan Finance SA Senior Note Ser	1	83,201,824	58,802,431
57629*JT9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,044,000	22,390,000	11/09/2022	10/14/2040	Currency Swap	(1,112,000)	(907,087)		A5791*-AA-9	QBB Produktion GmbH Senior Unsecured Notes	1	23,502,000	13,218,036
57629*JS1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		46,466,369	26,795,198	11/09/2022	06/04/2038	Currency Swap	(2,839,768)	(2,259,352)		G7895*-AE-6	Scottish Mortgage Invest Senior Note Ser	1	29,634,966	17,709,970

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STATEMENT AS OF SEPTEMBER 30, 2023 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*JS1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,481,534	16,300,057	11/09/2022	06/04/2038	Currency Swap				G6260#-AA-9	MORhones plc Senior Secured Notes	2	22,481,534	16,300,057
57629*JR3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	39,645,360	47,356,560	26,816,168	11/09/2022	06/15/2041	Currency Swap	232,560	33,929		Q8609#-AD-0	WestConnex Finance Compa Senior Secured Notes	2	47,124,000	26,782,239
57629*JQ5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	52,181,884	57,095,363	45,975,548	11/09/2022	11/30/2027	Currency Swap	(3,116,959)	(2,433,113)		G2735#-AA-9	Great Rolling Stock Co PLC/The Origin Finance 2 plc Senior Secured	2	60,212,322	48,408,661
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	329,572,593	(5,557,740)	(5,727,274)	11/10/2022	12/11/2028	Currency Swap	(18,718,582)	(14,835,651)		G6774#-AB-0	BUUK Infrastructure Issuer PLC - Senior Note Series H	1	13,160,842	9,108,377
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	59,760,487	59,760,487	45,034,869	11/10/2022	12/11/2028	Currency Swap				G1745#-AJ-0	Porterbrook Rail Finance Senior Secured	2	59,760,487	45,034,869
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	32,806,503	32,806,503	26,206,509	11/10/2022	12/11/2028	Currency Swap				G7178#-AB-0	Porterbrook Rail Finance Senior Secured	2	32,806,503	26,206,509
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	2,243,185	2,243,185	1,771,574	11/10/2022	12/11/2028	Currency Swap				G1591#-BC-5	Britvic PLC Senior Notes Series A	2	2,243,185	1,771,574
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	12,403,493	12,403,493	9,646,719	11/10/2022	12/11/2028	Currency Swap				G2685#-AG-4	Great Portland Estates Senior Note Series A	2	12,403,493	9,646,719
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	8,559,033	8,559,033	6,703,378	11/10/2022	12/11/2028	Currency Swap				G4133#-AE-3	Grosvenor Limited Senior Notes Series A	2	8,559,033	6,703,378
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	69,744,960	69,744,960	53,588,693	11/10/2022	12/11/2028	Currency Swap				G9075#-AA-2	Tritax Big Box REIT plc Senior Note Series A	2	69,744,960	53,588,693
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	13,789,896	13,789,896	10,502,552	11/10/2022	12/11/2028	Currency Swap				G1151#-AA-2	Bellway Plc Senior Note Series A	2	13,789,896	10,502,552
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	44,302,111	44,302,111	32,756,506	11/10/2022	12/11/2028	Currency Swap				B1000#-AA-0	Aedifica SA Senior Unsecured Notes	2	44,302,111	32,756,506
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	60,638,673	60,638,673	53,381,397	11/10/2022	12/11/2028	Currency Swap				22982#-AA-4	Cubitt Global LLC Senior Secured Notes	2	60,638,673	53,381,397
57629*JP7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	59,444,335	59,444,335	53,229,990	11/10/2022	12/11/2028	Currency Swap				22982#-AB-2	Cubitt Global LLC Senior Secured Notes Series 6	2	59,444,335	53,229,990
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	296,292,208	29,849,074	20,139,049	11/10/2022	10/31/2034	Currency Swap	(17,072,552)	(12,736,005)		G2686#-AB-4	Great Rolling Stock Comp Senior Secured	2	46,921,626	32,875,054
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	54,170,417	54,170,417	44,178,532	11/10/2022	10/31/2034	Currency Swap				00183F-AA-3	Anno 2017 Joint Holding Senior Secured	2	54,170,417	44,178,532
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	230,909	230,909	196,567	11/10/2022	10/31/2034	Currency Swap				E6732#-AA-3	ITEMOSA 3.40%	2	230,909	196,567
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	13,796,612	13,796,612	10,999,428	11/10/2022	10/31/2034	Currency Swap				G2854#-AA-0	Dudgeon Offshore Wind Lt Senior Secured Notes	1	13,796,612	10,999,428
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	60,366,562	60,366,562	45,941,334	11/10/2022	10/31/2034	Currency Swap				X2313#-AA-6	Eruca Investments Limite Senior Secured Notes	2	60,366,562	45,941,334
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	28,276,140	28,276,140	21,014,487	11/10/2022	10/31/2034	Currency Swap				L0808#-AG-2	Beacon Finco S.a.r.l Senior Secured Note Series F	2	28,276,140	21,014,487
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	127,753,036	127,753,036	85,025,833	11/10/2022	10/31/2034	Currency Swap				G6954#-AD-4	Peabody Trust Senior Secured Notes	1	127,753,036	85,025,833
57629*KP5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	267,573	267,573	199,253	11/10/2022	10/31/2034	Currency Swap				G3646#-AB-9	Forth Ports Finance plc Senior Secured	2	267,573	199,253
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	299,999,655	5,930,298	2,754,598	11/14/2022	12/12/2027	Currency Swap	(20,957,115)	(16,614,107)		G3461#-AA-5	VIVID Housing Limited	1	26,887,413	19,368,705
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	45,745,555	45,745,555	31,868,655	11/14/2022	12/12/2027	Currency Swap				G6462#-AA-9	Newton Housing Trust Senior Secured	1	45,745,555	31,868,655
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	27,455,106	27,455,106	20,515,372	11/14/2022	12/12/2027	Currency Swap				G8302#-AB-1	University of West Londo Senior Secured	2	27,455,106	20,515,372
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	93,786,122	93,786,122	74,765,412	11/14/2022	12/12/2027	Currency Swap				G8056#-AB-5	Seyvern Trent Water Limit Senior Note Ser	2	93,786,122	74,765,412
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	20,693,388	20,693,388	17,597,485	11/14/2022	12/12/2027	Currency Swap				G6970#-AJ-5	Peel Ports PP Finance Lt Senior Secured	2	20,693,388	17,597,485
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	24,994,234	24,994,234	20,971,296	11/14/2022	12/12/2027	Currency Swap				G8766#-AE-4	Workspace Group plc Senior Note Ser	2	24,994,234	20,971,296
57629*KNO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	116,207,405	116,207,405	97,895,656	11/14/2022	12/12/2027	Currency Swap				G36012-AB-5	National Express Group P Senior Note Series A	2	116,207,405	97,895,656
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	224,100,044	18,030,363	10,744,503	11/14/2022	07/31/2039	Currency Swap	(16,816,385)	(11,361,318)		G8288#-AA-1	University of Brighton Senior Secured	2	34,846,748	22,105,821

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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 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*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,787,583	16,115,642	11/14/2022	07/31/2039	Currency Swap				G3087#-AA-7	EQUITIX SOLAR FINCO 4 LTD GBP TERM LN	2	18,787,583	16,115,642
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		77,538,269	62,299,632	11/14/2022	07/31/2039	Currency Swap				G8408#-AA-8	St. James's Oncology Sr Note	1	77,538,269	62,299,632
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		28,449,148	21,764,498	11/14/2022	07/31/2039	Currency Swap				G3296#-AA-8	FOC Energy Limited Senior Secured GIP III Jupiter LTD Senior Secured	2	28,449,148	21,764,498
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		43,000,166	34,936,903	11/14/2022	07/31/2039	Currency Swap				G3426#-AB-5	Notes BLIF Bidco Limited Senior Secured	2	43,000,166	34,936,903
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		42,865,959	31,450,734	11/14/2022	07/31/2039	Currency Swap				G1093#-AC-3	Last Mile Infrastructure Senior Secured Notes (Delayed Tranche)	2	42,865,959	31,450,734
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		9,086,323	6,330,472	11/14/2022	07/31/2039	Currency Swap				G5383#-AA-7	Secured Notes (Delayed Tranche) Coro Places Ltd. Senior Secured	2	9,086,323	6,330,472
57629*LF6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		6,499,974	3,280,415	11/14/2022	07/31/2039	Currency Swap				G2711#-AB-5	Notes Shurgard Luxembourg Sarl Gtd Senior Note	1	6,499,974	3,280,415
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		159,288,575	4,492,685	11/14/2022	10/30/2027	Currency Swap	(8,954,515)	(7,378,133)		L8367#-AE-3	Dyson Finance Limited Gtd Senior Note	2	13,447,200	11,745,972
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		23,140,320	20,636,406	11/14/2022	10/30/2027	Currency Swap				G294A#-AG-4	Notes Jones Lang LaSalle Finan Gtd Senior Note	1	23,140,320	20,636,406
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,425,600	11,464,517	11/14/2022	10/30/2027	Currency Swap				48021P-A*-9	Note	2	13,425,600	11,464,517
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		65,238,650	52,973,270	11/14/2022	10/30/2027	Currency Swap				G7996#-AA-8	Segro Plc Senior Unsecured	1	65,238,650	52,973,270
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,281,493	12,090,469	11/14/2022	10/30/2027	Currency Swap				X0827#-AA-3	Budapest Airport Zrt. Tranche 2 Origi	2	14,281,493	12,090,469
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,855,307	18,502,332	11/14/2022	10/30/2027	Currency Swap				X0032#-AA-4	Airport Hungary Krt. Tranche 2 Origi	2	21,855,307	18,502,332
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,436,800	3,876,570	11/14/2022	10/30/2027	Currency Swap				G1267#-AA-7	Bidcorp Foodservice Inte Senior Unsecured Notes	2	4,436,800	3,876,570
57629*LE9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,396,500	25,222,223	11/14/2022	10/30/2027	Currency Swap				T0149#-AA-7	ASR Media and Sponsorshi Senior Secured Notes	2	22,396,500	25,222,223
57629*LD1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		53,114,700	35,251,430	11/07/2022	01/15/2049	Currency Swap	(4,253,500)	(3,286,576)		G6428#-AD-2	Network Homes Limited Senior Secured Notes	1	60,583,000	38,538,006
57629*LD1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		281,449	156,120	11/07/2022	01/15/2049	Currency Swap				G1128#-AC-2	BIRMINGHAM ARPT FIN PLC SR NT	2	281,449	156,120
57629*LC3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		152,804,597	61,097,359	11/15/2022	12/31/2047	Currency Swap	(6,936,146)	(3,404,225)		G7612#-AA-2	Rock Rail Southwestern p Senior Secured	2	93,982,942	64,501,584
57629*LC3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		73,864,911	42,190,387	11/15/2022	12/31/2047	Currency Swap				G2018#-AA-7	Enfinium Holding Limited Senior Secured Notes	2	73,864,911	42,190,387
57629*LB5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		23,217,790	14,330,954	11/16/2022	04/13/2041	Currency Swap	(529,820)	(467,963)		F1000#-AD-0	Akiem Holding SAS Green Senior Notes Series B	2	26,751,420	14,798,917
57629*LA7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,465,280	17,307,278	11/16/2022	04/30/2044	Currency Swap	(614,400)	(391,351)		G4460#-AB-4	Henderson International Senior Unsecured Notes	1	28,623,360	17,698,629
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		236,023,793	17,894,515	11/16/2022	08/31/2043	Currency Swap	(5,199,365)	(5,890,416)		D878A2-AA-3	Via Solutions Nord GmbH Senior Secured	1	29,445,882	23,784,931
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		27,082,827	21,605,506	11/16/2022	08/31/2043	Currency Swap				25461C-AA-0	DirectRoute (Tuam) Limit Senior Secured	2	27,082,827	21,605,506
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		44,554,453	35,626,639	11/16/2022	08/31/2043	Currency Swap				382879-AA-2	Gorey To Enniscorthy M11 Senior Secured	2	44,554,453	35,626,639
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		36,640,281	31,191,047	11/16/2022	08/31/2043	Currency Swap				E6732#-AA-3	ITEMOSA 3.40%	2	36,640,281	31,191,047
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		64,984,802	59,019,955	11/16/2022	08/31/2043	Currency Swap				K7784#-AA-3	P/F Eystur-og Sandoyartu Senior Secured	1	64,984,802	59,019,955
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		44,972,070	31,846,782	11/16/2022	08/31/2043	Currency Swap				B7000#-AB-5	Puratos NV Senior Note Series B	2	44,972,070	31,846,782
57629*KZ3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,459,090	4,890,117	11/16/2022	08/31/2043	Currency Swap				U74079-AR-2	Netflix Inc-SENIOR UNSECURED	2	5,459,090	4,890,117
57629*KY6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		123,383,920	90,354,679	11/16/2022	06/30/2050	Currency Swap	(2,705,840)	(1,768,120)		G2044#-AA-5	Channel Link Enterprises Senior Secured	2	129,300,077	92,122,799
57629*KX8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		150,220,554	34,159,449	11/16/2022	12/31/2027	Currency Swap	(3,457,688)	(3,436,073)		B9550#-AA-9	Unicore SA Senior Note Ser	2	46,088,223	37,595,522

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STATEMENT AS OF SEPTEMBER 30, 2023 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*KX8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		100,485,300	83,005,660	11/16/2022	12/31/2027	Currency Swap				372460-D8-1	Genuine Parts Company Senior Note Ser	2	100,485,300	83,005,660
57629*KX8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,185,150	18,649,374	11/16/2022	12/31/2027	Currency Swap				031100-N*-7	AMETEK, Inc. Senior Secured Series T	2	22,185,150	18,649,374
57629*KI0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	152,175,310	64,994,500	60,003,701	11/17/2022	06/27/2026	Currency Swap	(4,061,750)	(3,537,992)		G2037*-AE-6	Chanel Ltd EURO SR NT SER A	1	69,056,250	63,541,693
57629*KI0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		40,226,400	35,735,442	11/17/2022	06/27/2026	Currency Swap				K21628-AG-1	Danish Crown A/S Senior Unsecured Note	2	40,226,400	35,735,442
57629*KI0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,557,000	14,730,812	11/17/2022	06/27/2026	Currency Swap				227047-A8-6	Croda International plc Senior Note Ser	2	16,557,000	14,730,812
57629*KI0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,499,980	13,192,975	11/17/2022	06/27/2026	Currency Swap				G5264*-AV-1	Kingspan Securities 2017 Gtd Senior Note	2	16,499,980	13,192,975
57629*KI0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,832,290	19,125,662	11/17/2022	06/27/2026	Currency Swap				G0488*-AA-2	Atlantica Yield Plc Senior Secured Notes	2	21,832,290	19,125,662
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	259,433,524	23,025,318	20,551,568	11/18/2022	11/30/2026	Currency Swap	(4,567,228)	(3,989,154)			TanQuid GmbH & Co. KG Senior Secured	1	27,592,546	24,540,722
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		38,480,130	33,941,126	11/18/2022	11/30/2026	Currency Swap				031100-H8-2	AMETEK, Inc. Senior Note Kingspan Group PLC Gtd Senior Note	2	38,480,130	33,941,126
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		43,211,840	39,398,960	11/18/2022	11/30/2026	Currency Swap				G5264*-AS-8	Sodiaal International S. Senior Note	2	43,211,840	39,398,960
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		38,781,250	35,440,886	11/18/2022	11/30/2026	Currency Swap				FB494*-AA-4	Sodiaal International S. Senior Note	2	38,781,250	35,440,886
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		11,380,720	10,128,566	11/18/2022	11/30/2026	Currency Swap				B95508-AC-5	Unicore SA Senior Note Series A ...	2	11,380,720	10,128,566
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		9,436,780	8,291,652	11/18/2022	11/30/2026	Currency Swap				285295-B*-1	Electrocomponents plc Senior Notes Series A	2	9,436,780	8,291,652
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		83,898,000	73,102,284	11/18/2022	11/30/2026	Currency Swap				N3584*-AA-7	GLOBAL TIP FIN B V EUR FAC B LN ...	2	83,898,000	73,102,284
57629*KV2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,750,696	20,000,000	11/18/2022	11/30/2026	Currency Swap				G6751*-AA-9	17 Capital Fund 5 Partners Fund Borrower Limited - Term Loan Facility	1	20,750,696	20,000,000
57629*KU4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	85,151,655	1,721,377	953,447	11/18/2022	12/16/2026	Currency Swap	(2,182,275)	(1,834,062)		G24798-AB-5	Covent Garden Group Holdings Limited Senior Note Series B	1	3,903,652	2,787,509
57629*KU4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,851,930	9,214,705	11/18/2022	12/16/2026	Currency Swap				G1744*-AS-7	Cadogan Estates Ltd Gtd Senior Note	2	12,851,930	9,214,705
57629*KU4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,636,548	11,454,732	11/18/2022	12/16/2026	Currency Swap				40637C-C*-9	HALMA PLC GBP SER G SR NT	2	14,636,548	11,454,732
57629*KU4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,105,568	26,505,042	11/18/2022	12/16/2026	Currency Swap				227047-B*-7	Croda International plc Senior Note Ser	2	31,105,568	26,505,042
57629*KU4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		33,446,024	28,871,325	11/18/2022	12/16/2026	Currency Swap				G24798-AC-3	Covent Garden Group Hold Senior Note Ser	1	33,446,024	28,871,325
57629*K77	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	50,040,690	53,120,090	29,830,228	11/21/2022	12/04/2044	Currency Swap	1,805,090	153,820		00832*-AK-2	Australian Pacific Airpro Gtd Senior Secured Note Series 2019D	2	51,315,000	29,676,408
57629*K99	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	46,391,010	50,093,449	40,586,448	11/22/2022	07/07/2030	Currency Swap	1,906,480	970,516		Q9749*-AN-5	Westrac Pty Ltd Senior Unsecured Notes	2	48,186,969	39,615,932
57629*KR1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	14,696,148	16,371,870	9,862,935	11/22/2022	03/15/2052	Currency Swap	515,268	501,349		Q80598-AC-7	Registry Finance Pty Ltd Gtd Senior Secured Note Series C	1	15,856,602	9,361,586
57629*Q03	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	262,948,369	91,837,888	52,174,502	11/22/2022	10/31/2049	Currency Swap	(7,170,112)	(1,357,993)		G2451*-AA-1	Cottsway Housing Associa Senior Secured Notes	1	99,008,000	53,532,495
57629*Q03	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		87,243,000	43,026,095	11/22/2022	10/31/2049	Currency Swap				G2711*-AC-3	Cur Places Ltd. Senior Secured Note Series C	1	87,243,000	43,026,095
57629*Q03	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		73,402,858	52,781,788	11/22/2022	10/31/2049	Currency Swap				G30298-AA-0	Eastlands Arena Limited Senior Secured Notes	2	73,402,858	52,781,788
57629*Q03	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,904,680	16,211,596	11/22/2022	10/31/2049	Currency Swap				G1128*-AA-6	BIRMINGHAM ARPT FIN PLC-SER A SR NOTE GBP	2	21,904,680	16,211,596
57629*LH2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	94,480,000	51,028,185	22,947,710	11/23/2022	09/17/2050	Currency Swap	(3,168,000)	333,548		G9143*-AB-4	Two Rivers Housing Senior Secured Note Series B	2	54,196,185	22,614,162
57629*LH2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		51,456,642	22,614,162	11/23/2022	09/17/2050	Currency Swap				G9143*-AA-6	Two Rivers Housing Senior Secured Notes	2	51,456,642	22,614,162

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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 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* KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	17,724,000	16,617,000	9,459,096	11/23/2022	11/01/2052	Currency Swap	(585,000)	4,896	G7150*-AA-4	Plus Dane Housing Limite Senior Secured Notes	1	17,202,000	9,454,200
57629* KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,555,979	7,653,164	11/23/2022	11/01/2052	Currency Swap			69325*-AG-8	PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L.,-Term Loan Series 2022-2	1	7,555,979	7,653,164
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	268,753,262	37,363,553	25,568,071	11/23/2022	06/30/2046	Currency Swap	(9,035,062)	(3,040,593)	G92888-AC-9	University of East Angli Senior Secured	1	46,398,615	28,608,664
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		54,011,561	36,191,997	11/23/2022	06/30/2046	Currency Swap			G7611*-AA-7	Rock Rail East Anglia pl Senior Secured	2	54,011,561	36,191,997
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		36,925,483	25,192,551	11/23/2022	06/30/2046	Currency Swap			G88538-AE-6	Oxford Brookes Universit Senior Note Series E	2	36,925,483	25,192,551
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		107,045,911	61,309,176	11/23/2022	06/30/2046	Currency Swap			G2564*-AA-5	Cross London Trains Limi Senior Secured Notes	2	107,045,911	61,309,176
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		60,710,990	36,848,955	11/23/2022	06/30/2046	Currency Swap			G9369*-AA-7	Viridor Energy Group Lim Senior Secured Note	2	60,710,990	36,848,955
57629* MG3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		899,589	459,258	11/23/2022	06/30/2046	Currency Swap			G2711*-AA-7	Cur Places Ltd. Senior Secured Notes	1	899,589	459,258
57629* MF5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	53,370,000	54,208,675	34,219,449	11/25/2022	01/15/2050	Currency Swap	(1,557,000)	(358,262)	G9000#-AD-2	Tottenham Hotspur Limite Senior Secured Note Series D	2	55,765,675	34,577,711
57629* ME8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	13,285,912	14,809,967	9,108,614	11/25/2022	03/15/2047	Currency Swap	388,524	200,308	Q80598-AB-9	Registry Finance Pty Ltd Gtd Senior Secured Note Series B	1	14,421,443	8,908,306
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	514,618,744	(14,742,034)	(15,649,343)	11/25/2022	12/31/2038	Currency Swap	(15,278,761)	(16,129,669)	L0175#-AB-8	Alpha Trains Finance S.A Term Loan	2	536,727	480,326
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,065,978	10,611,777	11/25/2022	12/31/2038	Currency Swap				VELA ENERGY FINANCE SA-SECURED	2	12,065,978	10,611,777
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,141,122	12,258,866	11/25/2022	12/31/2038	Currency Swap			E6732#-AA-1	ITEPESA 3.34%	2	14,141,122	12,258,866
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,709,865	11,812,864	11/25/2022	12/31/2038	Currency Swap			E8T529-AA-2	Sonnedix Espana Finance -SENIOR UNSECURED	2	14,709,865	11,812,864
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		29,992,401	25,802,633	11/25/2022	12/31/2038	Currency Swap			K8808*-AA-3	SIKUKI NUJK HARBOUR A/S SR SEC ND	1	29,992,401	25,802,633
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		73,020,563	52,331,476	11/25/2022	12/31/2038	Currency Swap			G7605#-AD-5	Roadster Finance DAC Senior Secured Notes	2	73,020,563	52,331,476
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,534,366	2,075,434	11/25/2022	12/31/2038	Currency Swap			E8T529-AC-8	Sonnedix Espana Finance -SENIOR UNSECURED	2	2,534,366	2,075,434
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,506,956	35,013,049	11/25/2022	12/31/2038	Currency Swap			F1000#-AA-6	Akiem Holding SAS Senior Secured Notes (Amortizing)	2	47,506,956	35,013,049
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		31,168,017	24,488,777	11/25/2022	12/31/2038	Currency Swap			E7134#-AA-3	Linia Nou Tram Dos S.A. EUR Term Loan	2	31,168,017	24,488,777
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		37,916,800	35,949,735	11/25/2022	12/31/2038	Currency Swap			E2R15T-AB-7	Bothwell Spain SA-SECURED	2	37,916,800	35,949,735
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		29,974,925	24,715,451	11/25/2022	12/31/2038	Currency Swap				Eliantus Finco Duo, S.A. 2.20 31/12/2038	2	29,974,925	24,715,451
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,099,671	18,150,389	11/25/2022	12/31/2038	Currency Swap			L0527#-AA-5	BEIP S.a.r.l - EUR Term Loan	2	22,099,671	18,150,389
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		33,007,978	25,645,284	11/25/2022	12/31/2038	Currency Swap			E6168#-AA-4	Hypesol Solar Inversione Senior Secured Notes	1	33,007,978	25,645,284
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,889,206	34,415,436	11/25/2022	12/31/2038	Currency Swap			E8417U-AA-6	Renovables Atlasol SA-SECURED	2	47,889,206	34,415,436
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		27,900,759	23,323,891	11/25/2022	12/31/2038	Currency Swap			F2838H-AA-8	Dunkerque LNG Holding SA Senior Secured Notes	2	27,900,759	23,323,891
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		35,224,000	31,003,023	11/25/2022	12/31/2038	Currency Swap			F2000#-AB-4	C2 Developpement Senior Unsecured Notes	2	35,224,000	31,003,023
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		28,396,145	25,592,680	11/25/2022	12/31/2038	Currency Swap			L0527#-AB-3	BEIP S.a.r.l - 2022 EUR Fixed Senior Term Loan	2	28,396,145	25,592,680
57629* MDO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		32,532,000	31,087,705	11/25/2022	12/31/2038	Currency Swap			X52212-AA-9	MDN Senior Holding, S.A. Senior Secured Floating Rate Term Note Facility	3	32,532,000	31,087,705

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STATEMENT AS OF SEPTEMBER 30, 2023 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* MD0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	20,876,025	18,665,282	11/25/2022	12/31/2038	Currency Swap				X52212-AB-7	MDN Senior Holding, S.A. Capex Facility Note	3	20,876,025	18,665,282
57629* MD0	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	8,437,410	7,463,537	11/25/2022	12/31/2038	Currency Swap				F4927#-AA-0	IM Square Euro SR BDS A	3	8,437,410	7,463,537
57629* MC2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	69,616,475	70,818,480	11/25/2022	12/31/2036	Currency Swap		957,005	1,642,384	66815P-AB-6	Northwestern Hydro Acqui Senior Secured Notes	2	69,861,475	54,821,051
57629* MB4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	11,580,492	15,675,786	11/25/2022	11/15/2034	Currency Swap		610,917	197,665	J3891#-AB-8	Lilly Japan Financing Co Senior Note Series B	1	15,064,869	9,661,211
57629*MA6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	29,864,118	31,202,083	11/29/2022	11/25/2030	Currency Swap		428,118	790,304	C3298#-AC-4	ALS Canada Limited Senior Unsecured Notes	2	30,773,965	24,126,921
57629*LZ2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	10,311,589	12,804,452	11/29/2022	01/07/2032	Currency Swap		156,169	285,121	763169-D8-5	Richardson International Senior Secured Debentures Series 2021-2 (CAD)	2	12,648,283	9,782,828
57629*LY5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	77,746,500	85,007,000	11/30/2022	11/24/2056	Currency Swap		(1,592,500)	152,667	G5702*-AB-9	MDS Group Investments Ltd Senior Unsecured Notes	1	86,599,500	33,097,454
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	168,516,558	30,248,456	12/07/2022	06/30/2032	Currency Swap		(1,316,536)	(1,600,219)	F1068#-AG-2	Bonduelle SCA Gtd Senior Note	2	31,564,992	27,729,704
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	38,045,000	33,256,323	12/07/2022	06/30/2032	Currency Swap				K8553*-AA-0	Scandlines ApS Senior Secured Club Atletico de Madrid Euro Fac A Ln	2	38,045,000	33,256,323
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	84,562,430	68,307,672	12/07/2022	06/30/2032	Currency Swap				E3075#-AA-3	Sisu Industrial Energy Solutions Oy	2	84,562,430	68,307,672
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	7,128,805	7,031,223	12/07/2022	06/30/2032	Currency Swap				X7T60Y-AB-6	Club Atletico de Madrid - 2022 EUR Fixed Senior Term Loan	2	7,128,805	7,031,223
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	10,272,080	7,947,315	12/07/2022	06/30/2032	Currency Swap				E3075#-AB-1	AUTOSTRADA WIELKOPOLSKA TERM LOAN	2	10,272,080	7,947,315
57629*LX7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	6,872,834	5,625,750	12/07/2022	06/30/2032	Currency Swap				X9273*-AA-3	DENTSPLY SIRONA Inc. Senior Note Ser	1	6,872,834	5,625,750
57629*MK4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	48,089,172	46,068,792	12/08/2022	08/15/2028	Currency Swap		(1,441,848)	(2,556,097)	24906P-B*-9	Alpha Trains Finance S.A Term Loan	2	47,510,640	47,144,221
57629*MK4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	4,615,854	4,130,804	12/08/2022	08/15/2028	Currency Swap				L0175#-AB-8	DENTSPLY SIRONA Inc. Senior Note Ser	2	4,615,854	4,130,804
57629*LI9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	21,552,182	20,646,802	12/08/2022	08/15/2026	Currency Swap		(643,838)	(858,328)	24906P-A*-0	Alpha Trains Finance S.A Term Loan	2	21,290,640	21,540,832
57629*LI9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	1,824,872	1,633,108	12/08/2022	08/15/2026	Currency Swap				L0175#-AB-8	Keyera Partnership Gtd Senior Note	2	1,824,872	1,633,108
57629*LV1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	16,711,867	18,481,997	12/09/2022	09/20/2027	Currency Swap		(66,653)	118,791	C4931*-BC-6	GPC Asia Pacific Holding Senior Unsecured Notes	2	18,548,650	15,437,583
57629*LU3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	43,621,500	46,792,800	12/09/2022	06/30/2026	Currency Swap		1,761,500	1,440,661	Q3973*-AB-5	IMI PLC Senior Note	2	45,031,300	39,373,978
57629*LT6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	156,371,780	29,658,860	12/09/2022	12/19/2025	Currency Swap		(817,300)	(562,472)	G4691#-AD-7	Sonepar S.A. Senior Note Ser	2	30,476,160	28,983,541
57629*LT6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	26,139,440	23,420,935	12/09/2022	12/19/2025	Currency Swap				F8568#-AE-9	Shurgard Luxembourg Sarl Gtd Senior Note	2	26,139,440	23,420,935
57629*LT6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	13,111,020	11,825,554	12/09/2022	12/19/2025	Currency Swap				L8367#-AD-5	SHV NEDERLAND BV EURO TERM LN	2	13,111,020	11,825,554
57629*LT6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	65,869,790	63,309,913	12/09/2022	12/19/2025	Currency Swap				N7660#-AR-8	Johnson Matthey PLC Senior Note Series A	2	65,869,790	63,309,913
57629*LT6	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	25,673,600	22,489,259	12/09/2022	12/19/2025	Currency Swap				479142-D8-7	Coates Group Pty Ltd Senior Note Series 2022-E (AUD)	1	25,673,600	22,489,259
57629*LS8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	3,985,450	4,432,080	12/12/2022	01/12/2032	Currency Swap		185,850	69,906	Q2600#-AE-0	Vartan Gas AB - 12 Year Fixed Rate	2	4,246,230	3,062,357
57629*LRO	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	16,574,646	20,411,041	12/12/2022	09/30/2033	Currency Swap		842,365	545,345	W9792#-AB-0	Vartan Gas AB - 10 Year Fixed Rate	2	19,568,676	14,046,384
57629*KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	5	29,639,898	21,096,793	12/12/2022	12/17/2031	Currency Swap		1,528,117	1,057,926	W9792#-AA-2	SISU Industrial Energy Solutions OY-SEK Fixed Term Loan	2	19,568,676	14,125,031
57629*KM2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	5	14,823,111	11,102,401	12/12/2022	12/17/2031	Currency Swap				X7552#-AA-7	Bruker Corporation Senior Unsecured Notes	2	14,823,111	11,102,401
57629*LQ2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	36,170,441	33,531,731	12/13/2022	12/11/2029	Currency Swap		(677,139)	(1,939,697)	116794-B8-6		2	34,208,870	34,429,253

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STATEMENT AS OF SEPTEMBER 30, 2023 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* LQ2	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,615,854	4,130,804	12/13/2022	12/11/2029	Currency Swap				L0175#-AB-8	Alpha Trains Finance S.A Term Loan	2	4,615,854	4,130,804
57629* LP4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	56,021,899	17,685,369	16,836,834	12/13/2022	11/17/2026	Currency Swap	(132,738)	533,791		C4931*-BA-0	Keyera Corp Senior Note Ser	2	17,818,107	16,303,043
57629* LP4	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		39,041,704	36,387,977	12/13/2022	11/17/2026	Currency Swap				C3346#-AA-8	FA MGT Limited Partnersh Senior	2	39,041,704	36,387,977
57629* MH1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	51,446,945	48,610,145	50,078,346	12/13/2022	10/08/2025	Currency Swap	(1,036,255)	(1,433,062)		Q1297#-AJ-7	CSL Finance Pty Ltd-GTD SENIOR NOTE	1	49,646,400	51,511,408
57629* MH1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,840,436	4,331,786	12/13/2022	10/08/2025	Currency Swap				L0175#-AB-8	Alpha Trains Finance S.A Term Loan	2	4,840,436	4,331,786
57629* LN9	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	42,388,280	44,986,100	40,349,423	12/14/2022	08/27/2025	Currency Swap	46,800	(75)		K3752#-AH-1	Copenhagen Airports A/S-SENIOR NOTE	2	44,939,300	40,349,498
57629* MJ7	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	1	15,496,055	20,476,078	14,951,408	12/14/2022	03/15/2027	Currency Swap	1,256,653	907,009		G294A#-AD-1	Dyson Finance Limited Gtd Senior Note	1	19,219,425	14,044,399
57629* LM1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	24,566,000	22,813,175	24,889,299	12/14/2022	05/02/2025	Currency Swap	154,000	233,179		G0567#-AA-4	Argiva Broadcast Parent Limited - GBP Subordinated Term Loan	3	22,659,175	24,656,120
57629* LM1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		514,051	262,433	12/14/2022	05/02/2025	Currency Swap				G2711*-AA-7	Curo Places Ltd. Senior Secured Notes	1	514,051	262,433
57629* LM1	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		9,873,013	10,000,000	12/14/2022	05/02/2025	Currency Swap				68325*-AG-8	PORED II HOLDING I LLC, PORED II HOLDING I OFFSHORE LP and PORED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-2	1	9,873,013	10,000,000
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	100,581,390	33,846,800	25,649,321	12/14/2022	08/28/2025	Currency Swap	614,250	766,748		G6750*-AC-6	1887 CO LTD GBP SER C SR SEC2 NT	2	33,232,550	24,882,573
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,500,308	4,802,989	12/14/2022	08/28/2025	Currency Swap					Gatwick Airport Finance -SECURED	3	5,500,308	4,802,989
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		25,237,960	19,189,001	12/14/2022	08/28/2025	Currency Swap				G8302#-AA-3	University of West Londo Senior Secured	2	25,237,960	19,189,001
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		19,905,200	16,424,635	12/14/2022	08/28/2025	Currency Swap				G1696#-BK-1	Bunzl Finance plc-GTD SENIOR NOTE SERIES C -GBP	2	19,905,200	16,424,635
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,996,160	14,517,841	12/14/2022	08/28/2025	Currency Swap				G3301*-AA-1	FIL Limited Senior Unsecured Notes	2	14,996,160	14,517,841
57629* LL3	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,358,184	1,308,086	12/14/2022	08/28/2025	Currency Swap				G1128*-AC-2	BIRMINGHAM ARPT FIN PLC SR NT	2	2,358,184	1,308,086
57629* LK5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	20,000,000	20,574,000	20,361,196	01/31/2023	01/31/2033	Currency Swap	(1,156,000)	(1,457,220)			Cooperatie Koninklijke Cosun U.A - EUR Senior Unsecured Term Loan	2	21,730,000	21,818,416
57629* LK5	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		1,598,128	1,138,623	01/31/2023	01/31/2033	Currency Swap				G2044*-AA-5	Channel Link Enterprises Senior Secured	2	1,598,128	1,138,623
57629* LJ8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2	18,445,000	14,845,818	14,615,248	06/27/2023	06/27/2030	Currency Swap	(66,500)	(308,445)		877409-A#-9	Taylor Wimpey PLC Senior Notes	2	14,912,318	14,923,693
57629* LJ8	Evergreen basket of USD Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,260,850	11,806,916	06/27/2023	06/27/2030	Currency Swap				Z03502-21-3	Perusahaan Listrik Negar-SENIOR UNSECURED	2	16,260,850	11,806,916
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	82,552,141	39,079,576	28,492,464	02/24/2023	02/26/2025	TRS Bond Index		(11,334,696)		48661C-AA-0	Rad QLO 7 Ltd-RAD 2020-7A A1	1	39,079,576	39,827,160
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		29,629,570	29,805,090	02/24/2023	02/26/2025	TRS Bond Index				14316W-AA-7	Carlyle Global Market St-CGMS 2021-7A A1	1	29,629,570	29,805,090
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		24,835,563	25,139,750	02/24/2023	02/26/2025	TRS Bond Index				40639G-AA-7	Halseypoint Clo 6 Ltd-HLSY 2022-6A A1	1	24,835,563	25,139,750
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	13,310,000	13,854,514	13,241,201	02/22/2024	02/22/2034	Currency Swap	(116,600)	(84,190)		912810-QK-7	US TREASURY N/B-BOND	1	13,971,114	13,325,391
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	2,097,333	3,226,491	2,337,153	04/04/2023	03/05/2038	Currency Swap	21,092	13,104		G6260#-AA-9	MORhomes plc Senior Secured Notes	2	3,205,399	2,324,049
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	38,045,000	38,545,500	36,247,574	05/31/2023	06/30/2043	Currency Swap	1,022,000	(1,510,184)		E5000*-AB-0	Espai Barca FT - Senior Unsecured Note Series A2	2	37,523,500	37,757,758
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		2,130,838	1,518,164	05/31/2023	06/30/2043	Currency Swap				G2044*-AA-5	Channel Link Enterprises Senior Secured	2	2,130,838	1,518,164
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	27,175,000	27,532,500	26,154,265	05/31/2023	06/30/2047	Currency Swap	730,000	(1,732,649)		E5000*-AC-8	Espai Barca FT - Senior Unsecured Note Series A3	2	26,802,500	27,886,914
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		2,130,838	1,518,164	05/31/2023	06/30/2047	Currency Swap				G2044*-AA-5	Channel Link Enterprises Senior Secured	2	2,130,838	1,518,164

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STATEMENT AS OF SEPTEMBER 30, 2023 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
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	52,420,800	52,264,320	46,079,157	02/08/2023	10/01/2052	Currency Swap	694,380	(2,178,644)	09778P-AA*-6	Bon Secours Mercy Health Senior Secured Notes	1	51,569,940	48,257,801
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,187,674	5,000,000	02/08/2023	10/01/2052	Currency Swap			G6751*-AA-9	17 Capital Fund 5 Partners Fund Borrower Limited - Term Loan Facility	1	5,187,674	5,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	30,085,000	30,385,000	14,697,223	02/08/2023	02/01/2053	Currency Swap	(430,000)	(1,131,823)	G7150*-AB-2	Plus Dane Housing Limite Senior Secured Notes (Delayed Tranche)	1	30,815,000	15,829,046
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,414,911	784,852	02/08/2023	02/01/2053	Currency Swap			G1128*-AC-2	BIRMINGHAM ARPT FIN PLC SR NT	2	1,414,911	784,852
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	17,952,000	18,365,100	16,935,674	05/22/2023	05/22/2033	Currency Swap	(30,600)	(811,120)	G90068-AM-8	Transmission Finance DAC Senior Secured Notes	2	18,395,700	17,746,794
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		2,130,838	1,518,164	05/22/2023	05/22/2033	Currency Swap			G2044*-AA-5	Channel Link Enterprises Senior Secured Notes	2	2,130,838	1,518,164
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	36,630,000	37,170,000	33,436,772	03/31/2023	03/31/2033	Currency Swap	12,000	(507,675)	G97208-AA-9	Wireless Infrastructure Senior Secured Notes	2	37,158,000	33,944,447
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	69,201,121	70,786,977	68,230,863	03/21/2023	03/27/2026	Currency Forward		715,549	912810-QK-7	US TREASURY N/B-BOND	1	70,786,977	67,515,314
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	218,538,925	4,755,643	(31,594,619)	04/25/2023	04/25/2024	TRS Bond Index		(36,149,084)	571748-AZ-5	Marsh & McLennan Cos Inc-SR UNSECURED	1	4,755,643	4,554,465
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,550,000	10,436,429	04/25/2023	04/25/2024	TRS Bond Index			74983A-AC-7	RR 19 Ltd-RRAM 2021-19A A2	1	10,550,000	10,436,429
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		17,428,156	16,899,565	04/25/2023	04/25/2024	TRS Bond Index			52107Q-AG-0	LAZARD GROUP LLC-SENIOR UNSECURED	2	17,428,156	16,899,565
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,516,619	8,267,786	04/25/2023	04/25/2024	TRS Bond Index			780082-AD-5	Royal Bank of Canada-SUBORDINATED Africa Finance Corp-SENIOR UNSECURED	1	8,516,619	8,267,786
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		18,935,371	18,693,996	04/25/2023	04/25/2024	TRS Bond Index			00830Y-AB-7	Africa Finance Corp-SENIOR UNSECURED	1	18,935,371	18,693,996
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,647,795	15,345,973	04/25/2023	04/25/2024	TRS Bond Index			74340X-BH-3	Prologis LP-SENIOR UNSECURED	1	16,647,795	15,345,973
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,000,000	13,670,356	04/25/2023	04/25/2024	TRS Bond Index			67592R-AC-7	Wells Fargo-OCT53 2021-1A B	1	14,000,000	13,670,356
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		28,675,077	25,698,353	04/25/2023	04/25/2024	TRS Bond Index			911312-AJ-5	UNITED PARCEL SERVICE IN-SENIOR UNSECURED NOTE	1	28,675,077	25,698,353
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,500,000	6,209,317	04/25/2023	04/25/2024	TRS Bond Index			06654D-AB-3	Banner Health-UNSECURED	1	7,500,000	6,209,317
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,896,493	2,784,095	04/25/2023	04/25/2024	TRS Bond Index			06051G-GA-1	BANK OF AMERICA CORP-SENIOR UNSECURED	1	2,896,493	2,784,095
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		136,412,331	119,424,685	04/25/2023	04/25/2024	TRS Bond Index			G5695F-AA-6	MM Investment Holding Revolver Floating Line	2	136,412,331	119,424,685
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	14,796,735	04/25/2023	04/25/2024	TRS Bond Index			67102Q-AZ-1	2012-7A CLASS BR3	1	15,000,000	14,796,735
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	67,152,873	75,000,000	63,557,771	04/26/2023	04/26/2024	TRS Bond Index		(11,442,229)	46142H-AK-4	Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2022-10	2	75,000,000	75,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	207,031,250	214,999,994	159,236,106	06/08/2023	06/11/2025	TRS Bond Index		(28,989,594)	G5695F-AA-6	MM Investment Holding Revolver Floating Line	2	214,999,994	188,225,700
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	18,018,000	18,605,400	17,005,881	06/20/2023	06/20/2030	Currency Swap		(114,209)	L3551F-AN-0	Ferrero International SA Gtd Senior Note Series B	2	18,041,100	17,120,090
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	40,404,000	41,721,200	38,103,329	06/20/2023	06/20/2033	Currency Swap	1,265,400	(664,472)	L3551F-AQ-3	Ferrero International SA Gtd Senior Note Series D	2	40,455,800	38,767,801
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	18,690,000	19,299,000	18,436,037	05/10/2023	05/12/2030	Currency Swap		(74,454)	L3009F-AA-6	Ergea Group S.A r.L. Guaranteed Secured Senior Notes Series A	2	18,918,000	18,510,491
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	25,563,500	26,233,850	23,482,044	05/16/2023	05/16/2033	Currency Swap		(387,003)	X20048-AA-2	Ciconia Investments Limi Senior Secured Notes	2	25,692,650	23,869,047
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	25,165,372	46,920,752	43,444,950	12/27/2023	12/29/2030	Currency Swap		(973,020)	912810-QK-7	US TREASURY N/B-BOND	1	46,570,380	44,417,970
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	169,455,467	120,594,727	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared		(48,860,740)	186858-AC-6	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	169,455,467	169,455,467

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STATEMENT AS OF SEPTEMBER 30, 2023 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	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		35,525,000	35,525,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				784662-MM-4	Cliffwater Corporate Lending Fund - Senior Secured Revolving Credit Facility	1	35,525,000	35,525,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,600,000	22,603,865	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				067932-AE-3	SSG CREDIT STRATEGIES VII ICAV - Senior Secured Revolving Loan Facility	1	22,600,000	22,603,865
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		12,500,000	12,492,836	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				724032-QQ-2	VPC ASSET BACKED OPPORTUNISTIC CREDIT Holdings Fund, L.P - Secured Revolving Loan Facility	1	12,500,000	12,492,836
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		12,375,000	12,375,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				784662-MM-4	PIONEERS GATE LLC 2023-9 OR SSG CREDIT STRATEGIES VII ICAV - Senior Secured Revolving Loan Facility	1	12,375,000	12,375,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	200,000,000	205,000,000	166,080,435	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared		(38,919,565)		90139E-AA-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	205,000,000	205,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	190,000,000	39,100,000	1,497,266	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared		(37,487,428)		87271L-AJ-1	Carlyle Aviation Runway PDP Fund LP - Revolving Promissary Note	1	39,100,000	38,984,694
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		58,000,000	58,000,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				14308B-AA-6	NXT Capital Structured Note I, LLC - Class A Secured Float Rate Revolving Loan	1	58,000,000	58,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		64,000,000	64,000,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				67080B-A*-8	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2022-3	1	64,000,000	64,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		31,000,000	31,000,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				89532E-AB-4	OHA Credit Solutions Master Fund I SPV, L.P. - Fund I Revolver	1	31,000,000	31,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	100,000,000	52,000,000	32,202,164	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared		(19,797,836)		66684E-AA-9	PCRED II HOLDING I LLC, PCRED II HOLDING I OFFSHORE LP and PCRED II HOLDCO ARGUS S.A R.L., -Term Loan Series 2022-2	1	52,000,000	52,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		54,301,573	55,000,000	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared				69325*-AG-8	MM Investment Holding Revolver Floating Line	2	54,301,573	55,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	150,000,000	154,999,996	106,038,875	04/10/2023	04/10/2053	Interest Rate Swap - SOFR CME cleared		(29,658,723)		65695E-AA-6	United States Treasury N-UNSECURED	1	154,999,996	135,697,598
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	300,000,000	182,125,466	157,329,844	08/07/2023	08/07/2043	Interest Rate Swap - SOFR CME cleared		15,439,224		912810-TG-3	Loan Asset Issuer LLC - Series 2023 NG-1A Class A Asset Backed Notes	1	182,125,466	141,890,620
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		124,000,000	118,542,190	08/07/2023	08/07/2043	Interest Rate Swap - SOFR CME cleared				53950U-AA-0	Loan Asset Issuer LLC - Series 2022 NG-2 Class A Asset Backed Notes	1	124,000,000	118,542,190
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		50,000,000	50,892,744	08/07/2023	08/07/2043	Interest Rate Swap - SOFR CME cleared				53946H-AA-6	US Treasury N/B-UNSECURED	1	50,000,000	50,892,744
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	615,000,000	283,062,774	234,650,902	08/07/2023	08/07/2042	Interest Rate Swap - SOFR CME cleared		29,918,473		912810-RU-4	United States Treasury N-UNSECURED	1	283,062,774	204,732,429
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		227,656,833	177,363,275	08/07/2023	08/07/2042	Interest Rate Swap - SOFR CME cleared				912810-TG-3	United States Treasury N-UNSECURED	1	227,656,833	177,363,275
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		223,103,696	173,816,010	08/07/2023	08/07/2042	Interest Rate Swap - SOFR CME cleared				912810-TG-3	Loan Asset Issuer LLC - Series 2022 NG-2 Class A Asset Backed Notes	1	223,103,696	173,816,010
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		50,000,000	50,892,744	08/07/2023	08/07/2042	Interest Rate Swap - SOFR CME cleared				53946H-AA-6	US Treasury N/B-UNSECURED	1	50,000,000	50,892,744
999999999 - Totals				37,457,500,322	25,597,643,652	XXX	XXX	XXX	(528,902,062)	(7,460,149,176)	XXX	XXX	XXX	XXX	37,986,402,384	33,057,792,828

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STATEMENT AS OF SEPTEMBER 30, 2023 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	188	37,405,606,742	200	39,052,997,808	206	36,459,698,648			188	37,405,606,742
2. Add: Opened or Acquired Transactions.....	14	528,448,264	13	1,636,203,508	4	1,216,837,158			31	3,381,488,931
3. Add: Increases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX	1,760,306,343	XXX	92,561,206	XXX	869,195,554	XXX		XXX	2,722,063,103
4. Less: Closed or Disposed of Transactions.....	2	76,025,530	7	2,554,565,786	4	582,668,714			13	3,213,260,030
5. Less: Positions Disposed of for Failing Effectiveness Criteria.....										
6. Less: Decreases in Replication (Synthetic Asset) Transactions Statement Value.....	XXX	565,338,011	XXX	1,767,498,088	XXX	505,562,328	XXX		XXX	2,838,398,428
7. Ending Inventory	200	39,052,997,808	206	36,459,698,648	206	37,457,500,318			206	37,457,500,318

STATEMENT AS OF SEPTEMBER 30, 2023 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - VERIFICATION

Verification of Book/Adjusted Carrying Value, Fair Value and Potential Exposure of all Open Derivative Contracts

	Book/Adjusted Carrying Value Check
1. Part A, Section 1, Column 14.....	8,400,872,436
2. Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance.....	.....
3. Total (Line 1 plus Line 2)	8,400,872,436
4. Part D, Section 1, Column 6	26,875,632,751
5. Part D, Section 1, Column 7	(18,487,074,718)
6. Total (Line 3 minus Line 4 minus Line 5)	12,314,404
	Fair Value Check
7. Part A, Section 1, Column 16	1,469,625,411
8. Part B, Section 1, Column 13	(12,314,391)
9. Total (Line 7 plus Line 8)	1,457,311,020
10. Part D, Section 1, Column 9	26,908,331,986
11. Part D, Section 1, Column 10	(25,451,020,965)
12. Total (Line 9 minus Line 10 minus Line 11) .....	.....
	Potential Exposure Check
13. Part A, Section 1, Column 21	5,398,173,365
14. Part B, Section 1, Column 20	58,758,663
15. Part D, Section 1, Column 12	5,456,932,028
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	4,623,151,857	1,774,108,873
2. Cost of cash equivalents acquired	184,693,200,886	208,610,013,923
3. Accrual of discount	188,209,438	
4. Unrealized valuation increase (decrease)	(104,649)	46,497,527
5. Total gain (loss) on disposals	(126,810)	(4,778,566)
6. Deduct consideration received on disposals	184,439,945,682	205,808,809,317
7. Deduct amortization of premium		
8. Total foreign exchange change in book/adjusted carrying value		6,119,417
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)	5,064,385,040	4,623,151,857
11. Deduct total nonadmitted amounts		
12. Statement value at end of current period (Line 10 minus Line 11)	5,064,385,040	4,623,151,857