



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

ANNUAL STATEMENT

FOR THE YEAR ENDED DECEMBER 31, 2021
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) 413-788-8411
Springfield, MA, US 01111 (Area Code) (Telephone Number)
(City or Town, State, Country and Zip Code)

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

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 Michael Robert Fanning, Head of MassMutual U.S. Melvin Timothy Corbett, Chief Investment Officer
Adnan Omar Ahmed, Head of MassMutual International Geoffrey James Craddock, Chief Risk Officer Pia Denise Flanagan, Head of Operations, CEO Action
Susan Marie Cicco, Head of Human Resources & Employee Experience Michael James O'Connor, General Counsel for Racial Equity.
Gareth Fielding Ross, Head of Enterprise Technology & Experience

DIRECTORS OR TRUSTEES

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

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.....

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSETS

	Current Year			Prior Year
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	4 Net Admitted Assets
1. Bonds (Schedule D)	124,286,602,019		124,286,602,019	114,683,944,351
2. Stocks (Schedule D):				
2.1 Preferred stocks	554,665,007		554,665,007	470,256,327
2.2 Common stocks	25,917,214,918	183,808	25,917,031,110	21,086,999,910
3. Mortgage loans on real estate (Schedule B):				
3.1 First liens	26,344,845,562		26,344,845,562	26,078,333,015
3.2 Other than first liens				
4. Real estate (Schedule A):				
4.1 Properties occupied by the company (less \$ encumbrances)	377,966,253		377,966,253	265,025,127
4.2 Properties held for the production of income (less \$892,100,000 encumbrances)	16,931,489		16,931,489	97,346,026
4.3 Properties held for sale (less \$ encumbrances)				
5. Cash (\$1,453,239,942, Schedule E - Part 1), cash equivalents (\$1,774,108,873, Schedule E - Part 2) and short-term investments (\$2,715,450,459, Schedule DA)	5,942,799,274		5,942,799,274	5,738,239,031
6. Contract loans (including \$ premium notes)	16,119,931,306	150,007	16,119,781,299	15,597,185,099
7. Derivatives (Schedule DB)	16,378,561,586		16,378,561,586	21,076,411,762
8. Other invested assets (Schedule BA)	12,601,759,357	56,271,383	12,545,487,974	9,533,622,734
9. Receivables for securities	1,287,124,292		1,287,124,292	1,501,252,903
10. Securities lending reinvested collateral assets (Schedule DL)				
11. Aggregate write-ins for invested assets				
12. Subtotals, cash and invested assets (Lines 1 to 11)	229,828,401,065	56,605,198	229,771,795,867	216,128,616,284
13. Title plants less \$ charged off (for Title insurers only)				
14. Investment income due and accrued	3,587,970,785	4,230,982	3,583,739,803	3,859,484,460
15. Premiums and considerations:				
15.1 Uncollected premiums and agents' balances in the course of collection	161,041,774	83,268	160,958,506	161,871,466
15.2 Deferred premiums and agents' balances and installments booked but deferred and not yet due (including \$ earned but unbilled premiums)	1,021,645,302		1,021,645,302	917,323,458
15.3 Accrued retrospective premiums (\$) and contracts subject to redetermination (\$)				
16. Reinsurance:				
16.1 Amounts recoverable from reinsurers	100,105,788	4,623,440	95,482,348	67,472,255
16.2 Funds held by or deposited with reinsured companies				
16.3 Other amounts receivable under reinsurance contracts	142,829,065		142,829,065	254,150,151
17. Amounts receivable relating to uninsured plans				
18.1 Current federal and foreign income tax recoverable and interest thereon	55,008,554		55,008,554	
18.2 Net deferred tax asset	709,692,126		709,692,126	508,589,555
19. Guaranty funds receivable or on deposit	8,391,196		8,391,196	11,751,145
20. Electronic data processing equipment and software	219,071,584	205,361,696	13,709,888	21,068,444
21. Furniture and equipment, including health care delivery assets (\$)	47,433,063	47,433,063		
22. Net adjustment in assets and liabilities due to foreign exchange rates				
23. Receivables from parent, subsidiaries and affiliates	127,639,697		127,639,697	54,499,315
24. Health care (\$) and other amounts receivable				
25. Aggregate write-ins for other than invested assets	4,203,752,625	1,087,242,572	3,116,510,053	2,508,581,328
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	240,212,982,624	1,405,580,219	238,807,402,404	224,493,407,863
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts	76,159,844,023		76,159,844,023	75,965,585,904
28. Total (Lines 26 and 27)	316,372,826,646	1,405,580,219	314,967,246,427	300,458,993,767
DETAILS OF WRITE-INS				
1101.				
1102.				
1103.				
1198. Summary of remaining write-ins for Line 11 from overflow page				
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above)				
2501. Corporate owned life insurance	2,667,336,639		2,667,336,639	2,421,839,515
2502. Fully refundable deposits, prepayments and miscellaneous assets	424,829,078	40,658,189	384,170,889	19,008,699
2503. Employee insurance plan advances	38,932,060	4,910	38,927,150	41,149,716
2598. Summary of remaining write-ins for Line 25 from overflow page	1,072,654,849	1,046,579,473	26,075,375	26,583,398
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above)	4,203,752,625	1,087,242,572	3,116,510,053	2,508,581,328

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

LIABILITIES, SURPLUS AND OTHER FUNDS

	1 Current Year	2 Prior Year
1. Aggregate reserve for life contracts \$ 134,668,226,295 (Exh. 5, Line 9999999) less \$ included in Line 6.3 (including \$ 137,798,649 Modco Reserve)	134,668,226,295	121,992,059,903
2. Aggregate reserve for accident and health contracts (including \$ Modco Reserve)	3,600,781,585	3,174,986,915
3. Liability for deposit-type contracts (Exhibit 7, Line 14, Col. 1) (including \$ Modco Reserve)	17,041,384,885	14,579,842,257
4. Contract claims:		
4.1 Life (Exhibit 8, Part 1, Line 4.4, Col. 1 less sum of Cols. 9, 10 and 11)	716,241,129	655,286,279
4.2 Accident and health (Exhibit 8, Part 1, Line 4.4, sum of Cols. 9, 10 and 11)	25,642,780	26,818,663
5. Policyholders' dividends/refunds to members \$ 9,927,208 and coupons \$ due and unpaid (Exhibit 4, Line 10)	9,927,208	2,456,410
6. Provision for policyholders' dividends, refunds to members and coupons payable in following calendar year - estimated amounts:		
6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$ Modco)	1,817,887,042	1,705,119,894
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 \$ 12,094,068 accident and health premiums (Exhibit 1, Part 1, Col. 1, sum of lines 4 and 14)	47,546,285	35,658,349
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	7,671,842	8,718,381
9.3 Other amounts payable on reinsurance, including \$ 28,945,013 assumed and \$ 70,681,710 ceded	99,626,723	89,276,918
9.4 Interest maintenance reserve (IMR, Line 6)	1,552,353,881	2,084,357,421
10. Commissions to agents due or accrued-life and annuity contracts \$ 31,761,798 accident and health \$ 139,632 and deposit-type contract funds \$	31,901,431	324,181
11. Commissions and expense allowances payable on reinsurance assumed	3,251,156	3,502,906
12. General expenses due or accrued (Exhibit 2, Line 12, Col. 7)	1,385,083,327	1,253,249,792
13. Transfers to Separate Accounts due or accrued (net) (including \$ (92,246,751) accrued for expense allowances recognized in reserves, net of reinsured allowances)	(103,155,236)	(103,546,435)
14. Taxes, licenses and fees due or accrued, excluding federal income taxes (Exhibit 3, Line 9, Col. 6)	92,894,406	56,442,035
15.1 Current federal and foreign income taxes, including \$ 0 on realized capital gains (losses)		670,233,140
15.2 Net deferred tax liability		
16. Unearned investment income	238,003,640	213,380,280
17. Amounts withheld or retained by reporting entity as agent or trustee	25,618,860	7,520,225
18. Amounts held for agents' account, including \$ agents' credit balances	432,802,377	414,032,550
19. Remittances and items not allocated	1,954,730,877	803,137,296
20. Net adjustment in assets and liabilities due to foreign exchange rates		
21. Liability for benefits for employees and agents if not included above	232,733,194	216,512,515
22. Borrowed money \$ 249,984,222 and interest thereon \$	249,984,222	249,989,854
23. Dividends to stockholders declared and unpaid		
24. Miscellaneous liabilities:		
24.01 Asset valuation reserve (AVR, Line 16, Col. 7)	6,414,184,335	5,205,048,230
24.02 Reinsurance in unauthorized and certified (\$) companies	122,421	135,677
24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers	7,757,716,485	6,450,994,969
24.04 Payable to parent, subsidiaries and affiliates	64,824,977	7,539,161
24.05 Drafts outstanding		
24.06 Liability for amounts held under uninsured plans		
24.07 Funds held under coinsurance	11,497,302,189	11,478,407,953
24.08 Derivatives	10,876,753,492	17,348,756,669
24.09 Payable for securities	12,694,663	76,943,917
24.10 Payable for securities lending		
24.11 Capital notes \$ and interest thereon \$		
25. Aggregate write-ins for liabilities	11,220,883,362	11,458,808,225
26. Total liabilities excluding Separate Accounts business (Lines 1 to 25)	211,975,619,833	200,165,994,528
27. From Separate Accounts Statement	76,012,370,602	75,965,585,904
28. Total liabilities (Lines 26 and 27)	287,987,990,435	276,131,580,432
29. Common capital stock		
30. Preferred capital stock		
31. Aggregate write-ins for other than special surplus funds		
32. Surplus notes	4,613,461,848	3,772,729,993
33. Gross paid in and contributed surplus (Page 3, Line 33, Col. 2 plus Page 4, Line 51.1, Col. 1)		
34. Aggregate write-ins for special surplus funds	3,250,000	3,250,000
35. Unassigned funds (surplus)	22,362,544,143	20,551,433,342
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 \$ 147,473,420 in Separate Accounts Statement)	26,979,255,992	24,327,413,335
38. Totals of Lines 29, 30 and 37 (Page 4, Line 55)	26,979,255,992	24,327,413,335
39. Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	314,967,246,427	300,458,993,767
DETAILS OF WRITE-INS		
2501. Derivative collateral	6,157,803,850	5,550,937,332
2502. Repurchase agreements	2,802,264,186	4,007,031,628
2503. Derivative accrued interest	1,769,379,570	1,606,535,499
2598. Summary of remaining write-ins for Line 25 from overflow page	491,435,755	294,303,766
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above)	11,220,883,362	11,458,808,225
3101.		
3102.		
3103.		
3198. Summary of remaining write-ins for Line 31 from overflow page		
3199. Totals (Lines 3101 thru 3103 plus 3198)(Line 31 above)		
3401. Designated surplus for group annuities	2,500,000	2,500,000
3402. Designated surplus for separate account business	750,000	750,000
3403.		
3498. Summary of remaining write-ins for Line 34 from overflow page		
3499. Totals (Lines 3401 thru 3403 plus 3498)(Line 34 above)	3,250,000	3,250,000

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SUMMARY OF OPERATIONS

	1 Current Year	2 Prior Year
1. Premiums and annuity considerations for life and accident and health contracts (Exhibit 1, Part 1, Line 20.4, Col. 1, less Col. 11)	19,867,980,547	10,275,043,994
2. Considerations for supplementary contracts with life contingencies	22,983,412	48,128,890
3. Net investment income (Exhibit of Net Investment Income, Line 17)	8,695,509,359	8,641,485,659
4. Amortization of Interest Maintenance Reserve (IMR, Line 5)	149,913,026	110,580,552
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(809,011)	
6. Commissions and expense allowances on reinsurance ceded (Exhibit 1, Part 2, Line 26.1, Col. 1)	430,087,792	2,693,100,880
7. Reserve adjustments on reinsurance ceded	(26,907,697)	(23,655,168)
8. Miscellaneous Income:		
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	257,209,606	405,531,185
8.2 Charges and fees for deposit-type contracts		
8.3 Aggregate write-ins for miscellaneous income	592,352,641	650,513,146
9. Total (Lines 1 to 8.3)	29,988,319,675	22,800,729,137
10. Death benefits	2,413,896,750	2,238,051,114
11. Matured endowments (excluding guaranteed annual pure endowments)	13,068,360	16,545,466
12. Annuity benefits (Exhibit 8, Part 2, Line 6.4, Cols. 4 + 8)	2,237,998,137	2,390,934,737
13. Disability benefits and benefits under accident and health contracts	370,223,560	382,243,868
14. Coupons, guaranteed annual pure endowments and similar benefits		
15. Surrender benefits and withdrawals for life contracts	6,086,403,189	19,247,330,548
16. Group conversions		
17. Interest and adjustments on contract or deposit-type contract funds	362,157,341	474,210,694
18. Payments on supplementary contracts with life contingencies	23,739,019	21,356,381
19. Increase in aggregate reserves for life and accident and health contracts	13,093,329,810	(5,319,239,250)
20. Totals (Lines 10 to 19)	24,600,816,166	19,451,433,559
21. Commissions on premiums, annuity considerations, and deposit-type contract funds (direct business only) (Exhibit 1, Part 2, Line 31, Col. 1)	1,164,362,836	1,032,336,037
22. Commissions and expense allowances on reinsurance assumed (Exhibit 1, Part 2, Line 26.2, Col. 1)	59,451,679	58,805,725
23. General insurance expenses and fraternal expenses (Exhibit 2, Line 10, Cols. 1, 2, 3, 4 and 6)	2,270,386,225	2,394,386,534
24. Insurance taxes, licenses and fees, excluding federal income taxes (Exhibit 3, Line 7, Cols. 1 + 2 + 3 + 5)	326,354,324	275,117,451
25. Increase in loading on deferred and uncollected premiums	5,593,436	13,197,693
26. Net transfers to or (from) Separate Accounts net of reinsurance	(1,441,565,233)	(3,646,073,474)
27. Aggregate write-ins for deductions	805,197,597	587,266,846
28. Totals (Lines 20 to 27)	27,790,597,031	20,166,470,372
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	2,197,722,644	2,634,258,765
30. Dividends to policyholders and refunds to members	1,808,135,960	1,697,380,641
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	389,586,684	936,878,125
32. Federal and foreign income taxes incurred (excluding tax on capital gains)	71,632,677	134,792,230
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)	317,954,007	802,085,895
34. Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital gains tax of \$41,335,187 (excluding taxes of \$45,031,792 transferred to the IMR)	(534,360,828)	(586,175,280)
35. Net income (Line 33 plus Line 34)	(216,406,821)	215,910,615
CAPITAL AND SURPLUS ACCOUNT		
36. Capital and surplus, December 31, prior year (Page 3, Line 38, Col. 2)	24,327,413,335	18,892,910,171
37. Net income (Line 35)	(216,406,821)	215,910,615
38. Change in net unrealized capital gains (losses) less capital gains tax of \$521,445,111	3,365,774,080	1,421,779,174
39. Change in net unrealized foreign exchange capital gain (loss)	(673,352,955)	1,009,504,915
40. Change in net deferred income tax	543,739,109	(22,692,987)
41. Change in nonadmitted assets	19,624,116	50,501,209
42. Change in liability for reinsurance in unauthorized and certified companies	13,256	26,694
43. Change in reserve on account of change in valuation basis, (increase) or decrease		(48,425,000)
44. Change in asset valuation reserve	(1,209,136,105)	(534,863,914)
45. Change in treasury stock (Page 3, Lines 36.1 and 36.2, Col. 2 minus Col. 1)		
46. Surplus (contributed to) withdrawn from Separate Accounts during period	(150,000,000)	
47. Other changes in surplus in Separate Accounts Statement	148,282,431	
48. Change in surplus notes	840,731,855	1,537,330,284
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	(17,426,309)	1,805,432,173
54. Net change in capital and surplus for the year (Lines 37 through 53)	2,651,842,656	5,434,503,164
55. Capital and surplus, December 31, current year (Lines 36 + 54) (Page 3, Line 38)	26,979,255,991	24,327,413,335
DETAILS OF WRITE-INS		
08.301. Management and administrative fees	327,314,386	304,959,901
08.302. Change in corporate owned life insurance	266,870,737	139,549,407
08.303. Experience refunds on reinsurance contracts	93,714,575	99,624,913
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	(95,547,057)	106,378,925
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398)(Line 8.3 above)	592,352,641	650,513,146
2701. Ceded income on funds withheld	754,915,197	343,564,217
2702. Change in liability for employee/agent benefit plans	67,382,464	50,853,866
2703. Miscellaneous charges to operations	55,995,047	56,689,210
2798. Summary of remaining write-ins for Line 27 from overflow page	(73,095,111)	136,159,553
2799. Totals (Lines 2701 thru 2703 plus 2798)(Line 27 above)	805,197,597	587,266,846
5301. Deferred gain on reinsurance ceded	(70,479,015)	1,662,259,416
5302. Other changes in surplus	31,787,729	32,129,727
5303. Change in minimum pension liability	21,264,977	111,043,030
5398. Summary of remaining write-ins for Line 53 from overflow page		
5399. Totals (Lines 5301 thru 5303 plus 5398)(Line 53 above)	(17,426,309)	1,805,432,173

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

CASH FLOW

	1	2
	Current Year	Prior Year
Cash from Operations		
1. Premiums collected net of reinsurance	19,016,605,795	16,109,561,276
2. Net investment income	9,237,875,323	7,281,442,469
3. Miscellaneous income	1,216,591,630	3,641,620,813
4. Total (Lines 1 through 3)	29,471,072,748	27,032,624,558
5. Benefit and loss related payments	11,348,598,276	24,242,706,403
6. Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(1,129,486,910)	(4,019,907,451)
7. Commissions, expenses paid and aggregate write-ins for deductions	4,554,289,205	2,872,667,317
8. Dividends paid to policyholders	1,687,898,014	1,673,553,297
9. Federal and foreign income taxes paid (recovered) net of \$(258,857,671) tax on capital gains (losses)	848,515,206	(141,754,982)
10. Total (Lines 5 through 9)	17,309,813,791	24,627,264,584
11. Net cash from operations (Line 4 minus Line 10)	12,161,258,957	2,405,359,974
Cash from Investments		
12. Proceeds from investments sold, matured or repaid:		
12.1 Bonds	37,911,439,932	23,127,707,516
12.2 Stocks	629,126,523	554,149,210
12.3 Mortgage loans	4,889,448,336	4,097,828,233
12.4 Real estate	75,387,206	952,949
12.5 Other invested assets	1,629,188,561	1,051,109,632
12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	12,177,704	(8,170,597)
12.7 Miscellaneous proceeds	(305,410,969)	2,405,853,395
12.8 Total investment proceeds (Lines 12.1 to 12.7)	44,841,357,293	31,229,430,338
13. Cost of investments acquired (long-term only):		
13.1 Bonds	47,343,011,600	38,209,254,973
13.2 Stocks	4,481,057,055	2,323,583,342
13.3 Mortgage loans	5,170,406,661	4,293,148,419
13.4 Real estate	174,082,441	120,079,851
13.5 Other invested assets	4,032,799,863	1,847,429,323
13.6 Miscellaneous applications	(19,983,770)	351,422,238
13.7 Total investments acquired (Lines 13.1 to 13.6)	61,181,373,850	47,144,918,146
14. Net increase (decrease) in contract loans and premium notes	522,273,694	872,006,901
15. Net cash from investments (Line 12.8 minus Line 13.7 minus Line 14)	(16,862,290,251)	(16,787,494,709)
Cash from Financing and Miscellaneous Sources		
16. Cash provided (applied):		
16.1 Surplus notes, capital notes	607,214,750	697,116,000
16.2 Capital and paid in surplus, less treasury stock		
16.3 Borrowed funds	(1,465)	363,785
16.4 Net deposits on deposit-type contracts and other insurance liabilities	2,358,979,535	(1,030,569,145)
16.5 Dividends to stockholders		
16.6 Other cash provided (applied)	1,939,398,717	16,660,364,128
17. Net cash from financing and miscellaneous sources (Lines 16.1 to 16.4 minus Line 16.5 plus Line 16.6)	4,905,591,537	16,327,274,768
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)	204,560,243	1,945,140,033
19. Cash, cash equivalents and short-term investments:		
19.1 Beginning of year	5,738,239,031	3,793,098,998
19.2 End of year (Line 18 plus Line 19.1)	5,942,799,274	5,738,239,031

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

20.0001. Premium income recognized for group annuity contracts	1,236,691,127	1,250,093,997
20.0002. Bonds received as consideration for group annuity contracts	1,231,331,225	1,250,093,997
20.0003. Bond conversions and refinancing	728,694,414	4,922,572,255
20.0004. Premium ceded in exchange for invested assets	514,062,514	11,197,128,818
20.0005. Bonds transferred in exchange for premium ceded	511,092,839	9,378,808,608
20.0006. Change in market value of corporate owned life insurance	271,872,643	140,088,455
20.0007. Surplus notes issued in exchange for bonds	233,056,607	837,205,167
20.0008. Bonds received as consideration for surplus notes	233,056,607	837,205,167
20.0009. Transfer of Bonds to Cash Equivalents	150,000,000	
20.0010. Stock conversion	106,924,558	78,887,581
20.0011. Exchange of mortgage loans for other assets	18,380,541	
20.0012. Net investment income payment in-kind bonds	16,245,620	12,217,692
20.0013. Transfer of mortgage loans to partnerships and LLCs	11,331,264	353,344,560

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

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

20.0014. Common stock received as consideration for group annuity contracts	5,359,902	
20.0015. Transfer of stocks to partnerships	3,803,184	
20.0016. Stock transferred in exchange for premium ceded	2,969,675	
20.0017. Dividend reinvestment	355,601	93,790
20.0018. Premium income recognized for individual annuity contracts		3,720,969,355
20.0019. Bonds received as consideration for individual annuity contracts		3,720,041,355
20.0020. Mortgage loans transferred in exchange for premium ceded		1,725,451,598
20.0021. Preferred stock transferred in exchange for premium ceded		92,868,611
20.0022. Assets received in-kind for bond maturity		56,730,564
20.0023. Preferred stock received as consideration for individual annuity contracts		928,000

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - SUMMARY

	1	2	3	4	5	6	7	8	9
	Total	Individual Life	Group Life	Individual Annuities	Group Annuities	Accident and Health	Fraternal	Other Lines of Business	YRT Mortality Risk Only
1. Premiums and annuity considerations for life and accident and health contracts	19,867,980,547	10,177,096,901	95,921,786	4,530,057,897	4,388,506,683	676,397,280			
2. Considerations for supplementary contracts with life contingencies	22,983,412	XXX	XXX	22,983,412		XXX	XXX		XXX
3. Net investment income	8,695,509,360	5,155,887,680	639,628,355	1,219,908,592	1,419,685,316	260,399,416			
4. Amortization of Interest Maintenance Reserve (IMR)	149,913,026	101,987,594	(1,345,993)	11,510,110	35,054,624	2,706,692			
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(809,011)	(503,370)	(47,705)	(109,176)	(83,590)	(65,170)	XXX		
6. Commissions and expense allowances on reinsurance ceded	430,087,791	197,274,049		57,340,757	162,054,169	13,418,816	XXX		
7. Reserve adjustments on reinsurance ceded	(26,907,697)	(37,795,582)	10,887,885				XXX		
8. Miscellaneous Income:									
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	257,209,606	48,140,155	19,714,859	178,880,353	10,474,239		XXX		
8.2 Charges and fees for deposit-type contracts						XXX	XXX		
8.3 Aggregate write-ins for miscellaneous income	592,352,641	398,042,901	6,642,240	77,037,010	94,241,512	16,388,977			
9. Totals (Lines 1 to 8.3)	29,988,319,675	16,040,130,328	771,401,427	6,097,608,956	6,109,932,953	969,246,011			
10. Death benefits	2,413,896,750	2,255,329,121	158,567,629			XXX	XXX		
11. Matured endowments (excluding guaranteed annual pure endowments)	13,068,360	13,068,360				XXX	XXX		
12. Annuity benefits	2,237,998,137	XXX	XXX	775,236,183	1,462,761,954	XXX	XXX		XXX
13. Disability benefits and benefits under accident and health contracts	370,223,560	28,502,750	202,574			341,518,237	XXX		
14. Coupons, guaranteed annual pure endowments and similar benefits							XXX		
15. Surrender benefits and withdrawals for life contracts	6,086,403,189	1,621,736,297	12,116,466	2,339,269,937	2,113,280,489	XXX	XXX		
16. Group conversions							XXX		
17. Interest and adjustments on contract or deposit-type contract funds	362,157,341	32,384,023	1,282,381	75,975,846	252,512,540	2,553	XXX		
18. Payments on supplementary contracts with life contingencies	23,739,019			23,739,019		XXX	XXX		
19. Increase in aggregate reserves for life and accident and health contracts	13,093,329,810	7,566,681,153	486,581,978	3,041,892,347	1,598,880,460	399,293,872	XXX		
20. Totals (Lines 10 to 19)	24,600,816,166	11,517,701,703	658,751,028	6,256,113,331	5,427,435,443	740,814,661	XXX		
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	1,164,362,836	794,745,795	21,580,267	177,107,171	92,636,719	78,292,885			XXX
22. Commissions and expense allowances on reinsurance assumed	59,451,679	6,926,626	6,371,086		46,153,967		XXX		
23. General insurance expenses and fraternal expenses	2,270,386,225	1,699,871,809	39,694,952	228,843,666	102,904,995	199,070,803			
24. Insurance taxes, licenses and fees, excluding federal income taxes	326,354,324	282,736,139	2,170,553	10,371,178	7,014,986	24,061,468			
25. Increase in loading on deferred and uncollected premiums	5,593,436	5,681,350				(87,913)	XXX		
26. Net transfers to or (from) Separate Accounts net of reinsurance	(1,441,565,233)	6,981,498	(13,235,250)	(1,279,972,068)	(155,339,412)		XXX		
27. Aggregate write-ins for deductions	805,197,597	273,979,463	455,639	281,969,759	247,968,790	823,946			
28. Totals (Lines 20 to 27)	27,790,597,031	14,588,624,382	715,788,274	5,674,433,037	5,768,775,488	1,042,975,850			
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	2,197,722,644	1,451,505,946	55,613,153	423,175,919	341,157,465	(73,729,839)			
30. Dividends to policyholders and refunds to members	1,808,135,960	1,774,725,812	2,652,709	746,803	(10,750)	30,021,385	XXX		
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	389,586,685	(323,219,866)	52,960,444	422,429,116	341,168,216	(103,751,225)			
32. Federal income taxes incurred (excluding tax on capital gains)	71,632,677	(69,372,678)	10,854,832	81,090,406	64,760,447	(15,700,330)			
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)	317,954,008	(253,847,188)	42,105,612	341,338,709	276,407,769	(88,050,894)			
34. Policies/certificates in force end of year	4,620,226	1,933,991	103,593	268,991	1,986,602	327,049	XXX		
DETAILS OF WRITE-INS									
08.301. Management and administrative fees	327,314,386	8,798,960	(620,498)	33,750	319,102,174				
08.302. Change in corporate owned life insurance	266,870,737	201,585,435	77,211	39,100,405	20,962,279	5,145,407			
08.303. Experience refunds on reinsurance contract	93,714,575	93,714,575							
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	(95,547,057)	93,943,932	7,185,526	37,902,856	(245,822,941)	11,243,571			
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	592,352,641	398,042,901	6,642,240	77,037,010	94,241,512	16,388,977			
2701. Ceded income on funds withheld	754,915,197	215,608,610		267,825,315	271,481,272				
2702. Change in liability for employee/agent benefit plans	67,382,464	67,382,464							
2703. Miscellaneous charges to operations	55,995,046	4,395,474	455,639	14,144,444	36,175,543	823,946			
2798. Summary of remaining write-ins for Line 27 from overflow page	(73,095,111)	(13,407,086)			(59,688,025)				
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	805,197,597	273,979,463	455,639	281,969,759	247,968,790	823,946			

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - INDIVIDUAL LIFE INSURANCE (b)

	1	2	3	4	5	6	7	8	9	10	11	12
	Total	Industrial Life	Whole Life	Term Life	Indexed Life	Universal Life	Universal Life With Secondary Guarantees	Variable Life	Variable Universal Life	Credit Life (c)	Other Individual Life	YRT Mortality Risk Only
1. Premiums for life contracts (a)	10,177,096,901		7,344,904,400	92,714,639		2,401,228,431	175,799,216	223,604	57,308,258		104,918,353	
2. Considerations for supplementary contracts with life contingencies	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3. Net investment income	5,155,887,680		3,824,189,031	(30,280,798)		871,464,764	332,545,276	(664,320)	28,326,086		130,307,640	
4. Amortization of Interest Maintenance Reserve (IMR)	101,987,594		64,677,841	1,092,315		32,858,557	5,238,814	27,849	1,713,973		(3,621,755)	
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(503,370)		(666,021)	38,289		176,266	49,651	922	41,808		(144,285)	
6. Commissions and expense allowances on reinsurance ceded	197,274,049		30,013,647	153,938,624		6,411,230	3,978,559		2,931,990			
7. Reserve adjustments on reinsurance ceded	(37,795,582)		(451,927)			(2,547,787)			(34,795,868)			
8. Miscellaneous Income:												
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	48,140,155							66,839	48,073,316			
8.2 Charges and fees for deposit-type contracts												
8.3 Aggregate write-ins for miscellaneous income	398,042,901		266,910,482	(4,757,904)		118,040,291	847,059	(112,796)	(1,884,497)		19,000,267	
9. Totals (Lines 1 to 8.3)	16,040,130,328		11,529,577,453	212,745,163		3,427,631,751	518,458,576	(457,901)	101,715,066		250,460,219	
10. Death benefits	2,255,329,121		1,862,454,357	37,870,334		120,889,006	198,089,882	(43,058)	36,048,662		19,938	
11. Matured endowments (excluding guaranteed annual pure endowments)	13,068,360		13,068,360									
12. Annuity benefits	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
13. Disability benefits and benefits under accident and health contracts	28,502,750		1,164,870	5,082		65,921	135,088	5,076	231,004		26,895,708	
14. Coupons, guaranteed annual pure endowments and similar benefits												
15. Surrender benefits and withdrawals for life contracts	1,621,736,297		1,565,997,457	(82)		9,146,033	16,760,825	335,522	29,496,543			
16. Group conversions												
17. Interest and adjustments on contract or deposit-type contract funds	32,384,023		30,919,755	896,387		1,226,220	329,690	(301)	270,083		(1,257,812)	
18. Payments on supplementary contracts with life contingencies			21,064	(21,064)								
19. Increase in aggregate reserves for life and accident and health contracts	7,566,681,153		4,548,391,863	10,178,812		2,718,342,811	237,581,537	146,412	19,802,310		32,237,407	
20. Totals (Lines 10 to 19)	11,517,701,703		8,022,017,726	48,929,469		2,849,669,992	452,897,022	443,651	85,848,602		57,895,242	
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	794,745,795		640,839,026	45,332,129		75,381,728	13,493,075	39	9,442,171		10,257,627	XXX
22. Commissions and expense allowances on reinsurance assumed	6,926,626						6,926,626					
23. General insurance expenses	1,699,871,809		1,214,071,878	291,036,741		99,783,768	57,024,519	59,466	31,169,878		6,725,558	
24. Insurance taxes, licenses and fees, excluding federal income taxes	282,736,139		186,253,174	24,207,032		58,777,709	8,311,234	5,220	3,072,905		2,108,866	
25. Increase in loading on deferred and uncollected premiums	5,681,350		18,054,468	(13,042,521)				(1,190)	670,593			
26. Net transfers to or (from) Separate Accounts net of reinsurance	6,981,498							(186,441)	7,167,938			
27. Aggregate write-ins for deductions	273,979,463		89,837,401	(7,727,351)		197,554,854	(5,466,750)	(9,340)	(1,673,896)		1,464,544	
28. Totals (Lines 20 to 27)	14,588,624,382		10,171,073,672	388,735,498		3,281,168,051	533,185,726	311,405	135,027,598		79,122,431	
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	1,451,505,946		1,358,503,781	(175,990,335)		146,463,700	(14,727,151)	(769,305)	(33,312,532)		171,337,788	
30. Dividends to policyholders and refunds to members	1,774,725,812		1,773,558,011	1,191,730		(23,849)					(79)	
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	(323,219,866)		(415,054,229)	(177,182,065)		146,487,549	(14,727,151)	(769,305)	(33,312,532)		171,337,867	
32. Federal income taxes incurred (excluding tax on capital gains)	(69,372,678)		(88,196,274)	(36,315,435)		30,024,253	(3,018,493)	(157,678)	(6,827,774)		35,118,723	
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)	(253,847,188)		(326,857,956)	(140,866,630)		116,463,296	(11,708,657)	(611,628)	(26,484,758)		136,219,144	
34. Policies/certificates in force end of year	1,933,991		1,248,452	526,709		80,459	49,189	55	29,127			
DETAILS OF WRITE-INS												
08.301. Change in corporate owned life insurance	201,585,435		145,347,954	(42,918)		47,752,871	6,640,996	1,617	868,233		1,016,682	
08.302. Experience refunds on reinsurance contract	93,714,575		5,843,225			87,871,350						
08.303. Miscellaneous	91,618,906		106,950,855	(4,714,986)		(17,583,930)	(5,872,077)	(114,413)	(5,030,127)		17,983,584	
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	11,123,986		8,768,447			78,141			2,277,398			
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	398,042,901		266,910,482	(4,757,904)		118,040,291	847,059	(112,796)	(1,884,497)		19,000,267	
2701. Ceded income on funds withheld	215,608,610		16,318,577			199,290,033						
2702. Change in liability for employee/agent benefit plans	67,382,464		67,382,464									
2703. Miscellaneous charges to operations	4,395,474		6,136,360	(390,666)		(1,735,179)	(496,171)	(9,340)	(574,074)		1,464,544	
2798. Summary of remaining write-ins for Line 27 from overflow page	(13,407,086)		(7,336,685)			(4,970,579)			(1,099,822)			
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	273,979,463		89,837,401	(7,727,351)		197,554,854	(5,466,750)	(9,340)	(1,673,896)		1,464,544	

(a) Include premium amounts for preneed plans included in Line 1

(b) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

(c) Individual and Group Credit Life are combined and included on page. (Indicate whether included with Individual or Group.)

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - GROUP LIFE INSURANCE (c)

	1	2	3	4	5	6	7	8	9
	Total	Whole Life	Term Life	Universal Life	Variable Life	Variable Universal Life	Credit Life (d)	Other Group Life (a)	YRT Mortality Risk Only
1. Premiums for life contracts (b)	95,921,786	56,312,900		5,829,410		32,842,105		937,370	
2. Considerations for supplementary contracts with life contingencies	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3. Net investment income	639,628,355	611,080,101		9,249,990		19,298,265			
4. Amortization of Interest Maintenance Reserve (IMR)	(1,345,993)	(648,737)		(230,934)		(466,322)			
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(47,705)	(20,396)		(9,654)		(17,655)			
6. Commissions and expense allowances on reinsurance ceded									
7. Reserve adjustments on reinsurance ceded	10,887,885					10,887,885			
8. Miscellaneous Income:									
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	19,714,859					19,714,859			
8.2 Charges and fees for deposit-type contracts									
8.3 Aggregate write-ins for miscellaneous income	6,642,240	3,465,606		1,292,259		1,884,375			
9. Totals (Lines 1 to 8.3)	771,401,427	670,189,474		16,131,071		84,143,511		937,370	
10. Death benefits	158,567,629	109,788,171		(167,735)		48,947,194			
11. Matured endowments (excluding guaranteed annual pure endowments)									
12. Annuity benefits	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
13. Disability benefits and benefits under accident and health contracts	202,574	74,182		41,396		79,319		7,676	
14. Coupons, guaranteed annual pure endowments and similar benefits									
15. Surrender benefits and withdrawals for life contracts	12,116,466	820,550		1,418,518		9,877,398			
16. Group conversions									
17. Interest and adjustments on contract or deposit-type contract funds	1,282,381	688,756		8,902		584,723			
18. Payments on supplementary contracts with life contingencies									
19. Increase in aggregate reserves for life and accident and health contracts	486,581,978	486,774,371		(833,591)		506,198		135,000	
20. Totals (Lines 10 to 19)	658,751,028	598,146,030		467,489		59,994,832		142,676	
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	21,580,267	16,262,105		699,854		4,298,399		319,909	XXX
22. Commissions and expense allowances on reinsurance assumed	6,371,086					6,371,086			
23. General insurance expenses	39,694,952	26,733,486		1,728,145		11,167,856		65,465	
24. Insurance taxes, licenses and fees, excluding federal income taxes	2,170,553	240,519		330,228		1,580,900		18,906	
25. Increase in loading on deferred and uncollected premiums									
26. Net transfers to or (from) Separate Accounts net of reinsurance	(13,235,250)					(13,235,250)			
27. Aggregate write-ins for deductions	455,639	221,773		111,886		121,980			
28. Totals (Lines 20 to 27)	715,788,274	641,603,912		3,337,603		70,299,803		546,957	
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	55,613,153	28,585,563		12,793,469		13,843,708		390,413	
30. Dividends to policyholders and refunds to members	2,652,709	2,652,709							
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	52,960,444	25,932,854		12,793,469		13,843,708		390,413	
32. Federal income taxes incurred (excluding tax on capital gains)	10,854,832	5,315,227		2,622,164		2,917,442			
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)	42,105,612	20,617,627		10,171,305		10,926,267		390,413	
34. Policies/certificates in force end of year	103,593	68,856		12,105		22,632			
DETAILS OF WRITE-INS									
08.301. Miscellaneous	6,967,060	3,561,851		1,204,539		2,200,669			
08.302. Revenue sharing	218,466					218,466			
08.303. Change in corporate owned life insurance	77,211	(96,246)		87,720		85,736			
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	(620,498)					(620,498)			
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	6,642,240	3,465,606		1,292,259		1,884,375			
2701. Miscellaneous charges to operations	455,639	221,773		111,886		121,980			
2702.									
2703.									
2798. Summary of remaining write-ins for Line 27 from overflow page									
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	455,639	221,773		111,886		121,980			

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

(b) Include premium amounts for preneed plans included in Line 1 _____

(c) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected. _____

(d) Individual and Group Credit Life are combined and included on _____ page. (Indicate whether included with Individual or Group.)

**ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - INDIVIDUAL ANNUITIES (a)**

	1 Total	Deferred				6 Life Contingent Payout (Immediate and Annuities)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees	5 Variable Annuities Without Guarantees		
1. Premiums for individual annuity contracts	4,530,057,897	3,238,688,096		379,867,418	247,213	911,255,170	
2. Considerations for supplementary contracts with life contingencies	22,983,412	XXX	XXX	XXX	XXX	22,983,412	XXX
3. Net investment income	1,219,908,592	610,321,164		121,929,799	1,770,792	364,843,845	121,042,992
4. Amortization of Interest Maintenance Reserve (IMR)	11,510,110	4,296,229		537,185	(60,508)	6,737,205	
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(109,176)	(36,235)		(16,796)	(2,175)	(53,969)	
6. Commissions and expense allowances on reinsurance ceded	57,340,757	57,340,757					
7. Reserve adjustments on reinsurance ceded							
8. Miscellaneous Income:							
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	178,880,353			178,486,171	824,669	(430,487)	
8.2 Charges and fees for deposit-type contracts							
8.3 Aggregate write-ins for miscellaneous income	77,037,010	14,273,962		26,676,839	562,286	33,262,836	2,261,088
9. Totals (Lines 1 to 8.3)	6,097,608,956	3,924,883,972		707,480,616	3,342,277	1,338,598,012	123,304,080
10. Death benefits							
11. Matured endowments (excluding guaranteed annual pure endowments)							
12. Annuity benefits	775,236,183	93,604,155		141,853,352	2,044,795	537,733,881	
13. Disability benefits and benefits under accident and health contracts							
14. Coupons, guaranteed annual pure endowments and similar benefits							
15. Surrender benefits and withdrawals for life contracts	2,339,269,937	751,019,931		1,582,222,870	6,189,263	(162,127)	
16. Group conversions							
17. Interest and adjustments on contract or deposit-type contract funds	75,975,846	424,709		378,161	2,253	124,354	75,046,368
18. Payments on supplementary contracts with life contingencies	23,739,019					23,739,019	
19. Increase in aggregate reserves for life and accident and health contracts	3,041,892,347	2,490,438,880		(198,165,219)	(19,834)	749,638,520	
20. Totals (Lines 10 to 19)	6,256,113,331	3,335,487,676		1,526,289,164	8,216,477	1,311,073,647	75,046,368
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	177,107,171	99,637,828		29,873,465	8,728	47,587,150	
22. Commissions and expense allowances on reinsurance assumed							
23. General insurance expenses	228,843,666	70,317,981		75,826,884	851,149	73,662,887	8,184,765
24. Insurance taxes, licenses and fees, excluding federal income taxes	10,371,178	2,853,524		1,712,225	33,358	5,194,864	577,207
25. Increase in loading on deferred and uncollected premiums							
26. Net transfers to or (from) Separate Accounts net of reinsurance	(1,279,972,068)	2,431,874		(1,268,024,787)	(7,925,556)	(6,453,599)	
27. Aggregate write-ins for deductions	281,969,759	292,796,624		(11,466,336)	19,435	620,036	
28. Totals (Lines 20 to 27)	5,674,433,037	3,803,525,507		354,210,615	1,203,590	1,431,684,984	83,808,340
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	423,175,919	121,358,465		353,270,000	2,138,687	(93,086,972)	39,495,740
30. Dividends to policyholders and refunds to members	746,803	660,295				86,508	
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	422,429,116	120,698,169		353,270,000	2,138,687	(93,173,480)	39,495,740
32. Federal income taxes incurred (excluding tax on capital gains)	81,090,406	24,738,432		72,406,616	438,348	(6,815,289)	(9,677,701)
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)	341,338,709	95,959,737		280,863,384	1,700,339	(86,358,191)	49,173,440
34. Policies/certificates in force end of year	268,991	94,772		120,043	1,497	52,679	
DETAILS OF WRITE-INS							
08.301. Change in corporate owned life insurance	39,100,405	9,406,541		1,802,991	5,108	27,885,764	
08.302. Revenue sharing	20,648,650			20,294,424	286,777	67,449	
08.303. Miscellaneous	17,254,206	4,867,420		4,579,424	270,400	5,275,873	2,261,088
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	33,750					33,750	
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	77,037,010	14,273,962		26,676,839	562,286	33,262,836	2,261,088
2701. Ceded income on funds withheld	267,825,315	267,825,315					
2702. Miscellaneous charges to operations	14,144,444	24,971,309		(11,466,336)	19,435	620,036	
2703.							
2798. Summary of remaining write-ins for Line 27 from overflow page							
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	281,969,759	292,796,624		(11,466,336)	19,435	620,036	

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - GROUP ANNUITIES (a)

	1 Total	Deferred				6 Life Contingent Payout (Immediate and Annuityizations)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees	5 Variable Annuities Without Guarantees		
1. Premiums for group annuity contracts	4,388,506,683	69,577,598		1,924,831,114	30,341,612	2,363,756,359	
2. Considerations for supplementary contracts with life contingencies		XXX	XXX	XXX	XXX		XXX
3. Net investment income	1,419,685,316	246,814,748		54,030,324	(8,443,567)	686,759,057	440,524,754
4. Amortization of Interest Maintenance Reserve (IMR)	35,054,624	10,195,502		7,741,017	320,101	10,607,749	6,190,254
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(83,590)			(50,695)	10,971	(23,839)	(20,027)
6. Commissions and expense allowances on reinsurance ceded	162,054,169				130,739,019	31,315,151	
7. Reserve adjustments on reinsurance ceded							
8. Miscellaneous Income:							
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts	10,474,239			(4,725,306)			15,199,545
8.2 Charges and fees for deposit-type contracts							
8.3 Aggregate write-ins for miscellaneous income	94,241,512	5,294,709		151,298,165	84,876,468	25,109,768	(172,337,599)
9. Totals (Lines 1 to 8.3)	6,109,932,953	331,882,558		2,133,124,619	237,844,604	3,117,524,245	289,556,927
10. Death benefits							
11. Matured endowments (excluding guaranteed annual pure endowments)							
12. Annuity benefits	1,462,761,954			71,164,266	(6,285)	1,391,603,972	
13. Disability benefits and benefits under accident and health contracts							
14. Coupons, guaranteed annual pure endowments and similar benefits							
15. Surrender benefits and withdrawals for life contracts	2,113,280,489			2,113,280,489			
16. Group conversions							
17. Interest and adjustments on contract or deposit-type contract funds	252,512,540				6,354,627	4,000	246,153,913
18. Payments on supplementary contracts with life contingencies							
19. Increase in aggregate reserves for life and accident and health contracts	1,598,880,460	51,434,219			(82,716,078)	1,630,162,319	
20. Totals (Lines 10 to 19)	5,427,435,443	51,434,219		2,184,444,755	(76,367,736)	3,021,770,291	246,153,913
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	92,636,719	33,341,743		11,587,464	39,655,844		8,051,667
22. Commissions and expense allowances on reinsurance assumed	46,153,967				46,153,967		
23. General insurance expenses	102,904,995	421,385		18,812,789	4,750,771	58,044,494	20,875,557
24. Insurance taxes, licenses and fees, excluding federal income taxes	7,014,986	748,727		1,631,575	721,917	3,288,475	624,292
25. Increase in loading on deferred and uncollected premiums							
26. Net transfers to or (from) Separate Accounts net of reinsurance	(155,339,412)			(761,493,742)	606,154,330		
27. Aggregate write-ins for deductions	247,968,790	(2,964,411)		(1,792,086)	213,669,923	3,981,312	35,074,052
28. Totals (Lines 20 to 27)	5,768,775,488	82,981,664		1,453,190,755	834,739,016	3,087,084,572	310,779,481
29. Net gain from operations before dividends to policyholders, refunds to members and federal income taxes (Line 9 minus Line 28)	341,157,465	248,900,894		679,933,864	(596,894,412)	30,439,673	(21,222,554)
30. Dividends to policyholders and refunds to members	(10,750)			(10,750)			
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	341,168,215	248,900,894		679,944,614	(596,894,412)	30,439,673	(21,222,554)
32. Federal income taxes incurred (excluding tax on capital gains)	64,760,447	(6,626,289)		151,358,700	(71,489,301)	5,004,807	(13,487,470)
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)	276,407,768	255,527,182		528,585,914	(525,405,111)	25,434,867	(7,735,084)
34. Policies/certificates in force end of year	1,986,602	232,158		143,329	1,246,223	364,892	
DETAILS OF WRITE-INS							
08.301. Management and administrative fees	319,102,174	7,127,318		231,924,332	91,183,324		(11,132,800)
08.302. Revenue sharing	23,065,356	(1,946,042)		42,225,943	(5,893,707)		(11,320,837)
08.303. Change in corporate owned life insurance	20,962,279	(13,774)		(55,985)		21,067,213	(35,175)
08.398. Summary of remaining write-ins for Line 8.3 from overflow page	(268,888,298)	127,208		(122,796,125)	(413,149)	4,042,555	(149,848,787)
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	94,241,512	5,294,709		151,298,165	84,876,468	25,109,768	(172,337,599)
2701. Ceded income on funds withheld	271,481,272	258,755,175			12,726,097		
2702. Miscellaneous charges to operations	36,175,543	(216,627,816)		(1,792,086)	218,115,065	1,406,329	35,074,052
2703. Reinsurance ceded adjustment	(57,071,929)	(41,333,788)			(14,582,567)	(1,155,573)	
2798. Summary of remaining write-ins for Line 27 from overflow page	(2,616,096)	(3,757,981)			(2,588,672)	3,730,557	
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	247,968,790	(2,964,411)		(1,792,086)	213,669,923	3,981,312	35,074,052

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

**ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF OPERATIONS BY LINES OF BUSINESS - ACCIDENT AND HEALTH (a)**

	1 Total	Comprehensive		4 Medicare Supplement	5 Vision Only	6 Dental Only	7 Federal Employees Health Benefits Plan	8 Title XVIII Medicare	9 Title XIX Medicaid	10 Credit A&H	11 Disability Income	12 Long-Term Care	13 Other Health
		2 Individual	3 Group										
1. Premiums for accident and health contracts	676,397,280			86,054							529,182,407	146,749,179	379,640
2. Considerations for supplementary contracts with life contingencies	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
3. Net investment income	260,399,416			(164,690)							201,487,459	57,714,814	1,361,833
4. Amortization of Interest Maintenance Reserve (IMR)	2,706,692			6,293							1,057,357	1,694,391	(51,350)
5. Separate Accounts net gain from operations excluding unrealized gains or losses	(65,170)			215							(72,912)	9,289	(1,762)
6. Commissions and expense allowances on reinsurance ceded	13,418,816			240,219								13,125,301	53,296
7. Reserve adjustments on reinsurance ceded													
8. Miscellaneous Income:													
8.1 Income from fees associated with investment management, administration and contract guarantees from Separate Accounts													
8.2 Charges and fees for deposit-type contracts	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
8.3 Aggregate write-ins for miscellaneous income	16,388,977			(26,720)							15,254,717	942,170	218,811
9. Totals (Lines 1 to 8.3)	969,246,011			141,371							746,909,029	220,235,143	1,960,468
10. Death benefits	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11. Matured endowments (excluding guaranteed annual pure endowments)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
12. Annuity benefits	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
13. Disability benefits and benefits under accident and health contracts	341,518,237			110,149							335,480,286	5,885,687	42,115
14. Coupons, guaranteed annual pure endowments and similar benefits													
15. Surrender benefits and withdrawals for life contracts	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
16. Group conversions													
17. Interest and adjustments on contract or deposit-type contract funds	2,553										2,565	(12)	
18. Payments on supplementary contracts with life contingencies	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
19. Increase in aggregate reserves for life and accident and health contracts	399,293,872			1,063							(15,000,900)	414,293,709	
20. Totals (Lines 10 to 19)	740,814,661			111,212							320,481,951	420,179,384	42,115
21. Commissions on premiums, annuity considerations and deposit-type contract funds (direct business only)	78,292,885			17,975							68,299,051	9,831,099	144,759
22. Commissions and expense allowances on reinsurance assumed													
23. General insurance expenses	199,070,803			169,630							163,903,383	34,999,092	(1,301)
24. Insurance taxes, licenses and fees, excluding federal income taxes	24,061,468			5,010							14,919,844	9,127,202	9,413
25. Increase in loading on deferred and uncollected premiums	(87,913)										(87,913)		
26. Net transfers to or (from) Separate Accounts net of reinsurance													
27. Aggregate write-ins for deductions	823,946			(2,182)							899,510	(91,231)	17,848
28. Totals (Lines 20 to 27)	1,042,975,850			301,645							568,415,825	474,045,546	212,834
29. Net gain from operations before dividends to policyholders, and refunds to members and federal income taxes (Line 9 minus Line 28)	(73,729,839)			(160,274)							178,493,203	(253,810,403)	1,747,635
30. Dividends to policyholders and refunds to members	30,021,385										30,021,385		
31. Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	(103,751,225)			(160,274)							148,471,818	(253,810,403)	1,747,635
32. Federal income taxes incurred (excluding tax on capital gains)	(15,700,330)			5,532,317							30,430,421	(52,021,265)	358,197
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)	(88,050,894)			(5,692,592)							118,041,397	(201,789,137)	1,389,437
34. Policies/certificates in force end of year	327,049			479							250,587	74,083	1,900
DETAILS OF WRITE-INS													
08.301. Miscellaneous	11,243,571			(26,737)							11,702,289	(650,698)	218,717
08.302. Change in corporate owned life insurance	5,145,407			17							3,552,428	1,592,868	94
08.303.													
08.398. Summary of remaining write-ins for Line 8.3 from overflow page													
08.399. Totals (Lines 08.301 thru 08.303 plus 08.398) (Line 8.3 above)	16,388,977			(26,720)							15,254,717	942,170	218,811
2701. Miscellaneous charges to operations	823,946			(2,182)							899,510	(91,231)	17,848
2702.													
2703.													
2798. Summary of remaining write-ins for Line 27 from overflow page													
2799. Totals (Lines 2701 thru 2703 plus 2798) (Line 27 above)	823,946			(2,182)							899,510	(91,231)	17,848

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF INCREASE IN RESERVES DURING THE YEAR - INDIVIDUAL LIFE INSURANCE (a)

	1	2	3	4	5	6	7	8	9	10	11	12
	Total	Industrial Life	Whole Life	Term Life	Indexed Life	Universal Life	Universal Life With Secondary Guarantees	Variable Life	Variable Universal Life	Credit Life ^(b) (N/A Fraternal)	Other Individual Life	YRT Mortality Risk Only
Involving Life or Disability Contingencies (Reserves) (Net of Reinsurance Ceded)												
1. Reserve December 31 of prior year	85,910,261,210		65,081,079,225	262,311,829		13,534,219,705	5,703,002,680	766,697	917,480,431		411,400,643	
2. Tabular net premiums or considerations	8,889,460,435		6,144,154,157	93,643,470		2,405,869,713	140,522,286	223,604	52,004,624		53,042,581	
3. Present value of disability claims incurred												
4. Tabular interest	3,877,547,492		2,984,584,848	11,209,434		643,001,941	193,523,188	25,884	30,803,175		14,399,023	
5. Tabular less actual reserve released												
6. Increase in reserve on account of change in valuation basis												
6.1 Change in excess of VM-20 deterministic/stochastic reserve over net premium reserve	(3,349,601)	XXX					(3,349,601)			XXX		
7. Other increases (net)	149,553,745		140,143,469	(1,528,357)		(7,468,577)	31,350,004		(9,471,516)		(3,471,278)	
8. Totals (Lines 1 to 7)	98,823,473,281		74,349,961,699	365,636,376		16,575,622,782	6,065,048,556	1,016,185	990,816,714		475,370,969	
9. Tabular cost	2,278,384,904		1,907,922,645	84,475,883		222,460,013	19,991,258	56,733	43,478,371			
10. Reserves released by death	1,501,723,348		1,328,635,971	437,552		92,062,713	73,444,717		7,142,395			
11. Reserves released by other terminations (net)	1,589,653,766		1,478,438,752	8,232,300		8,537,540	31,028,364	232,167	63,184,643			
12. Annuity, supplementary contract and disability payments involving life contingencies	26,895,708										26,895,708	
13. Net transfers to or (from) Separate Accounts	(34,123,446)							243,280	(34,366,726)			
14. Total Deductions (Lines 9 to 13)	5,362,534,280		4,714,997,368	93,145,735		323,060,266	124,464,339	532,181	79,438,683		26,895,708	
15. Reserve December 31 of current year	93,460,939,001		69,634,964,331	272,490,641		16,252,562,516	5,940,584,217	484,004	911,378,031		448,475,261	
Cash Surrender Value and Policy Loans												
16. CSV Ending balance December 31, current year	88,994,408,127		66,798,609,660			20,511,816,486	1,342,760,584	848,374	340,373,023			
17. Amount Available for Policy Loans Based upon Line 16 CSV	71,195,526,502		53,438,887,728			16,409,453,189	1,074,208,467	678,699	272,298,418			

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

(b) Individual and Group Credit Life are combined and included on page. (Indicate whether included with Individual or Group.)

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF INCREASE IN RESERVES DURING THE YEAR - GROUP LIFE INSURANCE (a)
(N/A Fraternal)

	1	2	3	4	5	6	7	8	9
	Total	Whole Life	Term Life	Variable Life	Universal Life	Variable Universal Life	Credit Life ^(b)	Other Group Life	YRT Mortality Risk Only
Involving Life or Disability Contingencies (Reserves) (Net of Reinsurance Ceded)									
1. Reserve December 31 of prior year	5,471,521,994	5,381,504,756			42,420,259	47,231,979		365,000	
2. Tabular net premiums or considerations	74,030,656	39,568,977			3,573,913	30,887,766			
3. Present value of disability claims incurred									
4. Tabular interest	592,615,514	589,604,189			1,626,949	1,384,376			
5. Tabular less actual reserve released									
6. Increase in reserve on account of change in valuation basis									
7. Other increases (net)	(3,741,212)	(4,417,746)			233,212	308,322		135,000	
8. Totals (Lines 1 to 7)	6,134,426,952	6,006,260,176			47,854,333	79,812,443		500,000	
9. Tabular cost	65,767,120	27,116,675			4,085,600	34,564,845			
10. Reserves released by death	123,556,738	110,043,822			783,782	12,729,134			
11. Reserves released by other terminations (net)	12,096,231	820,550			1,398,283	9,877,398			
12. Annuity, supplementary contract and disability payments involving life contingencies									
13. Net transfers to or (from) Separate Accounts	(25,097,111)					(25,097,111)			
14. Total Deductions (Lines 9 to 13)	176,322,978	137,981,047			6,267,665	32,074,266			
15. Reserve December 31 of current year	5,958,103,974	5,868,279,129			41,586,668	47,738,177		500,000	
Cash Surrender Value and Policy Loans									
16. CSV Ending balance December 31, current year									
17. Amount Available for Policy Loans Based upon Line 16 CSV									

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

(b) Individual and Group Credit Life are combined and included on page. (Indicate whether included with Individual or Group.)

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF INCREASE IN RESERVES DURING THE YEAR - INDIVIDUAL ANNUITIES (a)

	1 Total	Deferred				6 Life Contingent Payout (Immediate and Annuityizations)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees	5 Variable Annuities without Guarantees		
Involving Life or Disability Contingencies (Reserves) (Net of Reinsurance Ceded)							
1. Reserve December 31 of prior year	15,182,411,478	6,220,932,746		1,611,652,114	2,407,498	7,347,419,119	
2. Tabular net premiums or considerations	4,552,711,925	3,238,638,171		379,867,418	247,213	933,959,123	
3. Present value of disability claims incurred	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4. Tabular interest	603,203,373	229,896,329		44,514,043	613	328,792,388	
5. Tabular less actual reserve released	70,949,820	81,254,518		(10,276,289)	(28,409)		
6. Increase in reserve on account of change in valuation basis							
7. Other increases (net)	(286,173,752)	(212,280,672)		(169,080,319)	64,369	95,122,870	
8. Totals (Lines 1 to 7)	20,123,102,844	9,558,441,092		1,856,676,967	2,691,284	8,705,293,500	
9. Tabular cost							
10. Reserves released by death	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11. Reserves released by other terminations (net)	2,339,432,064	751,019,931		1,582,222,870	6,189,263		
12. Annuity, supplementary contract and disability payments involving life contingencies	774,722,545	93,603,955		140,517,037	2,044,795	538,556,758	
13. Net transfers to or (from) Separate Accounts	(1,291,487,901)			(1,277,103,865)	(7,930,437)	(6,453,599)	
14. Total Deductions (Lines 9 to 13)	1,822,666,708	844,623,886		445,636,042	303,621	532,103,159	
15. Reserve December 31 of current year	18,300,436,136	8,713,817,206		1,411,040,925	2,387,663	8,173,190,341	
Cash Surrender Value and Policy Loans							
16. CSV Ending balance December 31, current year	9,674,769,957	8,376,107,926		1,298,662,031			
17. Amount Available for Policy Loans Based upon Line 16 CSV							

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
ANALYSIS OF INCREASE IN RESERVES DURING THE YEAR - GROUP ANNUITIES (a)
(N/A Fraternal)

	1 Total	Deferred			5 Variable Annuities without Guarantees	6 Life Contingent Payout (Immediate and Annuityizations)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees			
Involving Life or Disability Contingencies (Reserves) (Net of Reinsurance Ceded)							
1. Reserve December 31 of prior year	15,351,732,908	246,929,531			1,489,694,616	13,615,108,761	
2. Tabular net premiums or considerations	2,374,092,428	115,000,000			64,832,180	2,194,260,248	
3. Present value of disability claims incurred	XXX	XXX	XXX	XXX	XXX	XXX	XXX
4. Tabular interest	566,290,010	6,309,944			40,995,701	518,984,365	
5. Tabular less actual reserve released							
6. Increase in reserve on account of change in valuation basis							
7. Other increases (net)	63,700,162	(298,128)			(4,940,886)	68,939,176	
8. Totals (Lines 1 to 7)	18,355,815,508	367,941,347			1,590,581,611	16,397,292,550	
9. Tabular cost							
10. Reserves released by death	XXX	XXX	XXX	XXX	XXX	XXX	XXX
11. Reserves released by other terminations (net)	112,177,214				112,177,214		
12. Annuity, supplementary contract and disability payments involving life contingencies	1,296,024,926				71,425,857	1,224,599,069	
13. Net transfers to or (from) Separate Accounts							
14. Total Deductions (Lines 9 to 13)	1,408,202,140				183,603,071	1,224,599,069	
15. Reserve December 31 of current year	16,947,613,368	367,941,347			1,406,978,540	15,172,693,481	
Cash Surrender Value and Policy Loans							
16. CSV Ending balance December 31, current year	1,773,919,887	367,941,347			1,405,978,540		
17. Amount Available for Policy Loans Based upon Line 16 CSV							

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT OF NET INVESTMENT INCOME

	1 Collected During Year	2 Earned During Year
1. U.S. Government bonds	(a) 132,599,073	194,939,615
1.1 Bonds exempt from U.S. tax	(a)	
1.2 Other bonds (unaffiliated)	(a) 3,591,802,397	3,998,771,331
1.3 Bonds of affiliates	(a) 139,720,382	243,138,733
2.1 Preferred stocks (unaffiliated)	(b) 26,027,097	17,135,215
2.11 Preferred stocks of affiliates	(b)	
2.2 Common stocks (unaffiliated)	205,938,330	55,126,638
2.21 Common stocks of affiliates	1,378,000,000	717,000,000
3. Mortgage loans	(c) 1,137,759,377	1,145,477,026
4. Real estate	(d) 141,990,846	161,768,717
5. Contract loans	1,066,394,740	1,102,975,168
6. Cash, cash equivalents and short-term investments	(e) 60,969,489	60,969,489
7. Derivative instruments	(f) 642,129,556	538,701,258
8. Other invested assets	1,199,829,788	1,170,906,392
9. Aggregate write-ins for investment income	18,870,784	18,870,784
10. Total gross investment income	9,742,031,859	9,425,780,366
11. Investment expenses		(g) 420,999,307
12. Investment taxes, licenses and fees, excluding federal income taxes		(g) 22,618,795
13. Interest expense		(h) 196,113,746
14. Depreciation on real estate and other invested assets		(i) 90,539,160
15. Aggregate write-ins for deductions from investment income		
16. Total deductions (Lines 11 through 15)		730,271,007
17. Net investment income (Line 10 minus Line 16)		8,695,509,359
DETAILS OF WRITE-INS		
0901. Miscellaneous	18,870,784	18,870,784
0902.		
0903.		
0998. Summary of remaining write-ins for Line 9 from overflow page		
0999. Totals (Lines 0901 thru 0903 plus 0998) (Line 9, above)	18,870,784	18,870,784
1501.		
1502.		
1503.		
1598. Summary of remaining write-ins for Line 15 from overflow page		
1599. Totals (Lines 1501 thru 1503 plus 1598) (Line 15, above)		

- (a) Includes \$ 331,197,415 accrual of discount less \$ 184,805,816 amortization of premium and less \$ 55,236,477 paid for accrued interest on purchases.
- (b) Includes \$ accrual of discount less \$ amortization of premium and less \$ paid for accrued dividends on purchases.
- (c) Includes \$ 68,067,532 accrual of discount less \$ 14,292,818 amortization of premium and less \$ paid for accrued interest on purchases.
- (d) Includes \$ 4,716,646 for company's occupancy of its own buildings; and excludes \$ 21,395,562 interest on encumbrances.
- (e) Includes \$ 11,833,649 accrual of discount less \$ 196,129 amortization of premium and less \$ 1,058,557 paid for accrued interest on purchases.
- (f) Includes \$ accrual of discount less \$ amortization of premium.
- (g) Includes \$ investment expenses and \$ investment taxes, licenses and fees, excluding federal income taxes, attributable to segregated and Separate Accounts.
- (h) Includes \$ 188,412,190 interest on surplus notes and \$ interest on capital notes.
- (i) Includes \$ 90,539,160 depreciation on real estate and \$ depreciation on other invested assets.

EXHIBIT OF CAPITAL GAINS (LOSSES)

	1	2	3	4	5
	Realized Gain (Loss) On Sales or Maturity	Other Realized Adjustments	Total Realized Capital Gain (Loss) (Columns 1 + 2)	Change in Unrealized Capital Gain (Loss)	Change in Unrealized Foreign Exchange Capital Gain (Loss)
1. U.S. Government bonds	(1,088,954)	1	(1,088,953)	515,355	
1.1 Bonds exempt from U.S. tax					
1.2 Other bonds (unaffiliated)	247,368,439	(47,131,038)	200,237,401	5,258,829	(735,670,632)
1.3 Bonds of affiliates					
2.1 Preferred stocks (unaffiliated)	10,153,639	(1,422,035)	8,731,604	826,432	
2.11 Preferred stocks of affiliates					
2.2 Common stocks (unaffiliated)	167,802,134	(10,846,619)	156,955,515	60,641,647	2,986,872
2.21 Common stocks of affiliates				792,884,751	
3. Mortgage loans	2,939,640	(9,886,843)	(6,947,203)		(79,546,248)
4. Real estate	29,787,026	(5,416,511)	24,370,515		
5. Contract loans	1,114		1,114		
6. Cash, cash equivalents and short-term investments	328,412	11,849,292	12,177,704		
7. Derivative instruments	(806,263,333)		(806,263,333)	1,933,550,631	3,582,661
8. Other invested assets	70,474,173	(483,271,883)	(412,797,710)	1,093,541,554	(47,550,286)
9. Aggregate write-ins for capital gains (losses)		(5,461,343)	(5,461,343)		(6,392,348)
10. Total capital gains (losses)	(278,497,710)	(551,586,979)	(830,084,689)	3,887,219,199	(862,589,981)
DETAILS OF WRITE-INS					
0901. Miscellaneous losses		(5,461,343)	(5,461,343)		(6,392,348)
0902.					
0903.					
0998. Summary of remaining write-ins for Line 9 from overflow page					
0999. Totals (Lines 0901 thru 0903 plus 0998) (Line 9, above)		(5,461,343)	(5,461,343)		(6,392,348)

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
EXHIBIT - 1 PART 1 - PREMIUMS AND ANNUITY CONSIDERATIONS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS

	Insurance											
	1 Total	2 Industrial Life	3 Ordinary		5 Credit Life (Group and Individual)	6 Group		8 Accident and Health			11 Aggregate of All Other Lines of Business	12 Fraternal (Fraternal Benefit Societies Only)
			4 Individual Annuities	Life Insurance		4 Individual Annuities	6 Life Insurance	7 Annuities	8 Group	9 Credit (Group and Individual)			10 Other
FIRST YEAR (other than single)												
1. Uncollected	1,482,544		1,335,525							147,020		
2. Deferred and accrued	184,281,108		184,281,580							(472)		
3. Deferred, accrued and uncollected:												
3.1 Direct	187,964,751		185,617,105							2,347,646		
3.2 Reinsurance assumed												
3.3 Reinsurance ceded	2,201,099									2,201,099		
3.4 Net (Line 1 + Line 2)	185,763,653		185,617,105							146,548		
4. Advance												
5. Line 3.4 - Line 4	185,763,653		185,617,105							146,548		
6. Collected during year:												
6.1 Direct	2,350,186,659		809,259,946	625,228,344		23,368,922	847,088,932	178,403		45,062,113		
6.2 Reinsurance assumed	865,118,552						865,118,552					
6.3 Reinsurance ceded	1,475,184,223		63,460,221			751,655	1,410,926,604	34,913		10,829		
6.4 Net	1,740,120,988		745,799,725	625,228,344		22,617,266	301,280,880	143,489		45,051,283		
7. Line 5 + Line 6.4	1,925,884,640		931,416,830	625,228,344		22,617,266	301,280,880	143,489		45,197,831		
8. Prior year (uncollected + deferred and accrued - advance)	148,555,458		148,443,095							112,363		
9. First year premiums and considerations:												
9.1 Direct	2,387,466,009		846,433,956	625,228,344		23,368,922	847,088,932	178,403		45,167,452		
9.2 Reinsurance assumed	865,118,552						865,118,552					
9.3 Reinsurance ceded	1,475,255,378		63,460,221			751,655	1,410,926,604	34,913		81,984		
9.4 Net (Line 7 - Line 8)	1,777,329,182		782,973,734	625,228,344		22,617,266	301,280,880	143,489		45,085,468		
SINGLE												
10. Single premiums and considerations:												
10.1 Direct	13,698,279,949		4,553,466,627	5,192,841,435		1,503,813	3,919,933,200			30,534,873		
10.2 Reinsurance assumed												
10.3 Reinsurance ceded	3,186,543,773			1,545,607,670			1,640,936,102					
10.4 Net	10,511,736,176		4,553,466,627	3,647,233,765		1,503,813	2,278,997,098			30,534,873		
RENEWAL												
11. Uncollected	164,906,698		157,744,033			315,931				6,846,735		
12. Deferred and accrued	858,799,491		847,359,581			2,671,335	17,241,869			(8,473,295)		
13. Deferred, accrued and uncollected:												
13.1 Direct	1,201,722,822		1,199,598,151			(4,723,393)				6,848,064		
13.2 Reinsurance assumed	24,047,194		9,437,843			(2,632,518)	17,241,869					
13.3 Reinsurance ceded	202,063,827		203,932,380			(10,343,177)				8,474,624		
13.4 Net (Line 11 + Line 12)	1,023,706,190		1,005,103,614			2,987,266	17,241,869			(1,626,560)		
14. Advance	47,546,285		35,452,182							12,094,103		
15. Line 13.4 - Line 14	976,159,905		969,651,432			2,987,266	17,241,869			(13,720,663)		
16. Collected during year:												
16.1 Direct	14,745,031,282		5,910,335,234	280,606,151		105,488,376	7,747,713,765	425,819		700,461,937		
16.2 Reinsurance assumed	240,587,680		46,662,791	(9,196)			193,934,085					
16.3 Reinsurance ceded	7,460,129,579		1,166,362,122	25,202,090		34,428,727	6,136,907,947	189,669		97,039,025		
16.4 Net	7,525,489,383		4,790,635,903	255,394,866		71,059,649	1,804,739,903	236,150		603,422,912		
17. Line 15 + Line 16.4	8,501,649,287		5,760,287,335	255,394,866		74,046,915	1,821,981,772	236,150		589,702,249		
18. Prior year (uncollected + deferred and accrued - advance)	922,734,099		919,630,797	(2,200,922)		2,246,207	13,753,067			(10,695,050)		
19. Renewal premiums and considerations:												
19.1 Direct	14,799,102,915		5,965,956,514	280,606,151		106,136,568	7,747,713,765	425,819		698,264,098		
19.2 Reinsurance assumed	246,414,077		46,488,590	2,191,726		310,873	197,422,888					
19.3 Reinsurance ceded	7,466,601,804		1,171,788,565	25,202,090		34,646,734	6,136,907,947	189,669		97,866,799		
19.4 Net (Line 17 - Line 18)	7,578,915,188		4,840,656,538	257,595,788		71,800,707	1,808,228,706	236,150		600,397,299		
TOTAL												
20. Total premiums and annuity considerations:												
20.1 Direct	30,884,848,873		11,365,857,097	6,098,675,931		131,009,303	12,514,735,897	604,222		773,966,424		
20.2 Reinsurance assumed	1,111,532,628		46,488,590	2,191,726		310,873	1,062,541,440					
20.3 Reinsurance ceded	12,128,400,955		1,235,248,786	1,570,809,760		35,398,390	9,188,770,653	224,582		97,948,783		
20.4 Net (Lines 9.4 + 10.4 + 19.4)	19,867,980,546		10,177,096,900	4,530,057,897		95,921,786	4,388,506,683	379,640		676,017,640		

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT - 1 PART 2 - POLICYHOLDERS' DIVIDENDS, REFUNDS TO MEMBERS AND COUPONS APPLIED, REINSURANCE COMMISSIONS AND EXPENSE ALLOWANCES AND COMMISSIONS INCURRED (Direct Business Only)

	Insurance											
	1	2	Ordinary		5	Group		Accident and Health			11	12
			3	4		6	7	8	9	10		
Total	Industrial Life	Life Insurance	Individual Annuities	Credit Life (Group and Individual)	Life Insurance	Annuities	Group	Credit (Group and Individual)	Other	Aggregate of All Other Lines of Business	Fraternal (Fraternal Benefit Societies Only)	
POLICYHOLDERS' DIVIDENDS, REFUNDS TO MEMBERS AND COUPONS APPLIED (included in Part 1)												
21. To pay renewal premiums	94,541,143		94,469,524			10				71,609		
22. All other	1,451,316,934		1,448,972,613	840,509		1,503,813						
REINSURANCE COMMISSIONS AND EXPENSE ALLOWANCES INCURRED												
23. First year (other than single):												
23.1 Reinsurance ceded	78,677,619		57,808,774	20,834,148				34,697				
23.2 Reinsurance assumed												
23.3 Net ceded less assumed	78,677,619		57,808,774	20,834,148				34,697				
24. Single:												
24.1 Reinsurance ceded	195,416,711			34,485,232				160,931,479				
24.2 Reinsurance assumed												
24.3 Net ceded less assumed	195,416,711			34,485,232				160,931,479				
25. Renewal:												
25.1 Reinsurance ceded	155,993,462		139,465,275	2,021,377				1,122,690		13,365,520		
25.2 Reinsurance assumed	59,451,679		6,926,626			6,371,086		46,153,967				
25.3 Net ceded less assumed	96,541,783		132,538,649	2,021,377		(6,371,086)		18,599		13,365,520		
26. Totals:												
26.1 Reinsurance ceded (Page 6, Line 6)	430,087,792		197,274,049	57,340,757				162,054,169		53,296		13,365,520
26.2 Reinsurance assumed (Page 6, Line 22)	59,451,679		6,926,626			6,371,086		46,153,967				
26.3 Net ceded less assumed	370,636,112		190,347,423	57,340,757		(6,371,086)		115,900,202		53,296		13,365,520
COMMISSIONS INCURRED (direct business only)												
27. First year (other than single)	402,755,688		329,230,505	29,087,046		14,935,182		9,929,194		127,929		19,445,832
28. Single	182,286,869		49,801,753	122,686,403				8,051,667				1,747,046
29. Renewal	579,320,278		415,713,537	25,333,722		6,645,084		74,655,858		16,830		56,955,248
30. Deposit-type contract funds												
31. Totals (to agree with Page 6, Line 21)	1,164,362,836		794,745,795	177,107,171		21,580,267		92,636,719		144,759		78,148,126

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 2 - GENERAL EXPENSES

	Insurance				5 Investment	6 Fraternal	7 Total
	1 Life	2 Accident and Health		4 All Other Lines of Business			
		3 Cost Containment	3 All Other				
1. Rent	71,382,212		5,891,364		2,068,949		79,342,525
2. Salaries and wages	1,164,376,179	3,180,982	92,918,075		33,748,390		1,294,223,626
3.11 Contributions for benefit plans for employees	84,765,208	1,463	6,994,434		2,456,843		94,217,949
3.12 Contributions for benefit plans for agents	118,108,368		9,747,797		3,423,264		131,279,430
3.21 Payments to employees under non-funded benefit plans							
3.22 Payments to agents under non-funded benefit plans							
3.31 Other employee welfare	8,562,733		706,705		248,183		9,517,621
3.32 Other agent welfare							
4.1 Legal fees and expenses	22,783,104	2,214,164			660,348		25,657,615
4.2 Medical examination fees	18,761,183		1,548,410		543,776		20,853,369
4.3 Inspection report fees							
4.4 Fees of public accountants and consulting actuaries	5,077,656		419,072		147,171		5,643,900
4.5 Expense of investigation and settlement of policy claims	4,194,315	2,330,815			121,568		6,646,698
5.1 Traveling expenses	8,470,016		699,053		245,496		9,414,565
5.2 Advertising	59,405,386		4,902,884		1,721,811		66,030,081
5.3 Postage, express, telegraph and telephone	19,009,003		1,568,864		550,959		21,128,826
5.4 Printing and stationery	10,197,856		841,656		295,576		11,335,087
5.5 Cost or depreciation of furniture and equipment	29,494,805		2,434,285		854,880		32,783,970
5.6 Rental of equipment	22,744,048		1,877,127		659,216		25,280,390
5.7 Cost or depreciation of EDP equipment and software	106,465,770		8,786,903		3,085,814		118,338,487
6.1 Books and periodicals	9,765,078		805,938		283,032		10,854,048
6.2 Bureau and association fees	5,856,658		483,366		169,750		6,509,773
6.3 Insurance, except on real estate	12,754,629		1,052,673		369,681		14,176,983
6.4 Miscellaneous losses	13,711,657		1,131,659		397,420		15,240,736
6.5 Collection and bank service charges	5,957,231		491,666		172,665		6,621,562
6.6 Sundry general expenses	3,790,545		312,844		109,866		4,213,255
6.7 Group service and administration fees	284,130,373		21,131,573		8,235,262		313,497,208
6.8 Reimbursements by uninsured plans							
7.1 Agency expense allowance	288,771,783		23,833,102		8,369,789		320,974,674
7.2 Agents' balances charged off (less \$ recovered)							
7.3 Agency conferences other than local meetings	8,864,638		731,622		256,934		9,853,193
8.1 Official publication (Fraternal Benefit Societies Only)	XXX	XXX	XXX	XXX	XXX		
8.2 Expense of supreme lodge meetings (Fraternal Benefit Societies Only)	XXX	XXX	XXX	XXX	XXX		
9.1 Real estate expenses					26,372,216		26,372,216
9.2 Investment expenses not included elsewhere					340,213,554		340,213,554
9.3 Aggregate write-ins for expenses	(316,085,011)		2,032,307		(14,783,105)		(328,835,809)
10. General expenses incurred	2,071,315,422	7,727,425	191,343,378		420,999,307	(b)	(a) 2,691,385,532
11. General expenses unpaid Dec. 31, prior year	1,156,323,869	3,047,321	82,114,663		11,763,939		1,253,249,792
12. General expenses unpaid Dec. 31, current year	1,246,120,066	3,992,206	98,853,392		36,117,663		1,385,083,327
13. Amounts receivable relating to uninsured plans, prior year							
14. Amounts receivable relating to uninsured plans, current year							
15. General expenses paid during year (Lines 10+11-12-13+14)	1,981,519,225	6,782,540	174,604,649		396,645,583		2,559,551,997
DETAILS OF WRITE-INS							
09.301. Management Services Income	(340,709,289)				(15,496,818)		(356,206,107)
09.302. Miscellaneous	24,624,278		2,032,307		713,712		27,370,298
09.303.							
09.398. Summary of remaining write-ins for Line 9.3 from overflow page							
09.399. Totals (Lines 09.301 thru 09.303 plus 09.398) (Line 9.3 above)	(316,085,011)		2,032,307		(14,783,105)		(328,835,809)

(a) Includes management fees of \$ 228,279,664 to affiliates and \$ to non-affiliates.

(b) Show the distribution of this amount in the following categories (Fraternal Benefit Societies Only):

1. Charitable \$; 2. Institutional \$; 3. Recreational and Health \$; 4. Educational \$; 5. Religious \$; 6. Membership \$; 7. Other \$; 8. Total \$

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

	Insurance			4 Investment	5 Fraternal	6 Total
	1 Life	2 Accident and Health	3 All Other Lines of Business			
1. Real estate taxes				20,135,119		20,135,119
2. State insurance department licenses and fees	2,698,035	197,876				2,895,911
3. State taxes on premiums	170,859,333	12,687,722				183,547,055
4. Other state taxes, including \$ for employee benefits	33,327,600	3,821,254				37,148,854
5. U.S. Social Security taxes	92,306,311	7,127,222		2,483,675		101,917,208
6. All other taxes	3,101,505	227,467				3,328,972
7. Taxes, licenses and fees incurred	302,292,784	24,061,540		22,618,795		348,973,119
8. Taxes, licenses and fees unpaid Dec. 31, prior year	47,536,353	4,650,436		4,255,246		56,442,035
9. Taxes, licenses and fees unpaid Dec. 31, current year	80,468,400	6,405,028		6,020,978		92,894,406
10. Taxes, licenses and fees paid during year (Lines 7 + 8 - 9)	269,360,736	22,306,948		20,853,063		312,520,747

EXHIBIT 4 - DIVIDENDS OR REFUNDS

	1 Life	2 Accident and Health
	1. Applied to pay renewal premiums	94,469,534	71,609
2. Applied to shorten the endowment or premium-paying period		
3. Applied to provide paid-up additions	1,450,476,425	
4. Applied to provide paid-up annuities	840,509	
5. Total Lines 1 through 4	1,545,786,468	71,609
6. Paid in cash	62,355,877	26,738,305
7. Left on deposit	25,704,360	44,565
8. Aggregate write-ins for dividend or refund options	27,196,830	
9. Total Lines 5 through 8	1,661,043,535	26,854,479
10. Amount due and unpaid	9,918,662	8,546
11. Provision for dividends or refunds payable in the following calendar year	1,781,024,813	26,236,537
12. Terminal dividends	10,625,692	
13. Provision for deferred dividend contracts		
14. Amount provisionally held for deferred dividend contracts not included in Line 13		
15. Total Lines 10 through 14	1,801,569,166	26,245,083
16. Total from prior year	1,684,498,127	23,078,176
17. Total dividends or refunds (Lines 9 + 15 - 16)	1,778,114,574	30,021,385
DETAILS OF WRITE-INS		
0801. Applied to reduce policy indebtedness	27,196,830	
0802.		
0803.		
0898. Summary of remaining write-ins for Line 8 from overflow page		
0899. Totals (Lines 0801 thru 0803 plus 0898) (Line 8 above)	27,196,830	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS

1	2	3	4	5	6
Valuation Standard	Total ^(a)	Industrial	Ordinary	Credit (Group and Individual)	Group
0100001. 2001 CSO CRVM 3.00%	840,076		840,076		
0100002. 2001 CSO CRVM 3.50%	17,855,502,730		17,855,502,730		
0100003. 2001 CSO CRVM 4.00%	12,881,577,458		12,881,577,458		
0100004. 2001 CSO CRVM 4.50%	115,387,058		115,387,058		
0100005. 2001 CSO NLP 3.00%	71,054		71,054		
0100006. 2001 CSO NLP 3.50%	931,958,750		931,958,750		
0100007. 2001 CSO NLP 4.00%	243,943,841		243,943,841		
0100008. 2017 CSO CRVM 3.00%	735,043,939		735,043,939		
0100009. 2017 CSO CRVM 3.25%	358,947		358,947		
0100010. 2017 CSO CRVM 3.50%	1,290,335,099		1,290,335,099		
0100011. 2017 CSO CRVM 3.75%	1,967,257		1,967,257		
0100012. 2017 CSO NLP 3.00%	146,604,027		146,604,027		
0100013. 2017 CSO NLP 3.50%	67,412,764		67,412,764		
0100014. 2017 CSO NPR 3.50%	46,352		46,352		
0100015. 2017 CSO NPR 3.75%	34,591,706		34,591,706		
0100016. 2017 CSO NPR 4.50%	81,510,659		81,510,659		
0100017. 41 CSO NLP 2.50%	98,227,984		98,227,984		
0100018. 41 CSO NLP 4.00%	303,463		303,463		
0100019. 41 CSO NLP CRF 2.50%	433,466,258		433,466,258		
0100020. 41 CSO NLP CRF 4.00%	1,782,214		1,782,214		
0100021. 58 CET NLP 2.50%	204,940		204,940		
0100022. 58 CET NLP 3.00%	80,542		80,542		
0100023. 58 CET NLP 3.5% /20/ 2.5%	185,755		185,755		
0100024. 58 CET NLP 3.50%	116,076		116,076		
0100025. 58 CET NLP 4.00%	8,782,854		8,782,854		
0100026. 58 CET NLP 4.50%	976,845		976,845		
0100027. 58 CSO CRVM 3.00%	47,097,191		47,097,191		
0100028. 58 CSO CRVM 3.50%	511,962,361		511,962,361		
0100029. 58 CSO CRVM 4.00%	1,766,368,969		1,766,368,969		
0100030. 58 CSO CRVM 4.50%	3,808,897,752		3,808,897,752		
0100031. 58 CSO CRVM 6.00%	7,026,256		7,026,256		
0100032. 58 CSO Mod CRVM 4.00%	140,529		140,529		
0100033. 58 CSO Mod CRVM 4.50%	1,271,233,320		1,271,233,320		
0100034. 58 CSO NLP 2.50%	1,406,944,136		1,406,944,136		
0100035. 58 CSO NLP 3.00%	593,556,184		593,556,184		
0100036. 58 CSO NLP 3.5% /20/ 2.5%	1,032,441,956		1,032,441,956		
0100037. 58 CSO NLP 3.50%	54,988,743		54,988,743		
0100038. 58 CSO NLP 4.00%	11,369,156		11,369,156		
0100039. 58 CSO NLP 4.50%	5,955,278		5,955,278		
0100040. 58 CSO NLP CRF 2.50%	1,934,244		1,934,244		
0100041. 58 CSO NLP CRF 2.75%	17,225,623		17,225,623		
0100042. 58 CSO NLP CRF 3.50%	1,081,408		1,081,408		
0100043. 58 CSO NLP CRF 4.00%	1,643,672		1,643,672		
0100044. 80 CET NLP 4.00%	8,210,587		8,210,587		
0100045. 80 CET NLP 4.50%	2,228,793		2,228,793		
0100046. 80 CET NLP 5.00%	835,158		835,158		
0100047. 80 CET NLP 5.50%	1,576,085		1,576,085		
0100048. 80 CET NLP 6.00%	39,994		39,994		
0100049. 80 CSO CRVM 3.50%	322,417		322,417		
0100050. 80 CSO CRVM 4.00%	4,387,647,370		4,387,647,370		
0100051. 80 CSO CRVM 4.25%	125,742		125,742		
0100052. 80 CSO CRVM 4.50%	12,696,340,804		12,696,340,804		
0100053. 80 CSO CRVM 5.00%	5,975,768,036		5,975,768,036		
0100054. 80 CSO CRVM 5.50%	8,059,361,788		8,059,361,788		
0100055. 80 CSO CRVM 6.00%	674,499,241		674,499,241		
0100056. 80 CSO CRVM CRF 4.50%	7,549,390		7,549,390		
0100057. 80 CSO CRVM CRF 5.00%	504,710,197		504,710,197		
0100058. 80 CSO CRVM CRF 5.50%	27,494		27,494		
0100059. 80 CSO Mod CRF 5.50%	122,703,330		122,703,330		
0100060. 80 CSO NLP 4.00%	16,434		16,434		
0100061. 80 CSO NLP 4.50%	146,912,754		146,912,754		
0100062. 80 CSO NLP CRF 4.50%	66,289,113		66,289,113		
0100063. 80 CSO NLP CRF 5.00%	356,921		356,921		
0100064. 80 CSO NLP CRF 5.50%	3,068,697		3,068,697		
0100065. American Experience NLP CRF 3.00%	24,538,821		24,538,821		
0100066. American Experience NLP CRF 4.00%	2,578,680		2,578,680		
0100067. 80 CSO NLP 5.00%	442,479		442,479		
0100068. 80 CSO NLP 5.50%	908,164		908,164		
0100069. 80 CSO 3.00%	5,010,235,630		4,969,538,542		40,697,089
0100070. 80 CSO 4.00%	8,265,441,315		2,449,478,062		5,815,963,254
0100071. 80 CSO 4.00% CALIFORNIA	612,004,135		612,004,135		
0100072. 80 CSO 4.50% CALIFORNIA	112,503,862		112,503,862		
0100073. 2001 CSO 4.00%	2,688,741,895		2,640,374,948		48,366,947
0100074. 2001 CSO 3.50%	8,223,296,963		8,176,921,680		46,375,283
0100075. 2017 CSO 3.50%	1,044,934,283		1,037,958,445		6,975,838
0100076. 2017 CSO 3.00%	2,372,717,283		2,370,282,830		2,434,453
0100077. T CSO 58 6.00%	470,739				470,739
0100078. 80 CSO 4.50%	5,990,160				5,990,160
0100079. 41 CSO 2.50%	24,309				24,309
0100080. 58 CSO 3.00%	53,022				53,022
0100081. 58 CSO 3.50%	333,185				333,185
0100082. 58 CSO 4.00%	948,189				948,189
0100083. 70 INTCO GRP DIS 3.50%	4,686,316				4,686,316
0199997. Totals (Gross)	106,500,585,202		100,527,266,418		5,973,318,784
0199998. Reinsurance ceded	8,616,220,717		8,605,305,303		10,915,414
0199999. Life Insurance: Totals (Net)	97,884,364,485		91,921,961,115		5,962,403,370
0200001. 37 SA 2.50% DEF	51,772	XXX	51,772	XXX	
0200002. 37 SA 3.00% IMM	530	XXX	530	XXX	
0200003. 37 SA 3.50% IMM	47,098	XXX	47,098	XXX	
0200004. a-1949 2.75% BOTH		XXX		XXX	
0200005. a-1949 3.00% DEF	76,128	XXX	76,128	XXX	
0200006. a-1949 3.50% IMM	74,141	XXX	74,141	XXX	

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EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS

1	2	3	4	5	6
Valuation Standard	Total ^(a)	Industrial	Ordinary	Credit (Group and Individual)	Group
0200007. 51 GAM 3.50% DEF	2,040,953	XXX	2,040,953	XXX	
0200008. 71 IAM 3.50% IMM	3,087	XXX	3,087	XXX	
0200009. 71 IAM 6.00% IMM	50,255	XXX	50,255	XXX	
0200010. 71 IAM 7.50% IMM	528,343	XXX	528,343	XXX	
0200011. 71 IAM 11.25% IMM	1,065,660	XXX	1,065,660	XXX	
0200012. 71 GAM 3.50% DEF	8,831,241	XXX	8,831,241	XXX	
0200013. 71 GAM 4.00% DEF	1,444,013	XXX	1,444,013	XXX	
0200014. 83a 6.25% IMM	2,374,607	XXX	2,374,607	XXX	
0200015. 83a 6.50% IMM	1,666,470	XXX	1,666,470	XXX	
0200016. 83a 6.75% IMM	3,227,522	XXX	3,227,522	XXX	
0200017. 83a 7.00% IMM	835,315	XXX	835,315	XXX	
0200018. 83a 7.25% IMM	1,809,628	XXX	1,809,628	XXX	
0200019. 83a 7.75% IMM	1,032,348	XXX	1,032,348	XXX	
0200020. 83a 8.00% IMM	1,816,799	XXX	1,816,799	XXX	
0200021. 83a 8.25% IMM	4,062,594	XXX	4,062,594	XXX	
0200022. 83a 8.75% IMM	1,651,795	XXX	1,651,795	XXX	
0200023. 83a 9.25% IMM	221,956	XXX	221,956	XXX	
0200024. 83a 11.00% IMM	309,509	XXX	309,509	XXX	
0200025. 83a CIF/No-FIG DEF	317,608	XXX	317,608	XXX	
0200026. 94 MGDB Table IY / FIG DEF	1,232,995,222	XXX	1,232,995,222	XXX	
0200027. 94 MGDB Table IY / NO FIG DEF	66,104,033	XXX	66,104,033	XXX	
0200028. a-2000 CIF / NO FIG DEF	283,258	XXX	283,258	XXX	
0200029. a-2000 IY / FIG DEF	1,972,015,121	XXX	1,972,015,121	XXX	
0200030. a-2000 IY / No FIG DEF	124,734,549	XXX	124,734,549	XXX	
0200031. a-2000 3.50% BOTH		XXX		XXX	
0200032. a-2000 3.75% BOTH		XXX		XXX	
0200033. a-2000 4.00% IMM	214,372,333	XXX	214,372,333	XXX	
0200034. a-2000 4.25% IMM	246,132,864	XXX	246,132,864	XXX	
0200035. a-2000 4.50% IMM	329,243,522	XXX	329,243,522	XXX	
0200036. a-2000 5.00% IMM	178,879,164	XXX	178,879,164	XXX	
0200037. a-2000 5.25% IMM	206,106,882	XXX	206,106,882	XXX	
0200038. a-2000 5.50% IMM	80,286,093	XXX	80,286,093	XXX	
0200039. a-2000 6.00% IMM	145,469,974	XXX	145,469,974	XXX	
0200040. a-2000 6.25% IMM	3,087,411	XXX	3,087,411	XXX	
0200041. a-2000 6.50% IMM	20,607,935	XXX	20,607,935	XXX	
0200042. a-2000 6.75% IMM	5,712,747	XXX	5,712,747	XXX	
0200043. a-2000 7.00% IMM	3,706,529	XXX	3,706,529	XXX	
0200044. a-2012 CIF / NO FIG DEF	143,657	XXX	143,657	XXX	
0200045. a-2012 IY / FIG DEF	199,585,801	XXX	199,585,801	XXX	
0200046. a-2012 IY / No FIG DEF	14,039,638,248	XXX	14,039,638,248	XXX	
0200047. a-2012 2.00% IMM	107,568,479	XXX	107,568,479	XXX	
0200048. a-2012 3.00% IMM	119,999,307	XXX	119,999,307	XXX	
0200049. a-2012 3.25% IMM	104,681,795	XXX	104,681,795	XXX	
0200050. a-2012 3.50% IMM	144,710,407	XXX	144,710,407	XXX	
0200051. a-2012 3.75% IMM	385,650,281	XXX	385,650,281	XXX	
0200052. a-2012 4.00% IMM	765,919,006	XXX	765,919,006	XXX	
0200053. a-2012 4.25% IMM	42,494,846	XXX	42,494,846	XXX	
0200054. RA 2.50% DEF	177,829	XXX	177,829	XXX	
0200055. RA 2.75% DEF	3,548,867	XXX	3,548,867	XXX	
0200056. RA 3.00% DEF	32,350	XXX	32,350	XXX	
0200057. RA 3.50% DEF	15,609,160	XXX	15,609,160	XXX	
0200058. RA 4.00% DEF	78,282,127	XXX	78,282,127	XXX	
0200059. 83a IY/FIG DEF	39,295,947	XXX	39,295,947	XXX	
0200060. a-2012 1.00% IMM	1,047,322	XXX	1,047,322	XXX	
0200061. a-2012 1.25% IMM	91,745	XXX	91,745	XXX	
0200062. a-2012 1.50% IMM	30,728,680	XXX	30,728,680	XXX	
0200063. a-2012 1.75% IMM	51,501,101	XXX	51,501,101	XXX	
0200064. a-2012 2.25% IMM	198,180,452	XXX	198,180,452	XXX	
0200065. a-2012 2.50% IMM	107,903,989	XXX	107,903,989	XXX	
0200066. a-2012 2.75% IMM	137,330,301	XXX	137,330,301	XXX	
0200067. a-2012 5.00% BOTH	451,547	XXX	451,547	XXX	
0200068. a-2012 5.25% BOTH	84,872	XXX	84,872	XXX	
0200069. a-2012 6.00% BOTH	129,153	XXX	129,153	XXX	
0200070. a-2000 4.00% BOTH	636,258,518	XXX	636,258,518	XXX	
0200071. a-2000 4.25% BOTH	47,909,447	XXX	47,909,447	XXX	
0200072. a-2000 4.50% BOTH	545,724,413	XXX	545,724,413	XXX	
0200073. a-2000 5.00% BOTH	1,009,292	XXX	1,009,292	XXX	
0200074. a-2000 5.25% BOTH	1,581,110	XXX	1,581,110	XXX	
0200075. a-2000 5.50% BOTH	1,999,616	XXX	1,999,616	XXX	
0200076. a-2000 6.00% BOTH	546,653	XXX	546,653	XXX	
0200077. a-2012 2.00% BOTH	22,163,991	XXX	22,163,991	XXX	
0200078. a-2012 3.00% BOTH	105,619,152	XXX	105,619,152	XXX	
0200079. a-2012 3.25% BOTH	153,884,733	XXX	153,884,733	XXX	
0200080. a-2012 3.50% BOTH	198,672,655	XXX	198,672,655	XXX	
0200081. a-2012 3.75% BOTH	325,883,174	XXX	325,883,174	XXX	
0200082. a-2012 4.00% BOTH	860,091,607	XXX	860,091,607	XXX	
0200083. a-2012 4.25% BOTH	45,619,814	XXX	45,619,814	XXX	
0200084. a-2012 1.00% BOTH	4,265,016	XXX	4,265,016	XXX	
0200085. a-2012 1.25% BOTH	1,788,538	XXX	1,788,538	XXX	
0200086. a-2012 1.50% BOTH	15,641,997	XXX	15,641,997	XXX	
0200087. a-2012 1.75% BOTH	14,147,177	XXX	14,147,177	XXX	
0200088. a-2012 2.25% BOTH	243,103,676	XXX	243,103,676	XXX	
0200089. a-2012 2.50% BOTH	120,178,221	XXX	120,178,221	XXX	
0200090. a-2012 2.75% BOTH	166,094,098	XXX	166,094,098	XXX	
0200091. 1971 GAM 3.50% IMM	177,534	XXX		XXX	177,534
0200092. 1983 GAM 3.50% IMM	525,338	XXX		XXX	525,338
0200093. 1983 GAM 4.75% IMM	139,191	XXX		XXX	139,191
0200094. 1983 GAM 5.00% IMM	268,772	XXX		XXX	268,772
0200095. 1983 GAM 5.25% IMM	1,396,172	XXX		XXX	1,396,172
0200096. 1983 GAM 5.50% IMM	4,889,575	XXX		XXX	4,889,575
0200097. 1983 GAM 5.75% IMM	82,648	XXX		XXX	82,648
0200098. 1983 GAM 6.00% IMM	28,997,228	XXX		XXX	28,997,228

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EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS

1	2	3	4	5	6
Valuation Standard	Total ^(a)	Industrial	Ordinary	Credit (Group and Individual)	Group
0200099. 1983 GAM 6.25% IMM	25,366,624	XXX		XXX	25,366,624
0200100. 1983 GAM 6.50% IMM	24,411,446	XXX		XXX	24,411,446
0200101. 1983 GAM 6.75% IMM	7,029,949	XXX		XXX	7,029,949
0200102. 1983 GAM 7.00% IMM	12,606,607	XXX		XXX	12,606,607
0200103. 1983 GAM 7.25% IMM	15,519,720	XXX		XXX	15,519,720
0200104. 1983 GAM 7.50% IMM	159,034,451	XXX		XXX	159,034,451
0200105. 1983 GAM 7.75% IMM	14,303,673	XXX		XXX	14,303,673
0200106. 1983 GAM 8.00% IMM	22,148,151	XXX		XXX	22,148,151
0200107. 1983 GAM 8.25% IMM	11,106,410	XXX		XXX	11,106,410
0200108. 1983 GAM 8.50% IMM	3,691,173	XXX		XXX	3,691,173
0200109. 1983 GAM 8.75% IMM	22,135,028	XXX		XXX	22,135,028
0200110. 1983 GAM 9.25% IMM	9,234,323	XXX		XXX	9,234,323
0200111. 1983 GAM 9.50% IMM	39,394,903	XXX		XXX	39,394,903
0200112. 1983 GAM 9.75% IMM	24,982,130	XXX		XXX	24,982,130
0200113. 1983 GAM 10.50% IMM	9,581,312	XXX		XXX	9,581,312
0200114. 1983 GAM 10.75% IMM	5,692,689	XXX		XXX	5,692,689
0200115. 1983 GAM 11.00% IMM	8,871,445	XXX		XXX	8,871,445
0200116. 1983 GAM 11.25% IMM	7,776,315	XXX		XXX	7,776,315
0200117. 1994 GAM 2.25% IMM	8,393,659	XXX		XXX	8,393,659
0200118. 1994 GAR 0.75% IMM	12,151,986	XXX		XXX	12,151,986
0200119. 1994 GAR 1.00% IMM	57,177,052	XXX		XXX	57,177,052
0200120. 1994 GAR 1.25% IMM	186,776,414	XXX		XXX	186,776,414
0200121. 1994 GAR 1.50% IMM	83,383,192	XXX		XXX	83,383,192
0200122. 1994 GAR 1.75% IMM	1,324,435,933	XXX		XXX	1,324,435,933
0200123. 1994 GAR 2.00% IMM	824,263,304	XXX		XXX	824,263,304
0200124. 1994 GAR 2.25% IMM	2,351,189,725	XXX		XXX	2,351,189,725
0200125. 1994 GAR 2.50% IMM	859,000,995	XXX		XXX	859,000,995
0200126. 1994 GAR 2.75% IMM	1,979,666,849	XXX		XXX	1,979,666,849
0200127. 1994 GAR 3.00% IMM	994,349,272	XXX		XXX	994,349,272
0200128. 1994 GAR 3.25% IMM	705,672,506	XXX		XXX	705,672,506
0200129. 1994 GAR 3.50% IMM	896,795,427	XXX		XXX	896,795,427
0200130. 1994 GAR 3.75% IMM	2,055,758,210	XXX		XXX	2,055,758,210
0200131. 1994 GAR 4.00% IMM	4,386,177,187	XXX		XXX	4,386,177,187
0200132. 1994 GAR 4.25% IMM	357,940,703	XXX		XXX	357,940,703
0200133. 1994 GAR 4.50% IMM	301,735,481	XXX		XXX	301,735,481
0200134. 1994 GAR 4.75% IMM	47,905,416	XXX		XXX	47,905,416
0200135. 1994 GAR 5.00% IMM	311,193,822	XXX		XXX	311,193,822
0200136. 1994 GAR 5.25% IMM	65,721,298	XXX		XXX	65,721,298
0200137. 1994 GAR 5.50% IMM	277,387,084	XXX		XXX	277,387,084
0200138. 1994 GAR 5.75% IMM	17,352,335	XXX		XXX	17,352,335
0200139. 1994 GAR 6.00% IMM	134,861,651	XXX		XXX	134,861,651
0200140. 1994 GAR 6.25% IMM	289,517	XXX		XXX	289,517
0200141. 1994 GAR 6.50% IMM	2,985,503	XXX		XXX	2,985,503
0200142. 1994 GAR 6.75% IMM	5,521,124	XXX		XXX	5,521,124
0200143. 83 IAM 4.25% IMM	2,508,344	XXX	2,508,344	XXX	
0200144. 83 IAM 4.50% IMM	325,299	XXX	325,299	XXX	
0200145. 83 IAM 4.75% IMM	4,827,619	XXX	4,827,619	XXX	
0200146. 83 IAM 5.00% IMM	9,298,630	XXX	9,298,630	XXX	
0200147. 83 IAM 5.25% IMM	419,797,641	XXX	419,797,641	XXX	
0200148. 83 IAM 5.50% IMM	208,106,971	XXX	208,106,971	XXX	
0200149. 83 IAM 6.00% IMM	99,811,883	XXX	99,811,883	XXX	
0200150. 83 IAM 6.50% IMM	118,302,057	XXX	118,302,057	XXX	
0200151. 83 IAM 6.75% IMM	82,352,454	XXX	82,352,454	XXX	
0200152. 83 IAM 7.00% IMM	7,622,329	XXX	7,622,329	XXX	
0200153. a-2012 2.00% IMM	367,941,347	XXX		XXX	367,941,347
0200154. 2012 IAR 3.75% DEF	70,436	XXX		XXX	70,436
0200155. 2012 IAR 3.75% IMM	8,320,791	XXX		XXX	8,320,791
0200156. 2012 IAR VM-22 Non-Jumbo 1% - 1.49% DEF	416,254	XXX		XXX	416,254
0200157. 2012 IAR VM-22 Non-Jumbo 1% - 1.49% IMM	46,708,511	XXX		XXX	46,708,511
0200158. 2012 IAR VM-22 Non-Jumbo 1.5% - 1.99% DEF	1,126,284	XXX		XXX	1,126,284
0200159. 2012 IAR VM-22 Non-Jumbo 1.5% - 1.99% IMM	19,926,543	XXX		XXX	19,926,543
0200160. 2012 IAR VM-22 Non-Jumbo 2% - 2.49% DEF	616,879	XXX		XXX	616,879
0200161. 2012 IAR VM-22 Non-Jumbo 2% - 2.49% IMM	14,311,974	XXX		XXX	14,311,974
0200162. 2012 IAR VM-22 Non-Jumbo 2.5% - 2.99% DEF	870,814	XXX		XXX	870,814
0200163. 2012 IAR VM-22 Non-Jumbo 2.5% - 2.99% IMM	6,524,424	XXX		XXX	6,524,424
0200164. 2012 IAR VM-22 Non-Jumbo 3% - 3.49% IMM	13,881,030	XXX		XXX	13,881,030
0200165. 2012 IAR VM-22 Non-Jumbo 3.5% - 3.99% DEF	294,954	XXX		XXX	294,954
0200166. 2012 IAR VM-22 Non-Jumbo 3.5% - 3.99% IMM	19,768,001	XXX		XXX	19,768,001
0200167. 2012 IAR VM-22 Non-Jumbo 4% - 4.5% DEF	52,979	XXX		XXX	52,979
0200168. 71 IAM 10.75% IMM	15,974	XXX		XXX	15,974
0200169. 71 IAM 11.25% IMM	554,696	XXX		XXX	554,696
0200170. 71 IAM 3.5% IMM	336,526	XXX		XXX	336,526
0200171. 71 IAM 4% DEF	4,757	XXX		XXX	4,757
0200172. 71 IAM 4% IMM	341,175	XXX		XXX	341,175
0200173. 71 IAM 5.5% IMM	330,173	XXX		XXX	330,173
0200174. 71 IAM 7.5% DEF	269,494	XXX		XXX	269,494
0200175. 71 IAM 7.5% IMM	1,703,919	XXX		XXX	1,703,919
0200176. 71 IAM 7.75% DEF	7,447	XXX		XXX	7,447
0200177. 71 IAM 7.75% IMM	555,334	XXX		XXX	555,334
0200178. 71 IAM 9.75% IMM	496,300	XXX		XXX	496,300
0200179. 83a 10.5% IMM	6,467	XXX		XXX	6,467
0200180. 83a 11% IMM	503,519	XXX		XXX	503,519
0200181. 83a 4.75% IMM	40,818	XXX		XXX	40,818
0200182. 83a 5% DEF	61,102	XXX		XXX	61,102
0200183. 83a 5% IMM	387,484	XXX		XXX	387,484
0200184. 83a 5.25% DEF	704,177	XXX		XXX	704,177
0200185. 83a 5.25% IMM	131,419	XXX		XXX	131,419
0200186. 83a 5.5% IMM	81,389	XXX		XXX	81,389
0200187. 83a 5.75% IMM	98,224	XXX		XXX	98,224
0200188. 83a 6% DEF	122,654	XXX		XXX	122,654
0200189. 83a 6% IMM	1,035,465	XXX		XXX	1,035,465
0200190. 83a 6.25% DEF	74,190	XXX		XXX	74,190

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS

1	2	3	4	5	6
Valuation Standard	Total ^(a)	Industrial	Ordinary	Credit (Group and Individual)	Group
0200191. 83a 6.25% IMM	15,994,893	XXX		XXX	15,994,893
0200192. 83a 6.5% IMM	7,666,118	XXX		XXX	7,666,118
0200193. 83a 6.75% IMM	13,668,700	XXX		XXX	13,668,700
0200194. 83a 7% IMM	36,103,049	XXX		XXX	36,103,049
0200195. 83a 7.25% IMM	9,602,743	XXX		XXX	9,602,743
0200196. 83a 7.5% DEF	27,824	XXX		XXX	27,824
0200197. 83a 7.5% IMM	740,728	XXX		XXX	740,728
0200198. 83a 7.75% IMM	6,656,767	XXX		XXX	6,656,767
0200199. 83a 8% IMM	1,676,780	XXX		XXX	1,676,780
0200200. 83a 8.25% IMM	9,400,059	XXX		XXX	9,400,059
0200201. 83a 8.5% IMM	60,237	XXX		XXX	60,237
0200202. 83a 8.75% IMM	4,404,106	XXX		XXX	4,404,106
0200203. 83a 9.25% IMM	943,620	XXX		XXX	943,620
0200204. 83a 9.5% IMM	351,584	XXX		XXX	351,584
0200205. a-2000 3.5% DEF	1,426	XXX		XXX	1,426
0200206. a-2000 3.75% DEF	92,278	XXX		XXX	92,278
0200207. a-2000 3.75% IMM	23,205	XXX		XXX	23,205
0200208. a-2000 4% DEF	306,913	XXX		XXX	306,913
0200209. a-2000 4% IMM	23,845,457	XXX		XXX	23,845,457
0200210. a-2000 4.25% IMM	5,352,993	XXX		XXX	5,352,993
0200211. a-2000 4.5% IMM	5,495,495	XXX		XXX	5,495,495
0200212. a-2000 4.75% DEF	23,638	XXX		XXX	23,638
0200213. a-2000 4.75% IMM	1,098,159	XXX		XXX	1,098,159
0200214. a-2000 5% DEF	2,278,854	XXX		XXX	2,278,854
0200215. a-2000 5% IMM	30,463,688	XXX		XXX	30,463,688
0200216. a-2000 5.25% IMM	26,753,065	XXX		XXX	26,753,065
0200217. a-2000 5.5% IMM	18,792,209	XXX		XXX	18,792,209
0200218. a-2000 5.75% IMM	156,935	XXX		XXX	156,935
0200219. a-2000 6% IMM	29,796,540	XXX		XXX	29,796,540
0200220. a-2000 6.25% IMM	1,265,547	XXX		XXX	1,265,547
0200221. a-2000 6.5% IMM	19,069,473	XXX		XXX	19,069,473
0200222. a-2000 6.75% IMM	12,921,644	XXX		XXX	12,921,644
0200223. Other - Fund Balance Reserves	15,150,103,120	XXX		XXX	15,150,103,120
0299997. Totals (Gross)	60,554,480,626	XXX	25,903,200,403	XXX	34,651,280,222
0299998. Reinsurance ceded	25,472,547,973	XXX	7,761,196,662	XXX	17,711,351,311
0299999. Annuities: Totals (Net)	35,081,932,653	XXX	18,142,003,741	XXX	16,939,928,912
0300001. 37 SA 3.50% IMM	92,807		92,807		
0300002. a-1949 3.50% IMM	76,985		76,985		
0300003. 71 IAM 3.50% IMM	43,585		43,585		
0300004. 71 IAM 6.00% IMM	207,518		207,518		
0300005. 71 IAM 7.50% IMM	1,275,790		1,275,790		
0300006. 83a 6.25% IMM	402,332		402,332		
0300007. 83a 6.50% IMM	451,085		451,085		
0300008. 83a 6.75% IMM	523,922		523,922		
0300009. 83a 7.00% IMM	280,470		280,470		
0300010. 83a 7.25% IMM	242,331		242,331		
0300011. 83a 7.75% IMM	279,745		279,745		
0300012. 83a 8.00% IMM	123,139		123,139		
0300013. 83a 8.25% IMM	680,286		680,286		
0300014. 83a 8.75% IMM	461,447		461,447		
0300015. 83a 9.25% IMM	103,231		103,231		
0300016. 83a 11.00% IMM	181,026		181,026		
0300017. 71 IAM 11.25% IMM	164,847		164,847		
0300018. a-2000 4.00% IMM	5,270,767		5,270,767		
0300019. a-2000 4.25% IMM	6,443,964		6,443,964		
0300020. a-2000 4.50% IMM	6,721,331		6,721,331		
0300021. a-2000 5.00% IMM	6,639,912		6,639,912		
0300022. a-2000 5.25% IMM	2,865,805		2,865,805		
0300023. a-2000 5.50% IMM	3,497,394		3,497,394		
0300024. a-2000 6.00% IMM	7,178,595		7,178,595		
0300025. a-2000 6.25% IMM	479,253		479,253		
0300026. a-2000 6.50% IMM	808,035		808,035		
0300027. a-2000 6.75% IMM	518,770		518,770		
0300028. a-2000 7.00% IMM	551,676		551,676		
0300029. a-2012 1.25% IMM	22,638		22,638		
0300030. a-2012 1.50% IMM	415,330		415,330		
0300031. a-2012 1.75% IMM	2,791,992		2,791,992		
0300032. a-2012 2.00% IMM	2,679,976		2,679,976		
0300033. a-2012 3.00% IMM	5,316,657		5,316,657		
0300034. a-2012 3.50% IMM	1,997,812		1,997,812		
0300035. a-2012 3.75% IMM	12,262,177		12,262,177		
0300036. a-2012 4.00% IMM	26,657,542		26,657,542		
0300037. a-2012 4.25% IMM	2,136,336		2,136,336		
0300038. a-2012 2.50% IMM	2,326,348		2,326,348		
0300039. a-2012 2.75% IMM	4,080,794		4,080,794		
0300040. a-2012 3.25% IMM	4,485,914		4,485,914		
0300041. a-2012 2.25% IMM	4,016,154		4,016,154		
0300042. 51 GA 3.00%	307,287				307,287
0399997. Totals (Gross)	116,062,999		115,755,712		307,287
0399998. Reinsurance ceded	307,287				307,287
0399999. SCWLC: Totals (Net)	115,755,712		115,755,712		
0400001. 110% INTERCO DI & 41 CSO 2.50%	514		514		
0400002. 110% INTERCO DI & AE 3.00%	30		30		
0400003. 59 ADB 3.00%	32		32		
0400004. 59 ADB & 2001 CSO 4.50%	34,557		34,557		
0400005. 59 ADB & 58 CSO 2.50%	287,967		287,967		
0400006. 59 ADB & 58 CSO 3.50%	277,079		277,079		
0400007. 59 ADB & 58 CSO 4.50%	330,795		330,795		
0400008. 59 ADB & 80 CSO 4.50%	1,319,620		1,319,620		
0400009. 59 ADB 3.00%	406,748				406,748
0499997. Totals (Gross)	2,657,341		2,250,593		406,748
0499998. Reinsurance ceded					

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 5 - AGGREGATE RESERVE FOR LIFE CONTRACTS

1	2	3	4	5	6
Valuation Standard	Total ^(a)	Industrial	Ordinary	Credit (Group and Individual)	Group
0499999. Accidental Death Benefits: Totals (Net)	2,657,341		2,250,593		406,748
0500001. 35-39 INTERCO DISA + 58 CSO 4.50%	19,854		19,854		
0500002. 1958 CSO Benefit 5 2.50%	205		205		
0500003. 1985 CIDA 4.00%	622,618				622,618
0500004. MOD 52 DISAB TABLE BEN 5 4.00%	1,656				1,656
0500005. 120% 52 INTERCO DISA 2.50%	9,329		9,329		
0500006. 120% 52 INTERCO DISA 3.00%	37,977		37,977		
0500007. 120% 52 INTERCO DISA 3.50%	6,048,505		6,048,505		
0500008. 120% 52 INTERCO DISA 4.00%	81,712		81,712		
0500009. 35-39 INTERCO + 2001 CSO 3.00%	4,972,030		4,972,030		
0500010. 35-39 INTERCO + 2001 CSO 3.50%	82,735,665		82,735,665		
0500011. 35-39 INTERCO + 2001 CSO 4.50%	1,544,145		1,544,145		
0500012. 35-39 INTERCO + 46-49 2.50%	72		72		
0500013. 35-39 INTERCO + 46-49 5.50%	18		18		
0500014. 35-39 INTERCO + 58 CSO 2.50%	154,179		154,179		
0500015. 35-39 INTERCO + 58 CSO 3.00%	54		54		
0500016. 35-39 INTERCO + 58 CSO 3.50%	4,088,414		4,088,414		
0500017. 35-39 INTERCO + 58 CSO 4.50%	7,983		7,983		
0500018. 35-39 INTERCO + 58 CSO 5.00%	2,820		2,820		
0500019. 35-39 INTERCO + 58 CSO 5.50%	368,300		368,300		
0500020. 35-39 INTERCO + 80 CSO 3.00%	88		88		
0500021. 35-39 INTERCO + 80 CSO 3.50%	24,073		24,073		
0500022. 35-39 INTERCO + 80 CSO 4.00%	12,630,284		12,630,284		
0500023. 35-39 INTERCO + 80 CSO 4.50%	34,151,531		34,151,531		
0500024. 35-39 INTERCO + 80 CSO 5.00%	2,990,934		2,990,934		
0500025. 35-39 INTERCO + 80 CSO 5.50%	7,319,663		7,319,663		
0500026. 1985 NHHS 80 CSO 4.50%	13,364,311		13,364,311		
0599997. Totals (Gross)	171,176,421		170,552,147		624,274
0599998. Reinsurance ceded					
0599999. Disability-Active Lives: Totals (Net)	171,176,421		170,552,147		624,274
0600001. 35-39 INTERCO DISA + 58 CSO 2.50%	111,061		111,061		
0600002. 1985 CIDA 4.00%	1,298,637				1,298,637
0600003. MOD 52 DISAB TABLE BEN 5 4.00%	536,556				536,556
0600004. MOD 52 DISAB TABLE BEN 5 3.00%	8,136,577		8,136,577		
0600005. MOD 52 DISAB TABLE BEN 5 3.50%	101,675,093		101,675,093		
0600006. MOD 52 DISAB TABLE BEN 5 4.00%	77,007,054		77,007,054		
0600007. MOD 52 DISAB TABLE BEN 5 4.50%	70,958,605		70,958,605		
0600008. MOD 52 DISAB TABLE BEN 5 5.00%	7,637,763		7,637,763		
0600009. MOD 52 DISAB TABLE BEN 5 5.50%	17,030,228		17,030,228		
0600010. MOD 52 DISAB TABLE BEN 5 6.00%	439,701		439,701		
0600011. 1985 NHHS 80 CSO 4.00%	2,902,495		2,780,074		122,421
0699997. Totals (Gross)	287,733,770		285,776,156		1,957,614
0699998. Reinsurance ceded	122,421				122,421
0699999. Disability-Disabled Lives: Totals (Net)	287,611,349		285,776,156		1,835,193
0700001. Apportionable	194		194		
0700002. VM-21 Reserve	42,545,573		42,545,573		
0700003. Asset Adequacy Reserve					
0700004. APPORTIONABLE	4,182,160		4,182,160		
0700005. VM-20 DET/STO Excess over NPR	142,838,460		142,838,460		
0700006. MIN. DEATH BENEFIT	573,601,012		573,601,012		
0700007. POLICY LOANS	290,965		290,965		
0700008. PREMIUM DEFICIENCY	424,191,033		424,191,033		
0700009. TERM CONVERSIONS	33,325,477		33,325,477		
0700010. TERM COST RESERVE	78		78		
0700011. VLI COI	47,850		47,850		
0700012. CASH FLOW TESTING	89,906,906		89,906,906		
0700013. Additional NY Regulation 128 Reserves	1,000,000				1,000,000
0700014. GMDB	223,554				223,554
0799997. Totals (Gross)	1,312,153,262		1,310,929,708		1,223,554
0799998. Reinsurance ceded	187,424,928		187,424,928		
0799999. Miscellaneous Reserves: Totals (Net)	1,124,728,334		1,123,504,780		1,223,554
9999999. Totals (Net) - Page 3, Line 1	134,668,226,295		111,761,804,244		22,906,422,051

(a) Included in the above table are amounts of deposit-type contracts that originally contained a mortality risk. Amounts of deposit-type contracts in Column 2 that no longer contain a mortality risk are Life Insurance \$; Annuities \$; Supplementary Contracts with Life Contingencies \$; Accidental Death Benefits \$; Disability - Active Lives \$; Disability - Disabled Lives \$; Miscellaneous Reserves \$

EXHIBIT 5 - INTERROGATORIES

- 1.1 Has the reporting entity ever issued both participating and non-participating contracts?..... Yes [X] No []
- 1.2 If not, state which kind is issued.
- 2.1 Does the reporting entity at present issue both participating and non-participating contracts?..... Yes [X] No []
- 2.2 If not, state which kind is issued.
- 3. Does the reporting entity at present issue or have in force contracts that contain non-guaranteed elements?..... Yes [X] No []
If so, attach a statement that contains the determination procedures, answers to the interrogatories and an actuarial opinion as described in the instructions.
- 4. Has the reporting entity any assessment or stipulated premium contracts in force? Yes [] No [X]
If so, state:
4.1 Amount of insurance? \$
4.2 Amount of reserve? \$
4.3 Basis of reserve:
4.4 Basis of regular assessments:
4.5 Basis of special assessments:
4.6 Assessments collected during the year \$
- 5. If the contract loan interest rate guaranteed in any one or more of its currently issued contracts is less than 5%, not in advance, state the contract loan rate guarantees on any such contracts.
3%, 4%
- 6. Does the reporting entity hold reserves for any annuity contracts that are less than the reserves that would be held on a standard basis? Yes [] No [X]
6.1 If so, state the amount of reserve on such contracts on the basis actually held: \$
6.2 That would have been held (on an exact or approximate basis) using the actual ages of the annuitants; the interest rate(s) used in 6.1; and the same mortality basis used by the reporting entity for the valuation of comparable annuity benefits issued to standard lives. If the reporting entity has no comparable annuity benefits for standard lives to be valued, the mortality basis shall be the table most recently approved by the state of domicile for valuing individual annuity benefits: \$
Attach statement of methods employed in their valuation.
- 7. Does the reporting entity have any Synthetic GIC contracts or agreements in effect as of December 31 of the current year? Yes [X] No []
7.1 If yes, state the total dollar amount of assets covered by these contracts or agreements \$ 23,667,612,328
7.2 Specify the basis (fair value, amortized cost, etc.) for determining the amount:
Fair Value
7.3 State the amount of reserves established for this business: \$
7.4 Identify where the reserves are reported in the blank:
Ex5 Sect G
- 8. Does the reporting entity have any Contingent Deferred Annuity contracts or agreements in effect as of December 31 of the current year? Yes [] No [X]
8.1 If yes, state the total dollar amount of account value covered by these contracts or agreements: \$
8.2 State the amount of reserves established for this business: \$
8.3 Identify where the reserves are reported in the blank:
- 9. Does the reporting entity have any Guaranteed Lifetime Income Benefit contracts, agreements or riders in effect as of December 31 of the current year? Yes [X] No []
9.1 If yes, state the total dollar amount of any account value associated with these contracts, agreements or riders: \$ 2,239,588,848
9.2 State the amount of reserves established for this business: \$ 42,545,573
9.3 Identify where the reserves are reported in the blank:
Ex 5 Sect G

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

1 Description of Valuation Class	2 Valuation Basis Changed from		3 Changed To	4 Increase in Actuarial Reserve Due to Change
NONE				
9999999 - Total (Column 4, only)				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 6 - AGGREGATE RESERVES FOR ACCIDENT AND HEALTH CONTRACTS (a)

	1 Total	Comprehensive		4 Medicare Supplement	5 Vision Only	6 Dental Only	7 Federal Employees Health Benefits Plan	8 Title XVIII Medicare	9 Title XIX Medicaid	10 Credit A&H	11 Disability Income	12 Long-Term Care	13 Other Health
		2 Individual	3 Group										
ACTIVE LIFE RESERVE													
1. Unearned premium reserves	78,814,683			29,458							45,006,212	33,779,012	
2. Additional contract reserves (b)	3,061,829,906			18,874							558,844,010	2,502,967,021	
3. Additional actuarial reserves-Asset/Liability analysis	4,555,000,000											4,555,000,000	
4. Reserve for future contingent benefits													
5. Reserve for rate credits													
6. Aggregate write-ins for reserves													
7. Totals (Gross)	7,695,644,588			48,333							603,850,222	7,091,746,034	
8. Reinsurance ceded	5,935,342,534			43,499								5,935,299,035	
9. Totals (Net)	1,760,302,054			4,833							603,850,222	1,156,446,999	
CLAIM RESERVE													
10. Present value of amounts not yet due on claims	2,140,916,952										1,826,048,010	314,592,010	276,932
11. Additional actuarial reserves-Asset/Liability analysis													
12. Reserve for future contingent benefits													
13. Aggregate write-ins for reserves													
14. Totals (Gross)	2,140,916,952										1,826,048,010	314,592,010	276,932
15. Reinsurance ceded	300,437,421										14,972,912	285,187,578	276,932
16. Totals (Net)	1,840,479,531										1,811,075,098	29,404,432	
17. TOTAL (Net)	3,600,781,585			4,833							2,414,925,321	1,185,851,431	
18. TABULAR FUND INTEREST	121,044,909			85							92,846,182	28,198,642	
DETAILS OF WRITE-INS													
0601.													
0602.													
0603.													
0698. Summary of remaining write-ins for Line 6 from overflow page													
0699. TOTALS (Lines 0601 thru 0603 plus 0698) (Line 6 above)													
1301.													
1302.													
1303.													
1398. Summary of remaining write-ins for Line 13 from overflow page													
1399. TOTALS (Lines 1301 thru 1303 plus 1398) (Line 13 above)													

(a) Indicate if blocks of business in run-off that comprise less than 5% of premiums and less than 5% of reserve and loans liability are aggregated with material blocks of business and which columns are affected.
 (b) Attach statement as to valuation standard used in calculating this reserve, specifying reserve bases, interest rates and methods.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT 7 - DEPOSIT TYPE CONTRACTS

	1	2	3	4	5	6
	Total	Guaranteed Interest Contracts	Annuities Certain	Supplemental Contracts	Dividend Accumulations or Refunds	Premium and Other Deposit Funds
1. Balance at the beginning of the year before reinsurance	15,914,581,761	11,463,626,661	1,947,826,499	656,541,813	482,368,002	1,364,218,786
2. Deposits received during the year	6,395,593,170	4,023,953,548	369,013,369	154,517,942	25,861,176	1,822,247,135
3. Investment earnings credited to the account	347,298,372	216,109,155	54,320,937	20,725,431	15,593,590	40,549,259
4. Other net change in reserves	(5,176,217)	(4,036,098)			(158,471)	(981,648)
5. Fees and other charges assessed						
6. Surrender charges						
7. Net surrender or withdrawal payments	5,566,296,327	1,867,320,873	366,343,034	125,011,666	51,481,543	3,156,139,211
8. Other net transfers to or (from) Separate Accounts	(1,168,255,143)					(1,168,255,143)
9. Balance at the end of current year before reinsurance (Lines 1+2+3+4-5-6-7-8)	18,254,255,902	13,832,332,393	2,004,817,771	706,773,520	472,182,754	1,238,149,464
10. Reinsurance balance at the beginning of the year	(1,334,739,583)					(1,334,739,583)
11. Net change in reinsurance assumed	(182,912,918)					(182,912,918)
12. Net change in reinsurance ceded	(304,781,484)					(304,781,484)
13. Reinsurance balance at the end of the year (Lines 10+11-12)	(1,212,871,017)					(1,212,871,017)
14. Net balance at the end of current year after reinsurance (Lines 9 + 13)	17,041,384,885	13,832,332,393	2,004,817,771	706,773,520	472,182,754	25,278,447

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
EXHIBIT 8 - CLAIMS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS

PART 1 - Liability End of Current Year

	1 Total	2 Industrial Life	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health		
			3 Life Insurance	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other
1. Due and unpaid:											
1.1 Direct	20,246,522			1,360,066				1,968,069			16,918,386
1.2 Reinsurance assumed	16,321,668							16,321,668			
1.3 Reinsurance ceded	7,912,413							1,968,069			5,944,344
1.4 Net	28,655,777			1,360,066				16,321,668			10,974,043
2. In course of settlement:											
2.1 Resisted											
2.11 Direct	1,300,000		1,300,000								
2.12 Reinsurance assumed											
2.13 Reinsurance ceded											
2.14 Net	1,300,000		(b) 1,300,000	(b)	(b)	(b)	(b)				
2.2 Other											
2.21 Direct	829,296,828		662,327,295	728,378			155,371,721				10,869,434
2.22 Reinsurance assumed	80,037,425		70,512,270				9,525,155				
2.23 Reinsurance ceded	231,503,248		226,188,456				5,290,825				23,967
2.24 Net	677,831,006		(b) 506,651,109	(b) 728,378	(b)	(b)	159,606,052	(b)	(b)	(b)	10,845,467
3. Incurred but unreported:											
3.1 Direct	55,423,061		41,260,096				8,385,900		146,200		5,630,865
3.2 Reinsurance assumed	2,452,360		2,452,360								
3.3 Reinsurance ceded	23,778,294		16,722,600				5,101,900		46,390		1,907,404
3.4 Net	34,097,127		(b) 26,989,856	(b)	(b)	(b)	3,284,000	(b)	99,810	(b)	3,723,460
4. TOTALS											
4.1 Direct	906,266,411		704,887,391	2,088,444			163,757,621	1,968,069	146,200		33,418,685
4.2 Reinsurance assumed	98,811,453		72,964,630				9,525,155	16,321,668			
4.3 Reinsurance ceded	263,193,955		242,911,056				10,392,725	1,968,069	46,390		7,875,715
4.4 Net	741,883,909	(a)	(a) 534,940,966	2,088,444			(a) 162,890,052	16,321,668	99,810		25,542,970

(a) Including matured endowments (but not guaranteed annual pure endowments) unpaid amounting to \$ in Column 2, \$ in Column 3 and \$108,916 in Column 7.

(b) Include only portion of disability and accident and health claim liabilities applicable to assumed "accrued" benefits. Reserves (including reinsurance assumed and net of reinsurance ceded) for unaccrued benefits for Ordinary Life Insurance \$ Individual Annuities \$, Credit Life (Group and Individual) \$122,421 , and Group Life \$, are included in Page 3, Line 1, (See Exhibit 5, Section on Disability Disabled Lives); and for Group Accident and Health \$196,480 Credit (Group and Individual) Accident and Health \$, and Other Accident and Health \$ are included in Page 3, Line 2 (See Exhibit 6, Claim Reserve).

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
EXHIBIT 8 - CLAIMS FOR LIFE AND ACCIDENT AND HEALTH CONTRACTS

PART 2 - Incurred During the Year

	1 Total	2 Industrial Life (a)	Ordinary			6 Credit Life (Group and Individual)	Group		Accident and Health		
			3 Life Insurance (b)	4 Individual Annuities	5 Supplementary Contracts		7 Life Insurance (c)	8 Annuities	9 Group	10 Credit (Group and Individual)	11 Other
1. Settlements During the Year:											
1.1 Direct	6,341,931,064		3,156,053,277	816,121,830	23,739,019		132,466,162	1,800,396,727	67,644		413,086,405
1.2 Reinsurance assumed	310,895,101		77,577,561	121,139			14,096,101	219,100,300			
1.3 Reinsurance ceded	1,621,955,998		910,481,316	41,151,181			39,956,156	559,979,960	39,089		70,348,296
1.4 Net	(d) 5,030,870,167		2,323,149,522	775,091,788	23,739,019		106,606,107	1,459,517,067	28,555		342,738,109
2. Liability December 31, current year from Part 1:											
2.1 Direct	906,266,411		704,887,391	2,088,444			163,757,621	1,968,069	146,200		33,418,685
2.2 Reinsurance assumed	98,811,453		72,964,630				9,525,155	16,321,668			
2.3 Reinsurance ceded	263,193,955		242,911,056				10,392,725	1,968,069	46,390		7,875,715
2.4 Net	741,883,909		534,940,966	2,088,444			162,890,052	16,321,668	99,810		25,542,970
3. Amounts recoverable from reinsurers December 31, current year	100,105,788		98,706,567				1,232,169				167,052
4. Liability December 31, prior year:											
4.1 Direct	846,104,305		692,656,769	1,944,049			116,767,226	1,708,000	144,800		32,883,461
4.2 Reinsurance assumed	53,537,540		31,123,716				9,337,043	13,076,781			
4.3 Reinsurance ceded	217,536,903		196,501,591				13,117,713	1,708,000	58,550		6,151,048
4.4 Net	682,104,943		527,278,894	1,944,049			112,986,556	13,076,781	86,250		26,732,413
5. Amounts recoverable from reinsurers December 31, prior year	68,382,479		64,795,203				3,492,769				94,507
6. Incurred Benefits											
6.1 Direct	6,402,093,170		3,168,283,899	816,266,225	23,739,019		179,456,557	1,800,656,796	69,044		413,621,629
6.2 Reinsurance assumed	356,169,014		119,418,475	121,139			14,284,213	222,345,187			
6.3 Reinsurance ceded	1,699,336,359		990,802,144	41,151,181			34,970,568	560,240,029	26,929		72,145,508
6.4 Net	5,058,925,825		2,296,900,230	775,236,183	23,739,019		158,770,202	1,462,761,954	42,115		341,476,122

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

(b) Including matured endowments (but not guaranteed annual pure endowments) amounting to \$13,888,333 in Line 1.1, \$13,888,333 in Line 1.4.
 \$13,068,360 in Line 6.1, and \$13,068,360 in Line 6.4.

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

(d) Includes \$29,079,979 premiums waived under total and permanent disability benefits.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT OF NON-ADMITTED ASSETS

	1	2	3
	Current Year Total Nonadmitted Assets	Prior Year Total Nonadmitted Assets	Change in Total Nonadmitted Assets (Col. 2 - Col. 1)
1. Bonds (Schedule D)			
2. Stocks (Schedule D):			
2.1 Preferred stocks			
2.2 Common stocks	183,808	189,047	5,239
3. Mortgage loans on real estate (Schedule B):			
3.1 First liens			
3.2 Other than first liens			
4. Real estate (Schedule A):			
4.1 Properties occupied by the company			
4.2 Properties held for the production of income			
4.3 Properties held for sale			
5. Cash (Schedule E - Part 1), cash equivalents (Schedule E - Part 2) and short-term investments (Schedule DA)			
6. Contract loans	150,007	342,219	192,212
7. Derivatives (Schedule DB)			
8. Other invested assets (Schedule BA)	56,271,383	52,727,080	(3,544,303)
9. Receivables for securities			
10. Securities lending reinvested collateral assets (Schedule DL)			
11. Aggregate write-ins for invested assets			
12. Subtotals, cash and invested assets (Lines 1 to 11)	56,605,198	53,258,346	(3,346,851)
13. Title plants (for Title insurers only)			
14. Investment income due and accrued	4,230,982	2,952,950	(1,278,032)
15. Premiums and considerations:			
15.1 Uncollected premiums and agents' balances in the course of collection	83,268	5,364,153	5,280,885
15.2 Deferred premiums, agents' balances and installments booked but deferred and not yet due ..			
15.3 Accrued retrospective premiums and contracts subject to redetermination			
16. Reinsurance:			
16.1 Amounts recoverable from reinsurers	4,623,440	910,224	(3,713,216)
16.2 Funds held by or deposited with reinsured companies			
16.3 Other amounts receivable under reinsurance contracts			
17. Amounts receivable relating to uninsured plans			
18.1 Current federal and foreign income tax recoverable and interest thereon			
18.2 Net deferred tax asset			
19. Guaranty funds receivable or on deposit			
20. Electronic data processing equipment and software	205,361,696	237,995,201	32,633,505
21. Furniture and equipment, including health care delivery assets	47,433,063	54,967,081	7,534,018
22. Net adjustment in assets and liabilities due to foreign exchange rates			
23. Receivables from parent, subsidiaries and affiliates			
24. Health care and other amounts receivable			
25. Aggregate write-ins for other than invested assets	1,087,242,572	1,069,756,380	(17,486,192)
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	1,405,580,219	1,425,204,335	19,624,116
27. From Separate Accounts, Segregated Accounts and Protected Cell Accounts			
28. Total (Lines 26 and 27)	1,405,580,219	1,425,204,335	19,624,116
DETAILS OF WRITE-INS			
1101.			
1102.			
1103.			
1198. Summary of remaining write-ins for Line 11 from overflow page			
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above)			
2501. Pension plan asset	636,276,736	636,706,810	430,074
2502. Cash advances to agents	284,529,467	238,382,941	(46,146,526)
2503. Commissions and expenses on long-term lease	71,965,385	77,265,261	5,299,876
2598. Summary of remaining write-ins for Line 25 from overflow page	94,470,984	117,401,368	22,930,384
2599. Totals (Lines 2501 thru 2503 plus 2598)(Line 25 above)	1,087,242,572	1,069,756,380	(17,486,192)

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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 #	2021	2020
NET INCOME					
(1) State basis (Page 4, Line 35, Columns 1 & 2)	XXX	XXX	XXX	\$ (216,406,821)	\$ 215,910,615
(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>(216,406,821)</u>	\$ <u>215,910,615</u>
SURPLUS					
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 26,979,255,992	\$ 24,327,413,335
(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>26,979,255,992</u>	\$ <u>24,327,413,335</u>

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

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

c. Accounting policy:

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

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

In addition, the Company uses the following accounting policies:

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

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

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

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

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

The Company held unaffiliated common stocks, for which the transfer of ownership was restricted by contractual requirements,

NOTES TO FINANCIAL STATEMENTS

with carrying values of \$158,064,054.51 as of December 31, 2021 and \$118,643,008.08 as of December 31, 2020.

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

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

The Company held preferred stocks for which the transfer of ownership was restricted by contractual requirements with carrying values of \$409,126,316 as of December 31, 2021 and \$422,459,301 as of December 31, 2020.

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

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

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

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

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

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

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

- (7) Common stocks of unconsolidated subsidiaries, primarily MassMutual Holding LLC (MMHLLC), Glidepath Holdings Inc. (Glidepath) and MM Investment Holding (MMIH), are accounted for using the statutory equity method. The Company accounts for the value of MMHLLC at its underlying U.S. generally accepted accounting principles (U.S. GAAP) equity value less adjustments for the limited statutory basis of accounting related to foreign insurance subsidiaries and controlled affiliates entities as well as an adjustment of \$612,032,332 as of for a portion of its noncontrolling interests (NCI). Glidepath is valued on it is underlying GAAP equity with adjustment to recognize its investment in GALIC based on GALIC's underlying statutory surplus, adjusted for any unamortized goodwill that would have been recognized under the statutory purchase method. Operating results, less dividends declared, for MMHLLC, Glidepath and MMIH are reflected as net unrealized capital gains in the Statutory Statements of Changes in Surplus. Dividends declared from MMHLLC, Glidepath and MMIH are recorded in net investment income when declared and are limited to MMHLLC, Glidepath and MMIH's U.S. GAAP retained earnings. The cost basis of common stocks – subsidiaries and affiliates is adjusted for impairments deemed to be other than temporary.

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

The Company held affiliated common stocks for which the transfer of ownership was restricted by contractual requirements with carrying values of \$3,133,420 as of December 31, 2021 and \$5,694,011 as of December 31, 2020.

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

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

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

NOTES TO FINANCIAL STATEMENTS

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

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

Bonds - general

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

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

When a bond is other-than-temporarily impaired, a new cost basis is established.

Bonds - corporate

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

Bonds - loan-backed and structured securities

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

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

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

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

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

NOTES TO FINANCIAL STATEMENTS

Common and preferred stock

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

Mortgage loans

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

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

Real estate

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

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

Partnerships and LLCs

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

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

d. Going concern:

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

Note 2 – Accounting Changes and Corrections of Errors

- a. For the year ended December 31, 2021, corrections of prior years' errors were recorded in surplus, net of tax:

The following summarizes corrections of prior year errors:

	Year Ended December 31, 2021		
	Increase (Decrease) to:		
	Prior Years' Net Income	Current Year Surplus	Asset or Liability Balances
	(In Millions)		
Common stocks - subsidiaries and affiliates	-	(1,500,000)	(1,500,000)
Net deferred income taxes	-	49,330,000	49,330,000
Policyholders' reserves	(12,536,002)	(12,536,002)	12,536,002
Other Liabilities	17,056,309	17,056,309	(17,056,309)
Liabilities for deposit-type contracts	\$ 26,149,000	\$ 26,149,000	\$ (26,149,000)
Total	\$ 30,669,307	\$ 78,499,307	

Of the \$78,499,307 increase to surplus for prior years' errors, \$30,669,307 was recorded as prior period adjustments, net of taxes.

NOTES TO FINANCIAL STATEMENTS

For the year ended December 31, 2020, 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 -subsidiaries and affiliates	\$ -	\$ (35,100,000)	\$ (35,100,000)
Net deferred income taxes	\$ -	\$ 7,700,000	\$ 7,700,000
Policyholders' reserves	\$ 32,618,396	\$ 32,618,396	\$ (32,618,396)
Total	\$ 32,618,396	\$ 5,218,396	

Of the \$5,218,396 increase to surplus for prior years' errors, \$32,618,396 was recorded as prior period adjustments, net of taxes.

b. Adoption of new accounting standards:

In July 2020, the NAIC adopted modifications to Statements of Statutory Accounting Principles (SSAP) No. 26R, Bonds, effective January 1, 2021. The modifications apply similar reporting for gains or losses due to a tender offer as previously adopted for calls. The difference between consideration and par is recognized as net investment income, while any difference between book value and par is recognized as realized gain or loss. The modifications did not have a material effect on the Company's financial statements.

In July 2020, the NAIC adopted modifications to SSAP No. 32, Preferred Stock, effective January 1, 2021. The modifications define carrying value of redeemable preferred stock as amortized cost for NAIC 1-3 designations, the lower of amortized cost or fair value for NAIC 4-6 designations, and new fair value measurement for perpetual and mandatorily convertible preferred stock. They clarify when failure to meet certain dividends or redemption payments could trigger an impairment assessment that preferred shares issued by joint ventures are included in the scope of this guidance, and clarifies scope related to sinking fund schedules, mandatory conversions, and various other features. They also clarify fair value would be capped by any currently effective call price. The revisions impacted the Company's current unaffiliated and affiliated perpetual preferred stock investments. The modifications did not have a material effect on the Company's financial statements.

In March 2021, the NAIC adopted modifications to SSAP No. 26R, Bonds, effective January 1, 2021. The modifications expand the called bond disclosures to also include bonds terminated early through a tender offer. The modifications did not have a material effect on the Company's financial statements.

In March 2021, the NAIC adopted modifications to SSAP No. 26R, Bonds, effective January 1, 2021. The modifications clarify that perpetual bonds are within scope. Perpetual bonds shall be reported at fair value regardless of NAIC designation, not to exceed any current effective call price. For perpetual bonds with an effective call option, any applicable premium shall be amortized to the next effective call date. For perpetual bonds purchased at a discount, any applicable discount shall be accreted utilizing the yield-to-worst concept. The modifications did not have a material effect on the Company's financial statements.

In May 2021, the NAIC adopted modifications to SSAP No. 2R, Cash, Cash Equivalents, Drafts and Short-Term Investments, effective May 20, 2021. The modifications clarify that cryptocurrencies do not meet the definition of cash, cash equivalents and short-term investments and therefore should be non-admitted assets if held directly by an insurer. The modifications did not have a material effect on the Company's financial statements.

Note 3 – Business Combinations and Goodwill

- a. The Company did not have any business combinations accounted for using the statutory purchase method.
- b. There were no business combinations taking the form of a statutory merger.
- c. The Company did not enter into any assumption reinsurance agreements.
- d. The Company did not recognize an impairment loss on the transactions described above.

Note 4 – Discontinued Operations

The Company did not have any discontinued operations.

Note 5 - Investments

- a. Mortgage loans, including mezzanine real estate loans:
 - (1) The maximum and minimum lending rates for new mortgage loans during 2021 were: Commercial mortgage loans 5.9% and 1.6%, residential mortgage loans 5.6% and 2.8% and mezzanine real estate loans 5.9% and 3.3%.

The maximum and minimum lending rates for new mortgage loans during 2020 were: Commercial mortgage loans 7.4% and 1.9%, residential mortgage loans 5.4% and 3.6% and mezzanine real estate loans 6.6% and 3.5%.
 - (2) The maximum percentage of any one commercial mortgage loan to the estimated value of secured collateral at the time the loan was originated, exclusive of mezzanine, insured, guaranteed or purchase money mortgages, was 100% as of December 31, 201 and 81.2% as of December 31, 2020.
 - (3) As of December 31, 2021 and 2020, the Company did not have any taxes, assessments and amounts advanced and not included in the mortgage loan total.

NOTES TO FINANCIAL STATEMENTS

(4) Age analysis of mortgage loans and identification of mortgage loans in which the insurer is a participant or co-lender in a mortgage loan agreement:

	Residential			Commercial		Mezzanine	Total
	Farm	Insured	All Other	Insured	All Other		
a. 2021							
1. Recorded investment (all)							
(a) Current	\$	- \$ 4,106,934,716	\$ 701,572,479	\$	- \$ 21,419,320,485	117,017,883	\$ 26,344,845,563
(b) 30-59 days past due	-	-	-	-	-	-	-
(c) 60-89 days past due	-	-	-	-	-	-	-
(d) 90-179 days past due	-	-	-	-	-	-	-
(e) 180+ days past due	-	-	-	-	-	-	-
2. Accruing interest 90-179 days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued	-	-	-	-	-	-	-
3. Accruing interest 180+ days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued	-	-	-	-	-	-	-
4. Interest reduced							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Number of loans	-	-	-	-	-	-	-
(c) Percent reduced	-	-	-	-	-	-	-
5. Participant or co-lender in a mortgage loan agreement							
(a) Recorded investment	\$	- \$	- \$	- \$	1,161,924,338	\$	- \$ 1,161,924,338
b. 2020							
1. Recorded investment (all)							
(a) Current	\$	- \$ 3,127,382,350	\$ 735,067,717	\$	- \$ 22,115,926,602	99,956,346	\$ 26,078,333,015
(b) 30-59 days past due	-	-	-	-	-	-	-
(c) 60-89 days past due	-	-	-	-	-	-	-
(d) 90-179 days past due	-	-	-	-	-	-	-
(e) 180+ days past due	-	-	-	-	-	-	-
2. Accruing interest 90-179 days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued	-	-	-	-	-	-	-
3. Accruing interest 180+ days past due							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Interest accrued	-	-	-	-	-	-	-
4. Interest reduced							
(a) Recorded investment	\$	- \$	- \$	- \$	- \$	- \$	- \$
(b) Number of loans	-	-	-	-	-	-	-
(c) Percent reduced	-	-	-	-	-	-	-
5. Participant or co-lender in a mortgage loan agreement							
(a) Recorded investment	\$	- \$	- \$	- \$	1,249,188,926	\$	- \$ 1,249,188,926

NOTES TO FINANCIAL STATEMENTS

- (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. 2021							
1. With allowance for credit losses	\$	-	-	-	-	-	-
2. No allowance for credit losses					48,435,114		48,435,114
3. Total (1+2)					48,435,114		48,435,114
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							
b. 2020							
1. With allowance for credit losses	\$	-	-	-	-	-	-
2. No allowance for credit losses					62,928,055		62,928,055
3. Total (1+2)					62,928,055		62,928,055
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. 2021							
1. Average recorded investment	\$	-	-	-	51,102,422	-	51,102,422
2. Interest income recognized					476,200		476,200
3. Recorded investment on nonaccrual status					48,435,114		48,435,114
4. Amount of interest income recognized using a cash-basis method of accounting					476,200		476,200
b. 2020							
1. Average recorded investment	\$	-	-	-	81,541,022	-	81,541,022
2. Interest income recognized					1,502,367		1,502,367
3. Recorded investment on nonaccrual status					62,928,055		62,928,055
4. Amount of interest income recognized using a cash-basis method of accounting					1,874,581		1,874,581

- (7) Allowance for credit losses - No change

- (8) As of December 31, 2021, the Company did not have any mortgage loans derecognized as a result of foreclosure.

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

b. Debt restructuring:

As of December 31, 2021 and 2020, the Company did not have any restructured debt.

c. Reverse mortgages:

As of December 31, 2021, the Company did not have any reverse mortgages.

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.

NOTES TO FINANCIAL STATEMENTS

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

	(1) Amortized Cost Basis Before OTTI	(2) OTTI Recognized in Loss		(3) Fair Value 1-(2a+2b)
		(2a) Interest	(2b) Non-interest	
OTTI recognized in the first quarter				
a. Intent to sell	\$ -	\$ -	\$ -	\$ -
b. Inability or lack of intent to retain the investment in the security for a period of time sufficient to recover the amortized cost basis	11,247,256	-	6,172,765	5,074,491
c. Total first quarter	<u>\$ 11,247,256</u>	<u>\$ -</u>	<u>\$ 6,172,765</u>	<u>\$ 5,074,491</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	11,352,643	-	966,063	10,386,580
f. Total second quarter	<u>\$ 11,352,643</u>	<u>\$ -</u>	<u>\$ 966,063</u>	<u>\$ 10,386,580</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	4,061,382	-	105,659	3,955,723
i. Total third quarter	<u>\$ 4,061,382</u>	<u>\$ -</u>	<u>\$ 105,659</u>	<u>\$ 3,955,723</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	6,658,614	-	168,108	6,490,506
l. Total fourth quarter	<u>\$ 6,658,614</u>	<u>\$ -</u>	<u>\$ 168,108</u>	<u>\$ 6,490,506</u>
m. Annual aggregate total		<u>\$ -</u>	<u>\$ 7,412,595</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

NOTES TO FINANCIAL STATEMENTS

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
36828QQJ8	\$ 5,796,000	\$ -	\$ (5,796,000)	\$ -	\$ -	March 31, 2021
05535DCF9	2,560,946	2,505,562	(55,385)	2,505,562	2,647,762	March 31, 2021
61750FAE0	582,728	558,079	(24,649)	558,079	500,569	March 31, 2021
18974BAA7	203,962	193,231	(10,731)	193,231	197,038	March 31, 2021
22540V3F7	124,724	11,082	(113,642)	11,082	3,496	March 31, 2021
92978EAA2	123,119	119,363	(3,756)	119,363	115,107	March 31, 2021
41161PWB5	1,183,481	1,153,338	(30,143)	1,153,338	1,017,022	March 31, 2021
12669GXW6	153,925	20,285	(133,640)	20,285	173,435	March 31, 2021
55274SAM3	38,192	33,418	(4,774)	33,418	84,650	March 31, 2021
86359DME4	480,180	480,133	(45)	480,133	498,095	March 31, 2021
040104TG6	751,483	596,747	(154,736)	596,747	700,223	June 30, 2021
05535DCF9	2,412,525	2,168,139	(244,386)	2,168,139	2,608,461	June 30, 2021
40431KAE0	2,389,667	2,348,253	(41,414)	2,348,253	2,745,165	June 30, 2021
61750FAE0	555,370	534,914	(20,456)	534,914	493,887	June 30, 2021
86359DXD4	394,726	364,961	(29,764)	364,961	369,964	June 30, 2021
05535DAN4	1,386,766	1,038,889	(347,877)	1,038,889	1,141,961	June 30, 2021
45660LYW3	959,375	942,757	(16,618)	942,757	927,049	June 30, 2021
79548KXQ6	121,590	96,975	(24,616)	96,975	97,070	June 30, 2021
92978EAA2	115,502	112,103	(3,399)	112,103	110,484	June 30, 2021
41161PWB5	1,112,829	1,079,360	(33,470)	1,079,360	969,681	June 30, 2021
576433H33	1,119,491	1,071,784	(47,707)	1,071,784	1,074,403	June 30, 2021
55274SAM3	33,318	31,698	(1,620)	31,698	85,553	June 30, 2021
00442FAB8	95,903	70,276	(25,627)	70,276	60,821	September 30, 2021
86359DXD4	359,657	339,762	(19,896)	339,762	337,895	September 30, 2021
05535DAN4	1,260,315	1,255,426	(4,889)	1,255,426	1,020,099	September 30, 2021
073879QF8	247,750	226,078	(21,672)	226,078	256,430	September 30, 2021
45660LYW3	907,047	906,646	(400)	906,646	879,977	September 30, 2021
92978EAA2	110,354	108,384	(1,970)	108,384	106,564	September 30, 2021
41161PWB5	1,049,397	1,023,087	(26,310)	1,023,087	908,082	September 30, 2021
55274SAM3	30,959	26,064	(4,895)	26,064	25,345	September 30, 2021
040104TF8	59,686	59,300	(386)	59,300	49,870	December 31, 2021
04012XAC9	130,314	122,160	(8,154)	122,160	107,581	December 31, 2021
1248MGAJ3	35,096	34,855	(241)	34,855	31,996	December 31, 2021
35729RAE6	4,028,108	3,999,289	(28,818)	3,999,289	3,995,059	December 31, 2021
617463AA2	6,685	5,767	(918)	5,767	5,247	December 31, 2021
61749BAB9	61,698	51,363	(10,335)	51,363	60,638	December 31, 2021
61750FAE0	342,930	319,304	(23,626)	319,304	307,808	December 31, 2021
61750MAB1	3,456	3,113	(343)	3,113	3,182	December 31, 2021
86359DXD4	335,476	308,315	(27,161)	308,315	309,361	December 31, 2021
92926SAB2	558	494	(64)	494	521	December 31, 2021
45660LYW3	677,413	675,162	(2,251)	675,162	630,760	December 31, 2021
79548KXQ6	51,835	37,120	(14,714)	37,120	65,254	December 31, 2021
92978EAA2	75,569	72,635	(2,934)	72,635	72,325	December 31, 2021
41161PWB5	822,378	776,768	(45,610)	776,768	706,114	December 31, 2021
55274SAM3	27,413	24,860	(2,552)	24,860	23,482	December 31, 2021
Totals	\$ 33,319,896	\$ 25,907,299	\$ (7,412,594)	\$ 25,907,999	\$ 26,525,486	

(4) As of December 31, 2021, the gross unrealized losses and fair values for investments in structured and loan-backed securities for which an OTTI has not been recognized in earnings follow:

a. The aggregate amount of unrealized losses:	
1. Less than 12 months	\$ (65,682,791)
2. 12 months or longer	\$ (133,684,823)
b. The aggregate related fair value of securities with unrealized losses:	
1. Less than 12 months	\$ 6,284,978,080
2. 12 months or longer	\$ 1,876,692,063

(5) No additional information.

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 December 31, 2021.

f. Repurchase agreements transactions accounted for as secured borrowing:

NOTES TO FINANCIAL STATEMENTS

(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.

(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	YES
b. Tri-Party (YES/NO)	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	198,412,500	180,392,157	-	-
5. > 1 Month to 3 Months	\$ 1,262,864,938	\$ 2,251,622,815	\$ 2,063,414,690	\$ 1,285,992,222
6. > 3 Months to 1 Year	\$ 3,009,913,800	\$ 2,119,257,882	\$ 1,814,430,016	\$ 2,241,455,128
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	-	-	-	-
5. > 1 Month to 3 Months	\$ 331,985,294	\$ 1,553,883,440	\$ 1,094,782,182	\$ 1,066,894,730
6. > 3 Months to 1 Year	\$ 2,738,467,600	\$ 1,266,342,186	\$ 1,814,430,016	\$ 1,735,205,128
7. > 1 Year	-	-	-	-

(4) The company did not have any repurchase agreements where securities sold and/or acquired resulted in default as of December 31, 2021.

(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	\$ 4,104,194,534	\$ 3,517,965,001	\$ 3,345,073,053	\$ 2,909,212,198

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
b. Ending Balance				
1. BACV	\$ 3,070,452,895	\$ 2,820,225,626	\$ 2,909,212,198	\$ 2,802,099,858
2. Nonadmitted - Subset of BACV	-	-	-	-
3. Fair Value	\$ 3,070,452,895	\$ 2,820,225,626	\$ 2,909,212,198	\$ 2,802,099,858

(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	\$ -	\$ 2,802,099,858	\$ -	\$ -
b. Bonds - FV	\$ -	\$ 2,802,099,858	\$ -	\$ -
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	\$ -	\$ 2,802,099,858	\$ -	\$ -
q. Total Assets - FV	\$ -	\$ 2,802,099,858	\$ -	\$ -

NOTES TO FINANCIAL STATEMENTS

ENDING BALANCE		5	6	7	8
		NAIC 4	NAIC 5	NAIC 6	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

(7) Collateral Received - Secured Borrowing

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. Cash	\$ 81,843,000	\$ 72,242,000	\$ 32,901,000	\$ 20,675,000
2. Securities (FV)	\$ 3,977,468,678	\$ 3,027,663,434	\$ 2,921,938,566	\$ 2,909,835,982
b. Ending Balance				
1. Cash	\$ 81,390,000	\$ 19,132,000	\$ 18,947,000	\$ 6,554,000
2. Securities (FV)	\$ 3,071,634,071	\$ 2,820,783,213	\$ 2,909,750,078	\$ 2,802,811,705

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

ENDING BALANCE		1	2	3	4
		NONE	NAIC 1	NAIC 2	NAIC 3
a.	Cash	\$ 6,554,000	\$ -	\$ -	\$ -
b.	Bonds - FV	-	2,802,811,705	-	-
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)	\$ 6,554,000	\$ 2,802,811,705	\$ -	\$ -

ENDING BALANCE		5	6	7	8
		NAIC 4	NAIC 5	NAIC 6	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	\$ 1,066,814,761
d.	> 90 Days	\$ 1,773,590,266

(10) The company did not have any repurchase agreements where cash collateral received was reinvested as of June 30, 2020.

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

	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
a. Maximum Amount				
1. Cash (Collateral – All)	\$ 81,843,000	\$ 72,242,000	\$ 32,901,000	\$ 20,675,000
2. Securities Collateral (FV)	\$ 3,977,468,678	\$ 3,027,663,434	\$ 2,921,938,566	\$ 2,909,835,982
b. Ending Balance				
1. Cash (Collateral – All)	\$ 81,390,000	\$ 19,132,000	\$ 18,947,000	\$ 6,554,000
2. Securities Collateral (FV)	\$ 3,071,634,071	\$ 2,820,783,213	\$ 2,909,750,078	\$ 2,802,811,705

- 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 December 31, 2021.
- 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 December 31, 2021.
- i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase agreements

NOTES TO FINANCIAL STATEMENTS

transactions accounted for as a sale as of December 31, 2021.

j. Real estate:

(1) There were no impairments on real estate for the years ended December 31, 2021 and 2020. Fair value is generally estimated using the present value of expected future cash flows discounted at a rate commensurate with the underlying risks. The Company also obtains external appraisals for a rotating selection of properties annually. If an external appraisal is not obtained, an internal appraisal is performed.

(2) Properties are acquired and managed for net income growth and increasing value. Upon management's approval for the sale of a property it is classified as held for sale.

a. Refer to Note 5f. "Real estate" (2)b. for information on the Company's real estate investments.

b. Gains or losses recognized on the sale of real estate are presented in the Summary of Operations, line 34. Net realized capital gains (losses).

In 2021, one apartment and one office property were transferred to held for sale and sold in 2021, with proceeds of \$75,387,206 and a net gain of \$29,787,026. As of December 31, 2021, the Company did not hold any single family residences classified as held for sale.

In 2020, one retail property was transferred to held for sale and sold in 2020, with proceeds of \$952,949 and a net gain of \$952,949. As of December 31, 2021, the Company did not hold any single family residences classified as held for sale.

(3) The Company did not experience changes to a plan of sale in 2021 or 2020.

(4) The Company did not engage in retail land sales in 2021 or 2020.

(5) The Company did not hold real estate investments with participating mortgage loan features in 2021 or 2020.

k. Low income housing tax credit properties:

(1) LIHTC investments currently have unexpired tax credits which range from one to thirteen years and have an initial 15-year holding period requirement.

(2) There are no LIHTC investments subject to regulatory review for the years ended December 31, 2021 or 2020.

(3) Aggregate LIHTC investments did not exceed 10% of total admitted assets for the years ended December 31, 2021 or 2020.

(4) LIHTC investments had a carrying value of \$160,233,100 as of December 31, 2021 and \$199,447,122 as of December 31, 2020.

(5) The Company recognized tax benefits from LIHTC investments of \$47,375,752 in 2021 and \$5,762 in 2020.

(6) For determining impairments in partnerships that generate LIHTC, the Company uses the present value of all future benefits, the majority of which are tax credits, discounted at a risk-free rate ranging from 0.1% for future benefits of two years to 0.9% for future benefits of ten or more years, and compares the result to current carrying value. OTTI for LIHTC investments for the years ended December 31, 2021 and 2020 were as follows:

	Years Ended	
	December 31,	
	2021	2020
30 Federal Co-Investment Fund I LLC	\$ 63,212	\$ 180,075
Boston Financial MassMutual Tax Credits Fund II LP	539,440	-
MMA Financial Inst. Tax Credits XXV LP	386,311	-
NHT XX Tax Credit Fund LP	1,565,962	3,572,731
Total	\$ 2,554,925	\$ 3,752,806

(7) There were no write-downs or reclassifications made during the years ended December 31, 2021 and 2020 due to forfeiture, ineligibility of tax credits or similar issues.

NOTES TO FINANCIAL STATEMENTS

I. Restricted assets:

(1) Restricted assets (including pledged):

Restricted Asset Category	Gross (Admitted & Nonadmitted) Restricted						
	Current Year					6 Total From Prior Year	7 Increase/ (Decrease) (5 minus 6)
	1 Total General Account (G/A)	2 G/A Supporting S/A Activity (a)	3 Total Separate Account (S/A) Restricted Assets	4 S/A Assets Supporting G/A Activity (b)	5 Total (1 plus 3)		
a. Subject to contractual obligation for which liability is not shown	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
b. Collateral held under security lending agreements	-	-	-	-	-	-	-
c. Subject to repurchase agreements	2,802,811,705	-	-	-	2,802,811,705	4,007,757,404	(1,204,945,699)
d. Subject to reverse repurchase agreements	-	-	-	-	-	-	-
e. Subject to dollar repurchase agreements	-	-	-	-	-	-	-
f. Subject to dollar reverse repurchase agreements	-	-	-	-	-	-	-
g. Placed under option contracts	-	-	-	-	-	-	-
h. Letter stock or securities restricted as to sale - excluding FHLB capital stock	471,703,791	-	-	-	471,703,791	469,116,320	2,587,471
i. FHLB capital stock	98,620,000	-	-	-	98,620,000	77,680,000	20,940,000
j. On deposit with states	9,605,628	-	-	-	9,605,628	9,508,600	97,028
k. On deposit with other regulatory bodies	-	-	-	-	-	-	-
l. Pledged collateral to FHLB (including assets backing funding agreements)	2,802,811,705	-	-	-	2,802,811,705	4,007,757,404	(1,204,945,699)
m. Pledged as collateral not captured in other categories	3,388,543,784	-	-	-	3,388,543,784	3,677,637,983	(289,094,199)
n. Other restricted assets	-	-	-	-	-	-	-
o. Total Restricted Assets	\$ 9,574,096,613	\$ -	\$ -	\$ -	\$ 9,574,096,613	\$ 12,249,457,711	\$ (2,675,361,098)

(a) Subset of column 1

(b) Subset of column 3

NOTES TO FINANCIAL STATEMENTS

Restricted Asset Category	Current Year			
	8 Total Nonadmitted Restricted	9 Total Admitted Restricted (5 minus 8)	Percentage	
			10 Gross (Admitted & Nonadmitted) Restricted to Total Assets (c)	11 Admitted Restricted to Total Admitted Assets (d)
a. Subject to contractual obligation for which liability is not shown	\$ -	\$ -	-%	-%
b. Collateral held under security lending Agreements	-	-	-	-
c. Subject to repurchase Agreements	-	2,802,811,705	0.928	0.933
d. Subject to reverse repurchase agreements	-	-	-	-
e. Subject to dollar repurchase agreements	-	-	-	-
f. Subject to dollar reverse repurchase agreements	-	-	-	-
g. Placed under option Contracts	-	-	-	-
h. Letter stock or securities restricted as to sale - excluding FHLB capital Stock	-	471,703,791	0.156	0.157
i. FHLB capital stock	-	98,620,000	0.030	0.033
j. On deposit with states	-	9,605,628	0.003	0.003
k. On deposit with other regulatory bodies	-	-	-	-
l. Pledged collateral to FHLB (including assets backing funding agreements)	-	2,802,811,705	0.928	0.933
m. Pledged as collateral not captured in other categories	-	3,388,543,784	1.122	1.128
n. Other restricted assets	-	-	-	-
o. Total Restricted Assets	\$ -	\$ 9,574,096,613	3.171%	3.186%

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

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

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

Description of Assets	Gross (Admitted & Nonadmitted) Restricted							8 Total Current Year Admitted Restricted	Percentage	
	Current Year								9 Gross (Admitted & Nonadmitted) Restricted to Total Assets	10 Admitted Restricted Total Total Admitted Assets
	1	2	3	4	5	6	7			
	Total General Account (G/A)	G/A Supporting S/A Activity (a)	Total Separate Account (S/A) Restricted Assets	S/A Assets Supporting G/A Activity (b)	Total (1 plus 3)	Total from Prior Year	Increase/ (Decrease) (5 minus 6)			
Derivatives	\$ 3,148,395,721	\$ -	\$ -	\$ -	\$ 3,148,395,721	\$ 3,281,974,661	\$ (133,578,940)	\$ 3,148,395,721	1.043%	1.048%
Futures	245,569,779	-	-	-	245,569,779	358,868,385	(113,298,606)	245,569,779	0.081%	0.082%
MBS Forwards	474,000	-	-	-	474,000	220,000	254,000	474,000	0.000%	0.000%
Repurchase Margin	(5,895,716)	-	-	-	(5,895,716)	36,574,936	(30,679,220)	(5,895,716)	-0.002%	-0.002%
Total (c)	\$ 3,388,543,784	\$ -	\$ -	\$ -	\$ 3,388,543,784	\$ 3,677,637,982	\$ (277,302,766)	\$ 3,388,543,784	1.122%	1.128%

(a) Subset of column 1

(b) Subset of column 3

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

NOTES TO FINANCIAL STATEMENTS

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

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

(a) Subset of column 1

(b) Subset of column 3

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

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

Collateral Assets	1 Book/Adjusted Carrying Value (BACV)	2 Fair Value	3 % of BACV Total Assets (Admitted and Nonadmitted)*	4 % of BACV to Total Admitted Assets **
General Account:				
	6,156,040,354			
a. Cash, Cash Equivalents and Short-Term Investments	\$ 4	\$ 6,156,040,354	2.563 %	2.578 %
b. Schedule D, Part 1	-	-	- %	- %
c. Schedule D, Part 2, Section 1	-	-	- %	- %
d. Schedule D, Part 2, Section 2	-	-	- %	- %
e. Schedule B	-	-	- %	- %
f. Schedule A	-	-	- %	- %
g. Schedule BA, Part 1	-	-	- %	- %
h. Schedule DL, Part 1	-	-	- %	- %
i. Other	-	-	- %	- %
j. Total Collateral Assets (a+b+c+d+e+f+g+h+i)	\$ 4	\$ 6,156,040,354	2.563 %	2.578 %
Separate Account:				
k. Cash, Cash Equivalents and Short-Term Investments	\$ -	\$ -	- %	- %
l. Schedule D, Part 1	-	-	- %	- %
m. Schedule D, Part 2, Section 1	-	-	- %	- %
n. Schedule D, Part 2, Section 2	-	-	- %	- %
o. Schedule B	-	-	- %	- %
p. Schedule A	-	-	- %	- %
q. Schedule BA, Part 1	-	-	- %	- %
r. Schedule DL, Part 1	-	-	- %	- %
s. Other	-	-	- %	- %
t. Total Collateral Assets (k+l+m+n+o+p+q+r+s)	\$ -	\$ -	- %	- %

* j=Column 1 divided by Asset Page, Line 26 (Column 1)
t=Column 1 divided by Asset Page, Line 27 (Column 1)

** j=Column 1 divided by Asset Page, Line 26 (Column 3)
t=Column 1 divided by Asset Page, Line 27 (Column 3)

	1 Amount	2 % of Liability to Total Liabilities*
u. Recognized Obligation to Return Collateral Asset (General Account)	\$ -	- %
v. Recognized Obligation to Return Collateral Asset (Separate Account)	\$ -	- %

* u=Column 1 divided by Liability Page, Line 26 (Column 1)
v=Column 1 divided by Liability Page, Line 27 (Column 1)

- m. Working capital finance investments: The Company did not invest in working capital finance investments as of December 31, 2021.
- 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 December 31, 2021.

NOTES TO FINANCIAL STATEMENTS

o. 5GI Securities:

Investment	Number of 5* Securities		Aggregate BACV		Aggregate Fair Value	
	Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year
(1) Bonds - AC	153	114	\$1,298,544,081	\$1,066,119,748	\$1,319,091,783	\$1,087,886,203
(2) LB&SS - AC	2	3	10,400,000	11,206,673	10,400,000	10,203,119
(3) Preferred Stock - AC	3	5	7,014,496	12,976,008	7,066,789	23,345,940
(4) Preferred Stock - FV	1	-	6,276,526	-	6,276,526	-
(5) Total (1+2+3+4)	159	122	\$1,322,235,103	\$1,090,302,429	\$1,342,835,098	\$1,121,435,262

AC - Amortized Cost FV - Fair Value

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

q. Prepayment penalty and acceleration fees:

	Years Ended December 31, 2021	
	General Account	Separate Account
1. Number of CUSIPS	84	52
2. Aggregate amount of investment income	\$ 69,039,274	\$ 8,069,490

r. Reporting entity's share of cash pool by asset type:

Asset Type	Percent Share
(1) Cash	23 %
(2) Cash equivalents	30 %
(3) Short-term investments	47 %
(4) Total	100 %

Note 6 - Joint Ventures, Partnerships and Limited Liability Companies

a. The Company does not have any individual investments in joint ventures, partnerships or LLCs which exceed 10% of admitted assets for the years ended December 31, 2021 and December 31, 2020.

b. The accumulated unrealized losses are realized when they are not expected to be recovered. The Company recognized \$483,335,160 in 2021 and \$88,560,370 in 2020 in impairments on its investments in joint ventures, partnerships and LLCs.

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

Note 7 - Investment Income

a. Accrued investment income consists primarily of interest and dividends. Interest is recognized on an accrual basis and dividends are recorded as earned on the ex-dividend date.

b. The total amount of due and accrued investment income excluded from surplus was \$4,230,982 for the year ended December 31, 2021 and \$2,952,950 for the year ended December 31, 2020.

Note 8 - Derivative Instruments

a. Derivatives accounted for under SSAP no 86

The Company's principal derivative exposures to market risk are interest rate risk, which includes inflation and credit risk. Interest rate risk pertains to the change in fair value of the derivative instruments as a result of changes in market interest rates. The Company is exposed to credit-related losses in the event of nonperformance by counterparties to derivative financial instruments. The Company regularly monitors counterparty credit ratings, derivative positions, valuations and the value of collateral posted to ensure counterparties are credit-worthy and the concentration of exposure is minimized, and monitors its derivative credit exposure as part of its overall risk management program.

The Company enters derivative transactions through bilateral derivative agreements with counterparties, or through over the counter cleared derivatives with a counterparty and the use of a clearinghouse. To minimize credit risk for bilateral transactions, the Company and its counterparties generally enter into master netting agreements based on agreed upon requirements that outline the framework for how collateral is to be posted in the amount owed under each transaction, subject to certain minimums. For over the counter cleared derivative transactions between the Company and a counterparty, the parties enter into a series of master netting and other agreements that govern, among other things, clearing and collateral requirements. These transactions are cleared through a clearinghouse and each derivative counterparty is only exposed to the default risk of the clearinghouse. Certain interest rate swaps and credit default swaps are considered cleared transactions. These cleared transactions require initial and daily variation margin collateral postings. These agreements allow for contracts in a positive position, in which amounts are due to the Company, to be offset by contracts in a negative position. This right of offset, combined with collateral obtained from counterparties, reduces the Company's credit exposure.

b. The Company uses derivative financial instruments in the normal course of business to manage risks, primarily to reduce currency, interest rate and duration imbalances determined in asset/liability analyses. The Company also uses a combination of derivatives and fixed income investments to create synthetic investments. These synthetic investments are created when they are economically more attractive than the actual instrument or when similar instruments are unavailable. Synthetic investments are created either to hedge and reduce the Company's credit and foreign currency exposure or to create an investment in a particular asset. The Company held synthetic investments with a notional amount of \$22,423,158,425 as of December 31, 2021 and \$17,928,959,993 as of December 31, 2020. These notional amounts included replicated asset transaction values of, \$21,873,158,425 as of December 31, 2021 and \$15,988,959,993 as of December 31, 2020, as defined under statutory accounting practices as the result of pairing of a long derivative contract with cash instruments.

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

NOTES TO FINANCIAL STATEMENTS

Interest rate swaps are primarily used to more closely match the cash flows of assets and liabilities. Interest rate swaps are also used to mitigate changes in the value of assets anticipated to be purchased and other anticipated transactions and commitments. A net realized loss on closed contracts of \$450,638,581 and a net unrealized gain on the mark-to-market of open contracts of \$457,769,266 was recorded for the year ended December 31, 2021. A net realized gain on closed contracts of \$465,112,769 and a net unrealized gain on the mark-to-market of open contracts of \$2,502,886,675 was recorded for the year ended December 31, 2020.

The Company uses currency swaps for the purpose of managing currency exchange risks in its assets and liabilities.

The Company does not sell credit default swaps as a participant in the credit insurance market. The Company does, however, use credit default swaps as part of its investment management process. The Company buys credit default swaps as an efficient means to reduce credit exposure to particular issuers or sectors in the Company's investment portfolio. The Company sells credit default swaps in order to create synthetic investment positions that enhance the return on its investment portfolio by providing comparable exposure to fixed income securities that might not be available in the primary market. A net realized gain on closed contracts of \$1,734,340 and a net unrealized loss on mark-to-market of open contracts of \$0 was recorded for the year ended December 31, 2021. A net realized gain on closed contracts of \$7,873,749 and a net unrealized loss on mark-to-market of open contracts of \$247,819 was recorded for the year ended December 31, 2020.

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

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

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

Net collateral pledged by the counterparties was \$5,369,160,411 as of December 31, 2021 and \$4,848,834,935 as of December 31, 2020. In the event of default the full market value exposure at risk in a net gain position, net of offsets and collateral, was \$230,272,756 as of December 31, 2021 and \$194,364,432 as of December 31, 2020. The statutory net amount at risk, defined as net collateral pledged and statement values excluding accrued interest, was \$579,042,623 as of December 31, 2021 and \$296,175,160 as of December 31, 2020.

The Company had the right to rehypothecate or repledge securities totaling \$716,808,466 of the \$5,369,160,411 as of December 31, 2021 and \$829,367,701 of the \$4,848,834,935 as of December 31, 2020 of net collateral pledged by counterparties. There were no securities rehypothecated to other counterparties as of December 31, 2021 or December 31, 2020.

- c. Changes in the fair value of these contracts other than interest rate swaps associated with replicated assets are recorded as unrealized gains or losses in surplus. Gains and losses realized on the termination, closing, or assignment of contracts are recorded as realized capital gains or losses. Amounts receivable and payable are accrued.
- d. No unrealized gains or losses recognized on derivatives were excluded from the assessment of effectiveness for the years ended December 31, 2021 or 2020, since the Company has decided not to apply hedge accounting. The Company uses portfolio hedging as a risk mitigation factor. The Company assesses the derivatives' effectiveness to hedge the sensitivity of the net asset and liability portfolio to interest and volatility movements in the context of the current market environment.
- e. The Company uses portfolio hedging as a risk mitigation factor, which does not qualify for hedge accounting.
- f. The Company does not account for derivatives as cash flow hedges of a forecasted transaction.

NOTES TO FINANCIAL STATEMENTS

Note 9 – Income Taxes

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

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

	December 31, 2021		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 3,136,151,700	\$ 372,037,656	\$ 3,508,189,356
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	3,136,151,700	372,037,656	3,508,189,356
(d) DTAs nonadmitted	-	-	-
(e) Subtotal net admitted DTA	3,136,151,700	372,037,656	3,508,189,356
(f) Total gross DTLs	2,090,228,008	708,269,222	2,798,497,230
(g) Net admitted DTA(L)	\$ 1,045,923,692	\$ (336,231,566)	\$ 709,692,126

	December 31, 2020		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 2,835,775,051	\$ 258,153,599	\$ 3,093,928,650
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	2,835,775,051	258,153,599	3,093,928,650
(d) DTAs nonadmitted	-	-	-
(e) Subtotal net admitted DTA	2,835,775,051	258,153,599	3,093,928,650
(f) Total gross DTLs	2,114,226,906	471,112,189	2,585,339,095
(g) Net admitted DTA(L)	\$ 721,548,145	\$ (212,958,590)	\$ 508,589,555

	Change		
	Ordinary	Capital	Total
(a) Gross DTAs	\$ 300,376,649	\$ 113,884,057	\$ 414,260,706
(b) Statutory valuation allowance adjustment	-	-	-
(c) Adjusted gross DTAs	300,376,649	113,884,057	414,260,706
(d) DTAs nonadmitted	-	-	-
(e) Subtotal net admitted DTA	300,376,649	113,884,057	414,260,706
(f) Total gross DTLs	(23,998,898)	237,157,033	213,158,135
(g) Net admitted DTA(L)	\$ 324,375,547	\$ (123,272,976)	\$ 201,102,571

NOTES TO FINANCIAL STATEMENTS

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

	December 31, 2021		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ -	\$ 89,080,338	\$ 89,080,338
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	1,129,316,133	-	1,129,316,133
1. Adjusted gross DTAs expected to be realized following the balance sheet date	1,129,316,133	-	1,129,316,133
2. Adjusted gross DTAs allowed per limitation threshold	4,901,977,230	-	4,901,977,230
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	2,006,835,567	282,957,318	2,289,792,885
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 3,136,151,700</u>	<u>\$ 372,037,656</u>	<u>\$ 3,508,189,356</u>

	December 31, 2020		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ -	\$ 53,821,018	\$ 53,821,018
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	1,055,707,013	-	1,055,707,013
1. Adjusted gross DTAs expected to be realized following the balance sheet date	1,055,707,013	-	1,055,707,013
2. Adjusted gross DTAs allowed per limitation threshold	3,335,650,397	-	3,335,650,397
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	1,780,068,038	204,332,581	1,984,400,618
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 2,835,775,051</u>	<u>\$ 258,153,599</u>	<u>\$ 3,093,928,650</u>

	Change		
	Ordinary	Capital	Total
(a) Federal income taxes paid in prior years recoverable through loss carrybacks	\$ -	\$ 35,259,320	\$ 35,259,320
(b) Adjusted gross DTAs expected to be realized (excluding the amount of DTAs from 2(a) above) after application of the threshold limitation (the lesser of 2(b)1 and 2(b)2 below)	73,609,120	-	73,609,120
1. Adjusted gross DTAs expected to be realized following the balance sheet date	73,609,120	-	73,609,120
2. Adjusted gross DTAs allowed per limitation threshold	1,566,326,833	-	1,566,326,833
(c) Adjusted gross DTAs (excluding the amount of DTAs from 2(a) and 2(b) above) offset by gross DTLs	226,767,529	78,624,737	305,392,266
(d) DTAs admitted as the result of application of SSAP no. 101			
Total (2(a) + 2(b) + 2(c))	<u>\$ 300,376,649</u>	<u>\$ 113,884,057</u>	<u>\$ 414,260,706</u>

NOTES TO FINANCIAL STATEMENTS

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

	December 31,	
	2021	2020
(a) Ratio percentage used to determine recovery period and threshold limitation amount	850%	928%
(b) Amount of adjusted capital and surplus used to determine recovery period and threshold limitation in 2(b)2 above.	\$ 32,679,848,200	\$ 22,237,669,316

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

	December 31, 2021	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 3,136,151,700	\$ 372,037,656
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(e)	\$ 1,045,923,692	\$ (336,231,566)
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	46%	0%

	December 31, 2020	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 2,835,775,051	\$ 258,153,599
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(e)	\$ 721,548,145	\$ (212,958,590)
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	30%	0%

	Change	
	Ordinary	Capital
(a) Determination of adjusted gross DTAs and net admitted DTAs, by tax character as a percentage.		
1. Adjusted Gross DTAs amount from Note 9A1(c)	\$ 300,376,649	\$ 113,884,057
2. Percentage of adjusted gross DTAs by tax character attributable to the impact of tax planning strategies	-%	-%
3. Net admitted DTAs amount from Note 9A1(g)	\$ 324,375,547	\$ (123,272,976)
4. Percentage of net admitted DTAs by tax character attributable to the impact of tax planning strategies	16%	0%
(b) Does the Company's tax planning strategies include the use of reinsurance?	Yes <u> </u>	No <u> X </u>

- b. The Company does not have any deferred tax liabilities not recognized.

NOTES TO FINANCIAL STATEMENTS

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

	Years Ended December 31,		
	2021	2020	Change
(a) Federal	\$ 68,665,645	\$ 133,830,002	\$ (65,164,357)
(b) Foreign	2,963,626	962,228	2,001,398
(c) Subtotal	71,629,271	134,792,230	(63,162,959)
(d) Federal income tax on net capital gains	43,418,702	359,759,858	(316,341,156)
(e) Utilization of capital loss carry-forwards	-	-	-
(f) Other	-	-	-
(g) Federal and foreign income taxes incurred	<u>\$ 115,047,973</u>	<u>\$ 494,552,088</u>	<u>\$ (379,504,115)</u>

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

	December 31,		
	2021	2020	Change
2. Deferred Tax Assets:			
(a) Ordinary			
(1) Discounting of unpaid losses	\$ -	\$ -	\$ -
(2) Unearned premium reserve	-	-	-
(3) Policyholder reserves	1,363,265,232	1,190,563,145	172,702,087
(4) Investments	332,550,915	200,714,658	131,836,257
(5) Deferred acquisition costs	758,684,406	649,039,965	109,644,441
(6) Policyholder dividends accrual	208,062,183	192,826,963	15,235,220
(7) Fixed assets	-	-	-
(8) Compensation and benefits accrual	-	-	-
(9) Pension accrual	71,105,449	220,113,346	(149,007,897)
(10) Receivables - nonadmitted	-	-	-
(11) Net operating loss carry-forward	-	-	-
(12) Tax credit carry-forward	-	-	-
(13) Other	402,483,515	382,516,974	19,966,541
(14) Subtotal	<u>3,136,151,700</u>	<u>2,835,775,051</u>	<u>300,376,649</u>
(b) Statutory valuation allowance adjustment	-	-	-
(c) Nonadmitted	-	-	-
(d) Admitted ordinary DTAs (2a14 - 2b - 2c)	<u>3,136,151,700</u>	<u>2,835,775,051</u>	<u>300,376,649</u>
(e) Capital			
(1) Investments	372,037,656	258,153,599	113,884,057
(2) Net capital loss carry-forward	-	-	-
(3) Real estate	-	-	-
(4) Other	-	-	-
(5) Subtotal	<u>372,037,656</u>	<u>258,153,599</u>	<u>113,884,057</u>
(f) Statutory valuation allowance adjustment	-	-	-
(g) Nonadmitted	-	-	-
(h) Admitted capital DTAs (2e5 - 2f - 2g)	<u>372,037,656</u>	<u>258,153,599</u>	<u>113,884,057</u>
(i) Admitted DTAs (2d + 2h)	<u>3,508,189,356</u>	<u>3,093,928,650</u>	<u>414,260,706</u>

NOTES TO FINANCIAL STATEMENTS

3. Deferred Tax Liabilities:

(a) Ordinary

(1) Investments	1,129,427,147	1,063,682,899	65,744,248
(2) Fixed Assets	39,486,751	34,421,636	5,065,115
(3) Deferred and uncollected premium	280,996,796	258,164,552	22,832,244
(4) Policyholder reserves	283,862,643	356,483,082	(72,620,439)
(5) Other	356,454,671	401,474,737	(45,020,066)
(6) Subtotal	<u>2,090,228,008</u>	<u>2,114,226,906</u>	<u>(23,998,898)</u>

(b) Capital

(1) Investments	708,269,222	471,112,189	237,157,033
(2) Real estate	-	-	-
(3) Other	-	-	-
(4) Subtotal	<u>708,269,222</u>	<u>471,112,189</u>	<u>237,157,033</u>

(c) Total DTLs (3a6 + 3b4)

<u>2,798,497,230</u>	<u>2,585,339,095</u>	<u>213,158,135</u>
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4. Net DTA(L) (2i - 3c)

<u>\$ 709,692,126</u>	<u>\$ 508,589,555</u>	<u>\$ 201,102,571</u>
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The change in net deferred income taxes is comprised of the following:

	Years Ended December 31,	
	2021	2020
(1) Net DTA(L)	\$ 201,102,571	\$ (599,603,019)
Less: Items not recorded in the change in net deferred income taxes:	-	-
(2) Tax-effect of unrealized gains/(losses)	<u>342,636,538</u>	<u>576,910,032</u>
(3) Change in net deferred income taxes	<u>\$ 543,739,109</u>	<u>\$ (22,692,987)</u>

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

	Years Ended December 31,	
	2021	2020
(1) Provision computed at statutory rate	\$ (91,502,646)	\$ 966,811,429
(2) Nonadmitted assets	(4,121,064)	10,502,633
(3) Foreign governmental income taxes	2,906,283	962,228
(4) Expense items	(37,906,449)	2,789,494
(5) Investment items	(135,293,964)	(411,302,755)
(6) Tax credits	(94,697,255)	(50,060,498)
(7) Change in reserve valuation basis	-	(1,498,537)
(8) Other	<u>(69,077,904)</u>	<u>(958,919)</u>
Total statutory income tax expense (benefit)	<u>\$ (428,691,135)</u>	<u>\$ 517,245,075</u>
(9) Federal and foreign income tax benefit	\$ 115,047,972	\$ 494,552,088
(10) Change in net deferred income taxes	<u>(543,739,107)</u>	<u>22,692,987</u>
Total statutory income tax expense (benefit)	<u>\$ (428,691,135)</u>	<u>\$ 517,245,075</u>

- e. (1) As of December 31, 2021, the Company had no net operating or capital loss carryforwards to include in deferred income taxes. The Company has no tax credit carryforwards included in deferred taxes.
- (2) The Company made payments of federal income taxes in the amount of \$848,508,784 in 2021 and received refunds in the amount of \$141,757,072 in 2020.
- (3) The total income taxes incurred in the current and prior years that will be available for recoupment in the event of future net capital losses totaled \$60,879,268 to 2021, \$430,304,571 related to 2020.
- (4) As of December 31, 2021 and 2020, the Company did not recognize any protective deposits as admitted assets.
- f. (1) The Company and its eligible U.S. subsidiaries are included in a consolidated U.S. federal income tax return. The Company and its subsidiaries and affiliates also file income tax returns in various states and foreign jurisdictions.
- (2) The Company and its eligible subsidiaries and certain affiliates (the Parties) have executed and are subject to a written tax allocation agreement (the Agreement). The Agreement sets forth the manner in which the total combined federal income tax is allocated among the Parties. The Agreement provides the Company with the enforceable right to recoup federal income taxes paid in prior years in the event of future net losses, which it may incur. Further, the Agreement provides the Company with the enforceable right to utilize its net losses carried forward as an offset to future net income subject to federal income taxes.

NOTES TO FINANCIAL STATEMENTS

- g. (1) Companies are generally required to disclose unrecognized tax benefits, which are the tax effect of positions taken on their tax returns that may be challenged by the various taxing authorities, in order to provide users of financial statements more information regarding potential liabilities. The Company recognizes tax benefits and related reserves in accordance with existing SAP for liabilities, contingencies and impairments of assets.
- (2) In response to the COVID-19 pandemic, the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law on March 27, 2020 and the Consolidated Appropriations Act (CAA), 2021 was signed into law on December 27, 2020. The CARES Act, among other things, permits net operating loss (NOL) carryovers and carrybacks to offset 100% of taxable income for taxable years beginning before 2021. In addition, the CARES Act allows NOLs incurred in 2018, 2019, and 2020 to be carried back to each of the five preceding taxable years to generate a refund of previously paid income taxes. The CAA extends and expands certain tax provisions of the CARES Act. The CARES Act as well as the CAA did not have a material effect on the consolidated financial statements.
- (3) The Internal Revenue Service (IRS) has completed its examination for the years 2013 and prior. The 2014-2016 tax years are currently at IRS Appeals. The IRS commenced its examination of years 2017-2018 in October 2020. The adjustments resulting from these examinations are not expected to materially affect the position or liquidity of the Company.
- h. (1) The Company elected to fully remit the repatriation transition tax.
- i. (1) The Company does not have an alternative minimum tax credit.

Note 10 – Information Concerning Parent, Subsidiaries and Affiliates

- a-b. MMHLLC paid \$1,200,000,000 in dividends to MassMutual for the year ended December 31, 2021, \$1,000,000,000 of which were declared in 2020. MMHLLC paid \$266,000,000 in dividends for the year ended year ended December 31, 2020, \$200,000,000 of which were declared in 2019.

MMHLLC declared an additional \$344,000,000 in dividends to MassMutual for the year ended December 31, 2021.

MassMutual contributed capital of \$389,000,000 to MMHLLC for the year ended December 31, 2021.

MassMutual contributed capital of \$1,947,896,048 to MMHLLC for the year ended December 31, 2020, of which \$1,884,294,587 was used for the Rothesay additional investment, and \$290,272,507 for the year ended December 31, 2019. On December 1, 2020, MassMutual purchased, through an indirect, wholly owned subsidiary, an additional investment in Rothesay Holdco UK Limited (RHUK) for \$1,874,669,367. RHUK wholly owns Rothesay Life. The purchase increased MassMutual's indirect ownership in Rothesay Life from 24.9% to 48.9%.

In 2021, C.M. Life paid \$173,000,000 in dividends to MassMutual and \$173,000,000 in 2020.

On May 28, 2021, the Company, through a wholly owned subsidiary, Glidepath, acquired Great American Life Insurance Company and other subsidiaries and affiliated entities (GALIC) for \$3,569,700,000 in cash. GALIC primarily offers traditional fixed and fixed indexed annuity products.

In December 2020, MassMutual contributed its ownership in MassMutual Asset Finance LLC (MMAF) and MML Management LLC, wholly owned subsidiaries with a combined carrying value of \$1,602,356,236, to MM Investment Holding (MMIH), a wholly owned subsidiary, in an affiliated transaction and therefore no gain or loss was recognized on the transaction. There was no impact to surplus.

- c. The Company did not have any material related party transactions that were not reported on Schedule Y.
- d. The Company reported amounts due from subsidiaries and affiliates of \$127,639,697 as of December 31, 2021 and \$54,499,315 as of December 31, 2020. The Company reported amounts due to subsidiaries and affiliates of \$64,824,977 as of December 31, 2021 and less than \$7,539,161 as of December 31, 2020. Terms generally require settlement of these amounts within 30 to 90 days.
- e. The Company has management and service contracts and cost-sharing arrangements with various subsidiaries and affiliates where the Company, for a fee, will furnish a subsidiary or affiliate, as required, operating facilities, human resources, computer software development and managerial services. Fees from C.M. Life accounted for \$82,033,686 in 2021 and \$96,143,651 in 2020. Fees from MML Bay State accounted for \$9,276,637 in 2021 and \$9,975,903 in 2020.

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

The Company has agreements with its subsidiaries, MM Copper Hill LLC, Insurance Road LLC (IRLLC), Barings, MML Investment Advisers LLC and MSI Financial Services, Inc., which provide investment advisory services to the Company.

In December 2020, MassMutual Trust Co. declared and paid \$5,000,000 in dividends to the Company.

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

	Years Ended December 31,	
	2021	2020
Fee income:		
Management and service contracts and cost-sharing arrangements	\$ 363,818,319	\$ 335,197,092
Investment advisory income	23,020,498	22,435,941
Recordkeeping and other services	19,997,529	19,665,232
Fee expenses:		
Investment advisory services	240,379,664	268,327,438
Royalty and licensing fees	58,200,000	58,200,000

The Company's indirectly wholly owned subsidiary, Barings, invest a portion of their nonqualified compensation plan in guaranteed interest contracts with the Company. For the year ended December 31, 2021, the Company credited interest on deposits of less than \$1,000,000 to the Barings contract. For the year ended December 31, 2020, the Company credited interest on deposits of \$2,413,945 to the Barings contract.

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

NOTES TO FINANCIAL STATEMENTS

related party commitments and information on the guarantees.

- f. The Company has reinsurance agreements with its subsidiary, C.M. Life, and its indirect subsidiary, MML Bay State, including stop-loss, modified coinsurance (Modco) and yearly renewable term agreements on life insurance and annuity products. The Company also has coinsurance agreements with C.M. Life where the Company assumes substantially all of the premium on certain universal life policies.

The net amounts due to C.M. Life and MML Bay State were \$107,880,630 as of December 31, 2021 and \$65,649,457 as of December 31, 2020. These outstanding balances are due and payable with terms ranging from monthly to annually, depending on the agreement in effect.

The following summarizes the reinsurance transactions for these agreements:

	Years Ended December 31,	
	2021	2020
Premium assumed	\$ 48,529,387	\$ 46,330,166
Modco adjustments, included in fees and other income	10,887,885	11,205,308
Expense allowances on reinsurance assumed, included in commissions	(13,297,712)	(14,346,933)
Policyholders' benefits	(143,926,688)	(89,208,337)
Experience refunds (paid) received	74,813	483,064

The Company currently has three longevity swap agreements with Rothesay Life Plc on certain inforce annuity products. Under these agreements, the Company is the reinsurer and Rothesay Life Plc is the cedent.

The following summarizes the related party reinsurance transactions between the Company and Rothesay Life Plc:

	Years Ended December 31,	
	2021	2020
Premium assumed	\$ (165,082,388)	\$ (91,459,490)
Policyholders' Benefits	157,161,136	87,286,116

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

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

- h. The Company does not have an upstream intermediate entity or ultimate parent. Therefore, no amounts were deducted from the value of an upstream intermediate entity or ultimate parent owned, either directly or indirectly, via a downstream subsidiary, controlled or affiliated entity.
- i. As of 2021, the Company did not have an investment in SCAs exceeding 10% of admitted assets.
- j. In 2021, the Company did not have impairment write-downs on its investments in affiliated bonds. The Company recognized \$415,080,060 in impairment write-downs on its investment in affiliated joint ventures, including partnerships and LLCs of SCAs. OTTI were determined based on internally developed models.

In 2020, the Company did not have impairment write-downs on its investments in affiliated bonds. The Company recognized \$26,963,363 in impairment write-downs on its investments in affiliated joint ventures, including partnerships and LLCs of SCAs. OTTI were determined based on internally developed models.

In 2021 and 2020, the Company did not have any impairment write-downs on its investments in common stock of affiliates.

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

NOTES TO FINANCIAL STATEMENTS

All SCA Investments

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

SCA Entity	Percentage of SCA Ownership	Gross Amount	Admitted Amount	Nonadmitted Amount
a. SSAP No. 97 8a Entities				
None	-	\$ -	\$ -	\$ -
b. SSAP No. 97 8b(ii) Entities				
MassMutual Holding LLC (57543#-11-8)	100.0	\$ 17,225,435,499	\$ 17,225,435,499	\$ -
Glidepath Holdings Inc (37930@-10-5)	100.0	3,588,200,000	3,588,200,000	-
Total SSAP No. 97 8b(ii) Entities	XXXXXX	\$ 20,813,635,499	\$ 20,813,635,499	\$ -
c. SSAP No. 97 8b(iii) Entities				
The MassMutual Trust Co, FSB (57631@10-5)	100.0	29,013,622	29,013,622	-
MassMutual Investment Holding (55338@-10-5)	100.0	1,789,246,372	1,789,246,372	-
Total SSAP No. 97 8b(iii) Entities	-	\$ 1,818,259,994	\$ 1,818,259,994	\$ -
d. SSAP No. 97 8b(iv) Entities				
None	-	\$ -	\$ -	\$ -
e. Total SSAP No. 97 8b Entities (except 8bi) (b+c+d)	-	\$ 22,631,895,493	\$ 22,631,895,493	\$ -
f. Aggregate Total (a+e)	XXXXXX	\$ 22,631,895,493	\$ 22,631,895,493	\$ -

(2) NAIC Filing Response:

SCA Entity (Should be same entities as shown in M(1) above)	Type of NAIC Filing*	Date of Filing to the NAIC	NAIC Valuation Amount	NAIC Response Received Y/N	NAIC Disallowed Entities Valuation Method Resubmission Required Y/N	Code**
a. SSAP No. 97 8a Entities						
b. SSAP No. 97 8b(ii) Entities						
MassMutual Holding LLC (57543#-11-8)	S2	9/23/2021	\$ 16,183,087,222	Y	N	I
Manhattan National Holding Corp (56313@-10-2)	S2	8/31/2021	9,193,324	Y	N	I
Glidepath Holdings Inc (37930@-10-5)	S1	8/24/2021	-	Y	N	I
Total SSAP No. 97 8b(ii) Entities	XXXXXX	XXXXXX	\$ 16,192,280,546	XXXXXX	XXXXXX	XXXXXX
c. SSAP No. 97 8b(iii) Entities						
The MassMutual Trust Co, FSB (57631@10-5)	S2	3/29/2021	25,839,008	Y	N	I
MML Management Corporation (55338@-10-5)	S2	6/15/2020	1,083,253,682	Y	N	I
Total SSAP No. 97 8b(iii) Entities	XXXXXX	XXXXXX	\$ 1,109,092,690	XXXXXX	XXXXXX	XXXXXX
d. SSAP No. 97 8b(iv) Entities						
None	N/A	N/A	\$ -	N/A	N/A	N/A
e. Total SSAP No. 97 8b Entities (except 8bi) (b+c+d)	XXXXXX	XXXXXX	\$ 17,301,373,236	XXXXXX	XXXXXX	XXXXXX
f. Aggregate Total (a+e)	XXXXXX	XXXXXX	\$ 17,301,373,236	XXXXXX	XXXXXX	XXXXXX

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

** I - Immaterial or M - Material

The U.S. GAAP equity value of MMHLLC is \$17,225,435,449 as of December 31, 2021, which is higher than the statutory carrying value, presented as gross value, in the preceding table, as portions of the equity value are nonadmitted under statutory accounting principles. The current fair value of MMHLLC remains significantly greater than its statutory carrying value.

- n. The Company does not have any insurance SCAs for which the audited statutory equity reflects a departure from NAIC statutory accounting practices.
- o. The Company does not have any insurance SCAs for which losses exceeded its investment in the SCA.

Note 11 – Debt

- a. The Company had commercial paper outstanding with a carrying value and face amount of \$249,984,222 as of December 31, 2021 and \$249,989,854 as of December 31, 2020. The commercial paper issued in 2021 had interest rates ranging from 0.14% to 1.80% with maturity dates ranging from 1 to 35 days. There are no collateral requirements on the Company’s outstanding commercial paper. The commercial paper does not include terms for reverse repurchase agreements.

NOTES TO FINANCIAL STATEMENTS

Interest expense for the commercial paper was \$549,945 for the year ended December 31, 2021 and \$1,628,101 for the year ended December 31, 2020.

The Company has a \$1,000,000,000 five-year credit facility, with a syndicate of lenders that can be used for general corporate purposes and to support commercial paper borrowings. During December 2018, the facility was renewed and the scheduled maturity is December 2023. The facility includes two one-year extension options that may be exercised with proper notification as set forth in the agreement. The facility has an upside option for an additional \$500,000,000. The terms of the credit facility additionally provide for, among other provisions, covenants pertaining to liens, fundamental changes, transactions with affiliates and adjusted statutory surplus. As of and for the years ended December 31, 2021 and 2020, the Company was in compliance with all covenants under the credit facility. For the years ended December 31, 2021 and 2020, there were no draws on the credit facilities. Credit facility fees were less than \$1,000,000 for the years ended December 31, 2021 and 2020.

The Company held debt issued by MMHLLC that amounted to \$2,059,461,398 as of December 31, 2021 and \$2,079,461,398 as of December 31, 2020. The Company recorded interest income on MMHLLC debt of \$76,591,955 in 2021 and \$103,432,953 in 2020.

The Company did not have any capital notes as of December 31, 2021 or 2020.

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

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

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

b. Federal Home Loan Bank agreements:

(1) The Company is a member of the Federal Home Loan Bank of Boston (FHLB Boston). Through its membership, the Company has conducted business activity (borrowings) with the FHLB Boston. The Company uses these funding agreements with the FHLB Boston in an investment spread strategy, consistent with its other investment spread operations. The Company has determined the actual maximum borrowing capacity as \$6,000,000,000. The Company's unused capacity was \$4,494,771,528 as of December 31, 2021.

(2) FHLB Boston capital stock

a. Aggregate totals:

		December 31, 2021		
		1 Total 2+3	2 General Account	3 Separate Account
1. Current Year:				
(a) Membership stock - Class A	\$	-	\$	-
(b) Membership stock - Class B		10,000,000	10,000,000	-
(c) Activity Stock		60,000,000	60,000,000	-
(d) Excess Stock		5,004,600	5,004,600	-
(e) Aggregate Total		<u>\$ 75,004,600</u>	<u>\$ 75,004,600</u>	<u>\$ -</u>
(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		10,000,000	10,000,000	-
(c) Activity Stock		67,200,000	67,200,000	-
(d) Excess Stock		3,900,000	3,900,000	-
(e) Aggregate Total		<u>\$ 81,100,000</u>	<u>\$ 81,100,000</u>	<u>\$ -</u>
(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:

		Years Ended December 31, 2021					
Membership Stock	1	2	Eligible for Redemption				
	Current Year Total	Not Eligible for Redemption	3 Less Than 6 Months	4 6 Months to Less Than 1 Year	5 1 to Less Than 3 Years	6 3 to 5 Years	
1. Class A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2. Class B	10,000,000	10,000,000	-	-	-	-	

NOTES TO FINANCIAL STATEMENTS

(3) Collateral pledged to FHLB:

a. Amount pledged as of December 31, 2021:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 3,511,452,028	\$ 2,602,977,114	\$ 1,505,228,472

2. Current year general account:

	Fair Value	Carrying Value	Aggregate Total Borrowing
Total collateral pledged	\$ 3,511,452,028	\$ 2,602,977,114	\$ 1,505,228,472

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	\$ 2,603,811,840	\$ 1,904,359,463	\$ 1,685,795,478

b. Maximum amount pledged for the year ended December 31, 2021:

1. Current year total general and separate accounts:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 3,823,885,348	\$ 2,797,549,592	\$ 2,111,618,628

2. Current year general account:

	Fair Value	Carrying Value	Amount Borrowed at Time of Maximum Collateral
Maximum collateral pledged	\$ 3,823,885,348	\$ 2,797,549,592	\$ 2,111,618,628

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	\$ 2,849,293,454	\$ 2,123,611,333	\$ 1,690,030,792

NOTES TO FINANCIAL STATEMENTS

(4) Borrowing from FHLB:

a. Amount:

1. Current year:

	December 31, 2021			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,505,228,472	1,505,228,472	-	1,505,228,472
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,505,228,472</u>	<u>\$ 1,505,228,472</u>	<u>\$ -</u>	<u>\$ 1,505,228,472</u>

2. Prior Year-end:

	December 31, 2020			
	1 Total 2+3	2 General Account	3 Separate Account	4 Funding Agreements Reserves Established
(a) Debt	\$ -	\$ -	\$ -	\$ -
(b) Funding agreements	1,685,795,478	1,685,795,478	-	1,685,795,478
(c) Other	-	-	-	-
(d) Aggregate total	<u>\$ 1,685,795,478</u>	<u>\$ 1,685,795,478</u>	<u>\$ -</u>	<u>\$ 1,685,795,478</u>

b. Maximum Amount:

	Years Ended December 31, 2021		
	1 Total 2+3	2 General Account	3 Separate Account
1. Debt	\$ -	\$ -	\$ -
2. Funding	2,111,618,628	2,111,618,628	-
3. Other	-	-	-
4. Aggregate	<u>\$ 2,111,618,628</u>	<u>\$ 2,111,618,628</u>	<u>\$ -</u>

c. FHLB - Prepayment Obligations:

	Does the company have prepayment obligations under the following arrangements (YES/NO)?
1. Debt	N/A
2. Funding agreements	NO
3. Other	N/A

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

a. Defined Benefit Plan

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

The Company's policy is to fund qualified pension costs in accordance with the Employee Retirement Income Security Act of 1974. There were no contributions in 2021 and the company contributed \$80,000,000 to its qualified benefit plan in 2020.

The determination of the discount rate is based upon rates commensurate with current yields on high quality corporate bonds as of a December 31 measurement date (The Measurement Date). A spot yield curve is developed from this data that is used to determine the present value for the obligation. The projected plan cash flows are discounted to the Measurement Date based on the spot yield curve. A single discount rate is utilized to ensure the present value of the benefits cash flow equals the present value computed using the spot yield curve. A 25 basis point change in the discount rate results in approximately a \$87,018,496 change in the projected pension benefit obligation. The methodology includes producing a cash flow of annual accrued benefits. See section 7 of this Note, "Assumptions" for details on the discount rate.

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

NOTES TO FINANCIAL STATEMENTS

	December 31,			
	2021	2020	2021	2020
	Overfunded		Underfunded	
(1) Change in benefit obligation:				
a. Pension Benefits				
1. Benefit obligation, beginning of year	\$ 2,816,183,470	\$ 2,878,247,707	\$ 437,326,187	\$ 391,778,323
2. Service cost	90,586,793	95,202,408	19,239,925	19,091,960
3. Interest cost	66,615,789	85,944,488	10,550,919	11,610,494
4. Contributions by plan participants	-	-	-	-
5. Actuarial (gains) losses	(126,679,356)	25,040,102	(8,749,517)	36,673,081
6. Foreign currency exchange rates	-	-	-	-
7. Benefits paid	(176,877,045)	(70,701,615)	(28,729,259)	(21,101,730)
8. Plan amendments Business combinations, divestitures, curtailments, settlements, and special	-	-	-	-
10. termination benefits	-	(197,549,620)	-	(725,941)
11. Benefit obligation, end of year	<u>\$ 2,669,829,651</u>	<u>\$ 2,816,183,470</u>	<u>\$ 429,638,255</u>	<u>\$ 437,326,187</u>

	December 31,			
	2021	2020	2021	2020
	Overfunded		Underfunded	
b. Postretirement Benefits				
1. Benefit obligation, beginning of year	\$ -	\$ -	\$ 389,079,046	\$ 382,998,132
2. Service cost	-	-	9,601,684	14,369,968
3. Interest cost	-	-	9,174,052	11,198,346
4. Contributions by plan participants	-	-	385,559	386,433
5. Actuarial (gains) losses	-	-	(8,646,069)	(8,626,227)
6. Foreign currency exchange rates	-	-	-	-
7. Benefits paid	-	-	(13,889,147)	(13,809,094)
8. Plan amendments	-	-	-	-
9. Change in discount rate Business combinations, divestitures, curtailments, settlements, and special	-	-	(11,244,838)	-
10. termination benefits	-	-	-	2,561,488
11. Benefit obligation, end of year	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 374,460,287</u>	<u>\$ 389,079,046</u>

	December 31,			
	2021	2020	2021	2020
	Overfunded		Underfunded	
c. Special or contractual benefits per SSAP #11				
1. Benefit obligation, beginning of year	\$ -	\$ -	\$ -	\$ -
2. Service cost	-	-	-	-
3. Interest cost	-	-	-	-
4. Contributions by plan participants	-	-	-	-
5. Actuarial (gains) losses	-	-	-	-
6. Foreign currency exchange rates	-	-	-	-
7. Benefits paid	-	-	-	-
8. Plan amendments	-	-	-	-
9. Business combinations, divestitures, curtailments, settlements, and special termination benefits	-	-	-	-
10. Benefit obligation, end of year	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

NOTES TO FINANCIAL STATEMENTS

	December 31,					
	2021	2020	2021	2020	2021	2020
	Pension Benefits		Postretirement		Special or Contractual Benefits Per SSAP No 11	
(2) Change in plan assets:						
a. Fair value of plan assets, beginning of year	\$ 2,963,606,875	\$ 2,738,341,008	\$ 2,384,071	\$ 3,163,680	\$ -	\$ -
b. Actual return on plan assets	265,937,391	400,948,603	4,227	275,375	-	-
c. Foreign currency exchange rates changes	-	-	-	-	-	-
d. Contributions by reporting entity	28,729,259	101,101,730	13,275,535	12,367,677	-	-
e. Contributions by plan participants	-	-	385,559	386,433	-	-
f. Benefits paid	(205,606,304)	(91,803,345)	(13,889,147)	(13,809,094)	-	-
g. Business combinations, divestitures, curtailments, settlements, and special termination benefits	-	(184,981,121)	-	-	-	-
h. Fair value of plan assets, end of year	\$ 3,052,667,221	\$ 2,963,606,875	\$ 2,160,245	\$ 2,384,071	\$ -	\$ -

	December 31,			
	2021	2020	2021	2020
	Pension Benefits		Other Postretirement Benefits	
(3) Funded status				
a. Components:				
1. Prepaid benefit costs	\$ 636,276,736	\$ 636,706,810	\$ -	\$ -
2. Overfunded plan assets	-	-	-	-
3. Accrued benefit costs	(319,379,749)	305,802,665	400,590,210	400,528,106
4. Liability for pension benefits	382,837,570	-	(28,290,168)	(13,833,131)
b. Assets and liabilities recognized				
1. Assets (nonadmitted)	\$ 636,276,736	\$ 636,706,810	\$ -	\$ -
2. Liabilities recognized	63,457,821	305,802,665	372,300,042	386,694,975
c. Unrecognized liabilities	\$ -	\$ -	\$ -	\$ -

	Year Ended December 31,					
	2021	2020	2021	2020	2021	2020
	Pension Benefits		Postretirement Benefits		Special or Contractual Benefits per SSAP No 11	
(4) Components of net periodic benefit cost						
a. Service cost	\$ 109,826,718	\$ 114,294,368	\$ 9,601,684	\$ 14,369,968	\$ -	\$ -
b. Interest cost	77,166,708	97,554,982	9,174,052	11,198,346	-	-
c. Expected return on plan assets	(182,878,424)	(176,665,200)	(41,522)	(49,910)	-	-
d. Transition asset or obligation	-	-	-	-	-	-
e. Gains and losses	38,621,415	52,193,268	122,925	1,865,775	-	-
f. Prior service cost or (credit)	-	-	(5,519,500)	(5,519,500)	-	-
g. Settlement and Curtailment	-	36,023,137	-	5,671,867	-	-
h. Total net periodic benefit cost	\$ 42,736,417	\$ 123,400,555	\$ 13,337,639	\$ 27,536,546	\$ -	\$ -

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

	December 31,			
	2021	2020	2021	2020
	Pension Benefits		Postretirement Benefits	
a. Items not yet recognized as a component of net periodic cost in prior year	\$ 620,806,927	\$ 884,887,992	\$ (13,833,131)	\$ (5,504,785)
b. Net transition asset or obligation recognized	-	-	-	-
c. Net prior service cost or credit arising during the period	-	-	-	-
d. Net prior service cost or credit recognized	-	-	5,519,500	5,519,500
e. Net gain and loss arising during the period	(218,487,840)	(175,864,660)	(19,853,612)	(11,982,071)
f. Net gain and loss recognized	(38,621,415)	(88,216,405)	(122,925)	(1,865,775)
g. Items not yet recognized as a component of net periodic cost in current year	\$ 363,697,672	\$ 620,806,927	\$ (28,290,168)	\$ (13,833,131)

NOTES TO FINANCIAL STATEMENTS

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

	December 31,			
	2021	2020	2021	2020
	Pension Benefits		Postretirement Benefits	
a. Net transition asset or obligation	\$ -	\$ -	\$ -	\$ -
b. Net prior service cost or credit	-	-	(24,427,000)	(29,946,500)
c. Net recognized gains and losses	363,697,672	620,806,927	(3,863,168)	16,113,369

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

	December 31,			
	2021	2020	2021	2020
	Pension Benefits		Other Postretirement Benefits	
Weighted-average assumptions used to determine net periodic benefit cost as of December 31:				
a. Weighted-average discount rate	2.50 %	3.05 %	2.45 %	3.05 %
b. Expected long-term rate of return on plan assets	6.50 %	6.50 %	3.00 %	3.00 %
c. Rate of compensation increase	3.50 %	3.50 %	3.50 %	3.50 %
d. Interest crediting rate	6.50 %	5.00 %	2.45 %	3.05 %
Weighted-average assumptions used to determine projected benefit obligation as of December 31:				
e. Weighted-average discount rate	2.85 %	2.50 %	2.80 %	2.45 %
f. Rate of compensation increase	3.50 %	3.50 %	3.50 %	3.50 %
g. Interest crediting rate	6.50 %	5.00 %	2.80 %	2.45 %

- (8) The amount of the accumulated benefit obligation for defined benefit pension plans was 3,099,467,906 as of December 31, 2021 and \$3,253,509,657 as of December 31, 2020.

- (9) The Company does not have any significant Postretirement Obligations subject to the Health Cost Trend rate.

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

	<u>Year(s)</u>	<u>Amount</u>
a.	2022	\$ 202,631,725
b.	2023	207,354,813
c.	2024	211,052,335
d.	2025	214,213,069
e.	2026	214,356,773
f.	2027 through 2031	1,067,105,072

- (11) The Company intends to fund \$52,453,654 in 2022 to meet its expected current obligations under its qualified and non-qualified pension and other postretirement benefit plans.

- (12) The Company's qualified pension plan assets managed by the Company and its indirectly wholly owned subsidiaries are as follows:

	December 31,	
	2021	2020
General Investment Account	\$ 195,540,640	\$ 236,550,573
Separate investment accounts:		
Barings Long Duration Bond Fund	309,953,049	317,908,265
Invesco Oppenheimer International Growth Fund		
	<u>\$ 505,493,689</u>	<u>\$ 554,458,838</u>

- (13) The Company does not use alternative amortization methods.

- (14) The Company does not use any substantive commitments as the basis for accounting for the benefit obligation.

- (15) The Company did not have any special contractual benefits recognized during the period.

NOTES TO FINANCIAL STATEMENTS

(16) Significant actuarial gains and losses related to changes in the defined benefit obligations are summarized below.

Source of (Gain)/Loss	Pension Benefits		Postretirement Benefits	
	2021	2020	2021	2020
Change in Discount Rate	\$ (119,871,741)	\$ 203,892,462	\$ (11,244,838)	\$ 19,113,712
Change in Assumptions	6,828,831	(154,149,485)	616,256	(18,003,956)
Other (Gains)/ Losses	(22,385,963)	11,970,206	(9,262,325)	(9,735,983)
Total (Gains) /Losses	\$ (135,428,873)	\$ 61,713,183	\$ (19,890,907)	\$ (8,626,227)

The gains and losses due to discount rate changes shown above are attributable to the discount rate changes shown in the assumptions table under item (7). The 2020 change in actuarial assumptions is due to an updated demographics experience study which consisted of updated retirement rates, turnover rates and the percentage of participants electing lump-sum.

(17) The following sets forth the accumulated benefit obligation funded status of the plans:

	December 31,		December 31,	
	2021	2020	2021	2020
	Overfunded		Underfunded	
Pension:				
a. Accumulated benefit obligation	\$ 2,669,829,651	\$ 2,816,183,470	\$ 429,638,255	\$ 437,326,187
b. Less: Assets	3,052,667,221	2,963,606,875	-	-
c. Accumulated benefit obligation funded status	\$ 382,837,570	\$ 147,423,405	\$ 429,638,255	\$ 437,326,187
Postretirement:				
a. Accumulated benefit obligation	\$ -	\$ -	\$ 374,460,287	\$ 389,079,046
b. Less: Assets	-	-	2,160,245	2,384,071
c. Accumulated benefit obligation funded status	\$ -	\$ -	\$ 372,300,042	\$ 386,694,975

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

	December 31,		December 31,	
	2021	2020	2021	2020
	Overfunded		Underfunded	
Pension:				
a. Projected benefit obligation	\$ 2,669,829,651	\$ 2,816,183,470	\$ 429,638,255	\$ 437,326,187
b. Less: fair value of plan assets	3,052,667,221	2,963,606,875	-	-
c. Projected benefit obligation funded status	\$ 382,837,570	\$ 147,423,405	\$ 429,638,255	\$ 437,326,187
Postretirement:				
a. Projected benefit obligation	\$ -	\$ -	\$ 374,460,287	\$ 389,079,046
b. Less: fair value of plan assets	-	-	2,160,245	2,384,071
c. Projected benefit obligation funded status	\$ -	\$ -	\$ 372,300,042	\$ 386,694,975

The qualified pension plan was overfunded by \$382,837,570 as of December 31, 2021 and \$147,423,405 as of December 31, 2020. The nonqualified pension plans are not funded and have total projected benefit obligations of \$429,638,255 as of December 31, 2021 and \$437,326,187 as of December 31, 2020.

(18) The Company does not have a transition liability.

- b. The target range allocations for the qualified pension plan assets are 19% to 30% domestic equity securities, 0% to 0% long duration bond securities, 0% to 0% GIA and aggregate bond assets, 0% to 0% international equity securities and 25% to 36% alternative investments. Domestic equities primarily include investments in large capitalization (large cap) companies and small capitalization (small cap) companies. Long duration bond securities invest in several long-duration bond exchange traded funds. International equities include investments in American Depository Receipts and limited partnerships that trade primarily in foreign markets in Europe, Latin America and Asia. The pension plan assets invested in the GIA through the unallocated group annuity contract earn a fixed interest. These assets comprised approximately 6% of the plan assets as of December 31, 2021 and 8% as of December 31, 2020.
- c. Fair value of plan assets
The assets of the qualified pension plan are invested in a Massachusetts Mutual Life Insurance Company group annuity contract and the following separate investment account options as well as certain private equity funds, hedge funds, private real estate funds and an all cap U.S. equity index exchange traded fund held in the MassMutual Pension Plan Trust (Pension Trust Assets). The group annuity contract invests in the General Investment Account (GIA) of the Company and separate investment accounts. The separate investment accounts are managed by the Company, the Company's indirectly wholly owned asset manager, subsidiaries, as well as unaffiliated asset managers.

The General Investment Account is designed to provide stable, long-term investment growth. The account value is maintained at a

NOTES TO FINANCIAL STATEMENTS

stable value (generally referred to as "book value") regardless of financial market fluctuations, however, if the plan sponsor initiates a full or partial termination, the amount liquidated is subject to an adjustment that could result in an increase or decrease in the book value of the plan's investment.

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

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

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

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

Vanguard Russell 1000 Index Fund is a separate investment account investing in a mutual fund advised by Vanguard Group Inc. that seeks to passively track the performance of the Russell 1000 Index, representing U.S. large capitalization stocks.

MFS Institutional International Equity Fund is a separate investment account investing in a mutual fund advised by Massachusetts Financial Services Company that seeks to outperform the MSCI EAFE Index over full market cycles. The fund's strategy is to construct a well-diversified portfolio of high-conviction ideas following a growth-at-a-reasonable price style with a quality bias.

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

NOTES TO FINANCIAL STATEMENTS

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

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Investments in the qualified pension plan:				
Pooled separate accounts:				
Common stocks:				
U.S. large capitalization	\$ -	\$ 106,749,530	\$ -	\$ 106,749,530
International large capitalization	-	101,439,635	-	101,439,635
Total pooled separate accounts	-	208,189,165	-	208,189,165
Nonpooled separate accounts:				
Common stocks:				
U.S. large capitalization	-	356,974,861	594,992	357,569,853
U.S. small capitalization	46,779,612	-	-	46,779,612
U.S. mid-capitalization	27,060,427	-	-	27,060,427
International small/mid capitalization	1,350,372	-	-	1,350,372
International large capitalization	-	232,052,014	-	232,052,014
International emerging markets	-	81,046,183	-	81,046,183
Total common stocks	75,190,411	670,073,058	594,992	745,858,461
Debt instruments:				
Corporate and other bonds	-	469,080,291	-	469,080,291
Long-term bond mutual fund	154,804,757	-	-	154,804,757
Short-term bond mutual funds	33,103,487	-	-	33,103,487
Total debt instruments	187,908,244	469,080,291	-	656,988,535
Registered investment companies:				
Limited partnerships:				
Other:				
Government securities	-	396,597,063	-	396,597,063
Collective investment trust	-	-	87,983,918	87,983,918
Other	-	15,065,510	-	15,065,510
Total other	-	411,662,573	87,983,918	499,646,491
Total nonpooled separate accounts	263,098,655	1,550,815,922	88,578,910	1,902,493,487
Total separate investment accounts	263,098,655	1,759,005,087	88,578,910	2,110,682,652
Pension trust assets:				
Common stocks:				
Cash Equivalent	19,878,612	-	-	19,878,612
Collective investment trust	-	57,403,135	-	57,403,135
Hedge fund	-	-	23,505,784	23,505,784
Limited partnerships:				
Private equity/venture capital	-	-	411,142,900	411,142,900
Real Estate	-	-	133,408,189	133,408,189
Hedge	-	-	173,451,156	173,451,156
Total pension trust assets	19,878,612	57,403,135	741,508,029	818,789,776
Total General Investment Account	-	-	195,540,640	195,540,640
Total	\$ 282,977,267	\$ 1,816,408,222	\$ 1,025,627,579	\$ 3,125,013,068

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	December 31, 2020			Total
	Level 1	Level 2	Level 3	
Investments in the qualified pension plan:				
Pooled separate accounts:				
Common stocks:				
U.S. large capitalization	\$ -	\$ 134,176,652	\$ -	\$ 134,176,652
International large capitalization	-	119,844,051	-	119,844,051
Total pooled separate accounts	-	254,020,703	-	254,020,703
Nonpooled separate accounts:				
Common stocks:				
U.S. large capitalization	-	321,835,626	-	321,835,626
U.S. small capitalization	45,380,071	-	-	45,380,071
U.S. mid-capitalization	23,308,083	-	-	23,308,083
International large capitalization	1,817,996	277,951,972	-	279,769,968
International emerging markets	-	83,719,795	-	83,719,795
Total common stocks	70,506,150	683,507,393	-	754,013,543
Debt instruments:				
Corporate and other bonds	-	501,633,258	-	501,633,258
Long-term bond mutual fund	130,302,310	-	-	130,302,310
Short-term bond mutual funds	31,695,892	-	-	31,695,892
Total debt instruments	161,998,202	501,633,258	-	663,631,461
Registered investment companies:				
Limited partnerships:				
Other:				
Government securities	-	359,934,009	-	359,934,009
Collective investment trust	-	-	81,155,075	81,155,075
Other	-	32,176,247	-	32,176,247
Total other	-	392,110,256	81,155,075	473,265,331
Total nonpooled separate accounts	232,504,352	1,577,250,908	81,155,075	1,890,910,334
Total separate investment accounts	232,504,352	1,831,271,611	81,155,075	2,144,931,037
Pension trust assets:				
Common stocks:				
Cash Equivalent	15,643,612	-	-	15,643,612
Collective investment trust	-	48,827,999	-	48,827,999
Hedge fund	-	-	30,000,000	30,000,000
Limited partnerships:				
Private equity/venture capital	-	-	221,818,010	221,818,010
Real Estate	-	-	124,671,934	124,671,934
Hedge	-	-	164,992,144	164,992,144
Total pension trust assets	15,643,612	48,827,999	541,482,088	605,953,700
Total General Investment Account	-	-	236,550,573	236,550,573
Total	\$ 248,147,964	\$ 1,880,099,610	\$ 859,187,736	\$ 2,987,435,310

Fair Value Measurements

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

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

Separate Investment Accounts: There are two methods of determining unit value for the separate investment accounts. The portfolio method is used when the separate investment account invests in a portfolio of securities or two or more underlying mutual funds, bank collective trust funds or other investment vehicles (each an underlying fund). Under this method, the unit value of a separate investment account is determined by dividing the market value of such separate investment account on any valuation date by the total number of units in the separate investment account. The net investment factor method (NIF) is used when the separate investment account invests in shares or units of a single underlying fund. Under this method, the unit value of a separate investment account is determined by taking the unit value for the prior valuation day and multiplying it by the net investment factor for the current valuation day. Under both of these methods the separate investment accounts are therefore classified as Level 2. As of December 31, 2021, the Plan had no specific plans or intentions to sell investments at amounts other than NAV. These investments can be redeemed on a daily basis and have no lockups or funding commitments.

Corporate debt instruments: If Level 1 valuations are not available, the fair value is determined using models such as matrix pricing and therefore, is classified as Level 2, which uses quoted market prices of debt securities with similar characteristics. Valued using the closing price reported on the active market on which the individual securities are traded.

PIMCO bond funds: Valued using the closing price reported on the active market on which the individual securities are traded and therefore classified as Level 1.

Government securities: Marked to market daily based on values provided by third-party vendors or market makers to the extent available or based on model prices. Valuations furnished by a pricing service take into account factors such as institutional-size trading in similar securities, yield, quality, coupon rate, maturity, type of issue, trading characteristics, and other market data and are therefore classified as Level 2.

Common stocks: Valued using the closing price reported on the active market on which the individual securities are traded and therefore classified as Level 1.

NOTES TO FINANCIAL STATEMENTS

Collective investment trust: The net asset value per unit of the Funds is calculated on each business day by dividing the total value of assets, less liabilities, by the number of units outstanding. Unit issuances and redemptions are based on the net asset value determined at the end of the current day.

Limited partnerships: The Plan utilizes the practical expedient to calculate fair value of its investments based on the Plan's pro rata interest in net assets of each underlying partnership. All valuations utilize financial information supplied by the partnership, including income, expenses, gains and losses. The underlying investments of the partnership are accounted for at fair value as described in the partnership's audited financial statements. The multi-strategy hedge fund can be redeemed semi-annually with 95 day notice. The remaining funds can be redeemed periodically with notice that generally ranges from 45 to 90 days. There are no lockups or funding commitments.

Registered investment companies: There are two methods of determining the unit value for the registered investment companies. For the registered investment company that is valued at an unaffiliated company the investment is valued using the closing price reported on the active market on which the funds are traded and is therefore classified as Level 1. For the registered investment company that is valued in-house on the unival system the NIF method is used which takes the unit value for the prior valuation day and multiplies it by the NIF for the current valuation day.

Other: Valued using the closing price reported on the active market on which the individual securities are traded. If Level 1 valuations are not available, the fair value is determined using models such as matrix pricing and therefore, is classified as Level 2, which uses quoted market prices with similar characteristics. Investments included in this category include short term investments, real estate investment trusts, asset backed securities, mortgage backed securities, swaps, derivatives, futures and options. Investments in multi-strategy hedge fund and real estate are based on the Plan's pro rata interest in the net assets of the partnership and have a redemption period, therefore are based on NAV as a practical expedient and are reported in the NAV Practical Expedient column. The multi-strategy hedge fund is comprised of two funds, one of which has a quarterly redemption period and the other with a monthly redemption period. They both require 45 days notice. The real estate fund does not have a specific redemption period, but is dependent upon the liquidation of underlying assets. None of the funds have a lock up period or funding commitment.

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

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

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

- e. **Defined Contribution Plan:**
The Company sponsors funded (qualified 401(k) thrift savings) and unfunded (nonqualified deferred compensation thrift savings) defined contribution plans for its employees, agents and retirees. The qualified 401(k) thrift savings plan's net assets available for benefits were \$4,104,113,679 as of December 31, 2021 and \$3,862,452,761 as of December 31, 2020. The Company match for the qualified 401(k) thrift savings plan is limited to 5% of eligible W-2 compensation. The Company's total matching thrift savings contributions included in general insurance expenses were \$59,776,549 for the year ended December 31, 2021 and \$53,227,604 for the year ended December 31, 2020.

The Company also maintains a defined contribution plan for agents, which was frozen in 2001. The net assets available for these benefits were \$178,929,052 as of December 31, 2021 and \$182,673,575 as of December 31, 2020.

- f. The Company did not participate in multi-employer plans.
- g. The Company did not participate in consolidated or holding company plans.
- h. The Company provides severance-related postemployment benefits for home office employees. The net accumulated liability for these benefits was \$48,954,785 as of December 31, 2021 and \$50,871,739 as of December 31, 2020.

The Company accrues postemployment benefits for the health benefits of agents who qualify for long-term disability and are not retired. The net accumulated liability for these benefits was \$6,699,804 as of December 31, 2021 and \$6,918,167 as of December 31, 2020.

- i. The Company does not apply for a subsidy under the Medicare Part D under the Medicare Modernization Act.

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

- a. The Company is a mutual company, and as such does not have any capital stock.
- b. As a mutual company, the Company has not issued any preferred stocks.
- c. The Company is a mutual company, and as such does not have any cumulative stockholders' dividends.
- d. The Company is a mutual company, and as such does not pay stockholders' dividends.
- e. The Company is a mutual company, and as such does not pay stockholders' dividends.
- f. There are no restrictions on unassigned surplus, which is held for the benefit of all policyholders.

The Company has absolutely and irrevocably guaranteed that, of the \$1,817,887,042 total apportionment from its surplus funds for policyholder dividends for the period beginning January 1, 2022 and ending December 31, 2022, it will pay or cause to be applied during 2022, in all events, annual dividends for participating individual life and annuity policies issued after December 31, 1983, in an amount of not less than \$1,316,000,000. This guarantee covers policies in the aggregate only and does not confer a dividend guarantee on any specific policy.

- g. The Company did not make any advances to surplus.
- h. The Company is a mutual company, and as such does not have any capital stock held for special purposes.
- i. There were no changes in the balances of special surplus funds.

NOTES TO FINANCIAL STATEMENTS

- j. The portion of unassigned funds (surplus) represented or reduced by cumulative unrealized gains and losses was \$19,829,835,705 as of December 31,2021 and \$17,133,590,065 as of December 31,2020.
- k. On March 01, 2021, MassMutual executed a drawdown of \$200,000,000 from its pre-capitalized surplus notes (P-Caps) facility and received \$233,056,607 in market value proceeds, and on November 18, 2021, MassMutual executed the remaining capacity of \$675,000,000 from its P-Caps facility and received \$669,730,531 in market value proceeds, at a fixed 3.2% coupon rate, maturing in 2061.

The following table summarizes the surplus notes issued and outstanding as of December 31, 2021:

1 Item Number	2 Date Issued	3 Interest Rate	4 Original Issue Amount of Note	5 Is Surplus Note Holder a Related Party (Y/N)	6 Carrying Value of Note Prior Year	7 Carrying Value of Note Current Year*	8 Unapproved Interest And/Or Principal
1	11/15/1993	7.625%	\$ 187,500,000	N	\$ 250,000,000	\$ 187,500,000	\$ 2,435,764
2	03/01/1994	7.500%	100,000,000	N	100,000,000	100,000,000	2,500,000
3	05/12/2003	5.625%	193,184,000	N	192,824,702	192,839,468	1,388,510
4	06/01/2009	8.875%	129,597,000	N	128,589,275	128,617,138	958,478
5	01/17/2012	5.375%	263,369,000	N	262,769,726	262,791,926	1,179,674
6	04/15/2015	4.500%	258,212,000	N	254,065,907	254,112,755	2,453,014
7	03/23/2017	4.900%	475,000,000	N	471,049,299	471,049,299	4,913,611
8	10/11/2019	3.729%	838,475,000	N	586,970,686	586,970,686	6,600,755
9	04/16/2020	3.375%	700,000,000	N	697,212,133	697,212,133	4,987,500
10	06/26/2020	5.077%	600,000,000	N	830,046,075	829,943,784	11,507,867
11	03/01/2021	5.077%	200,000,000	N	232,719,295	232,719,295	3,835,955
12	11/18/2021	3.200%	675,000,000	N	-	669,730,531	-
Total	XXX	XXX	\$ 4,620,337,000	XXX	\$ 4,006,247,098	\$ 4,613,487,015	\$ 42,761,127

* Total should agree with Page 3, Line 32.

1 Item Number	9 Current Year Interest Expense Recognized	10 Life-To-Date Interest Expense Recognized	11 Current Year Interest Offset Percentage (not including amounts paid to a 3rd party liquidity provider)	12 Current Year Principal Paid	13 Life-To-Date Principal Paid	14 Date of Maturity
1	\$ 19,062,500	\$ 533,750,000	N	\$ -	-	11/15/2023
2	7,500,000	206,250,000	N	-	-	03/01/2024
3	10,866,600	252,283,688	N	-	-	05/15/2033
4	11,501,732	609,011,692	N	-	-	06/01/2039
5	14,156,084	193,892,988	N	-	-	12/01/2041
6	11,619,540	119,048,850	N	-	-	04/15/2065
7	23,275,000	105,254,722	N	-	-	04/01/2077
8	31,266,733	77,929,960	N	-	-	10/15/2070
9	23,625,000	35,371,875	N	-	-	04/15/2050
10	15,231,000	30,462,000	N	-	-	02/15/2069
11	5,077,000	5,077,000	N	-	-	02/15/2069
12	-	-	N	-	-	12/01/2061
Total	\$ 173,181,189	\$ 2,168,332,775	XXX	\$ -	\$ -	XXX

NOTES TO FINANCIAL STATEMENTS

1	15	16	17	18	19
Item Number	Are Surplus Note Payments Contractually Linked? (Y/N)	Surplus Note Payments Subject to Administrative Offsetting Provisions? (Y/N)	Were Surplus Note Proceeds Used to Purchase an Asset Directly From the Holder of the Surplus Note? (Y/N)	Is Asset Issuer a Related Party (Y/N)	Type of Assets Received Upon Issuance
1	Y	N	N	N	Cash
2	Y	N	N	N	Cash
3	Y	N	N	N	Cash
4	Y	N	N	N	Cash
5	Y	N	N	N	Cash
6	Y	N	N	N	Cash
7	Y	N	N	N	Cash
8	Y	N	N	N	Cash
9	Y	N	N	N	Cash
10	Y	N	N	N	Treasury Notes
11	Y	N	N	N	Treasury Notes
12	Y	N	N	N	Treasury Notes
Total	XXX	XXX	XXX	XXX	

1	20	21	22
Item Number	Principal Amount of Assets Received Upon Issuance	Book/Adjusted Carry Value of Assets	Is Liquidity Source a Related Party to the Surplus note issuer? (Y/N)
1	\$ 250,000,000	\$ -	N
2	99,562,000	-	N
3	192,295,354	-	N
4	127,925,199	-	N
5	262,491,981	-	N
6	253,522,870	-	N
7	470,720,250	-	N
8	608,203,596	-	N
9	697,116,000	-	N
10	837,205,167	-	N
11	233,056,607	-	N
12	675,000,000	-	N
Total	\$ 4,707,099,024	\$ -	XXX

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

All payments of interest and principal are subject to the prior approval of the Division. Anticipated sinking fund payments are due for the notes issued in 1993 and 1994 as follows: \$87,500,000 in 2022, \$150,000,000 in 2023 and \$50,000,000 in 2024. There are no sinking fund requirements for the notes issued in 2003, 2009, 2012, 2015, 2017, 2019, 2020 or 2021. Scheduled interest on the notes issued in 1993 and 2003 is payable on May 15 and November 15 of each year to holders of record on the preceding May 1 or November 1, respectively. Scheduled interest on the note issued in 1994 is payable on March 1 and September 1 of each year to holders of record on the preceding February 15 or August 15, respectively. Scheduled interest on the notes issued in 2009 and 2012 is payable on June 1 and December 1 of each year to holders of record on the preceding May 15 and November 15, respectively. Scheduled interest on the note issued in 2015 is payable on April 15 and October 15 of each year to holders of record on the preceding April 1 and October 1, respectively. Interest expense is not recorded until approval for payment is received from the Division. As of December 31, 2021, the unapproved interest was \$42,761,127. Through December 31, 2021, the Company paid cumulative interest of \$2,168,332,775 on surplus notes. Interest of \$173,181,189 was approved and paid during the year ended December 31, 2021.

- l. There were no restatements due to prior quasi-reorganizations.
- m. There were no quasi-reorganizations in the prior ten years.

NOTES TO FINANCIAL STATEMENTS

Note 14 – Liabilities, Contingencies and Assessments

a. Contingent commitments:

- (1) In the normal course of business, the Company provides specified guarantees and funding to MMHLLC and certain of its subsidiaries. The Company had approximately \$510,000,000 of these unsecured funding commitments to its subsidiaries as of December 31, 2021 and \$490,000,000 as of December 31, 2020. The unsecured commitments are included in private placements in the table below. As of December 31, 2021 and 2020, the Company had not funded, nor had an outstanding balance due on these commitments.

In the normal course of business, the Company enters into letter of credit arrangements. The Company had approximately \$83,848,280 of outstanding letter of credit arrangements as of December 31, 2021 and \$83,848,280 as of December 31, 2020. As of December 31, 2021 and 2020, the Company did not have a funding request attributable to these letter of credit arrangements.

MMIH provided financing of \$5,252,500,000 as of December 31, 2021 and \$5,252,500,000 as of December 31, 2020, for MMAF that can be used to finance ongoing asset purchases. Borrowings under the facility were \$3,634,497,796 as of December 31, 2021 and \$3,552,409,000 as of December 31, 2020. Interest expense for these borrowings was \$60,397,018 in 2021 and \$80,009,839 in 2020. The unfunded amount of the facility, totaling \$1,618,002,204 as of December 31, 2021, is included in private placements in the table below. The floating rate borrowings bear interest at a spread over the 30 day LIBOR. The fixed rate borrowings bear an interest at a spread over average life Treasuries.

The Company approved financing of \$225,000,000 as of December 31, 2021 and December 31, 2020, for Jefferies Finance LLC that can be used to finance ongoing asset purchases and refinance existing Company provided lines of credit. During 2021, Jefferies borrowed \$900,000,000 and repaid \$900,000,000 under this facility. During 2020, Jefferies borrowed \$848,700,000 and repaid \$895,041,000 under the credit facility. As of December 31, 2021, there were no outstanding borrowings under this facility. All outstanding interest due under the facility, as of December 31, 2021 had been paid. The interest of this facility is calculated based on a full pass through of interest accrued on the underlying loans purchased.

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

As of December 31, 2021, the Company had the following commitments:

	2022	2023	2024	2025	2026	Thereafter	Total
Private placements	\$ 3,882,230,157	\$ 2,467,244,708	\$ 986,206,149	\$ 1,024,801,942	\$ 698,310,711	\$ 1,152,605,118	\$ 10,211,398,785
Mortgage loans	454,735,683	294,508,670	357,511,032	258,890,012	19,375,000	103,330,997	1,488,351,394
Partnerships and LLC	817,041,524	790,762,069	324,113,618	794,757,933	649,093,702	2,000,488,157	5,676,257,003
LIHTCs (including equity contributions)	-	-	298,723	-	1,177,503	52,854,065	54,330,291
Total	\$ 5,154,007,364	\$ 3,552,515,447	\$ 1,668,129,552	\$ 2,078,449,887	\$ 1,367,956,916	\$ 3,609,278,337	\$ 17,430,337,473

In the normal course of business the Company enters into commitments related to property lease arrangements, certain indemnities, investments and other business obligations. As of December 31, 2021 and 2020, the Company had no outstanding obligations attributable to these commitments.

Certain commitments and guarantees of the Company provide for the maintenance of subsidiary regulatory capital and surplus levels and liquidity sufficient to meet certain obligations. These commitments and guarantees are not limited. As of December 31, 2021 and 2020, the Company had no outstanding obligations attributable to these commitments and guarantees.

NOTES TO FINANCIAL STATEMENTS

The following details contingent guarantees that are made on behalf of the Company's subsidiaries and affiliates as of December 31, 2021:

(1)	(2)	(3)	(4)	(5)
Nature and circumstances of guarantee and key attributes, including date and duration of agreement	Liability recognition of guarantee. (Include amount recognized at inception. If no initial recognition, document exception allowed under SSAP No. 5R.)	Ultimate financial statement impact if action under the guarantee is required	Maximum potential amount of future payments (undiscounted) the guarantor could be required to make under the guarantee. If unable to develop an estimate, this should be specifically noted.	Current status of payment or performance risk of guarantee. Also provide additional discussion as warranted
The Company guarantees the payment of certain employee and retirement benefits for its wholly-owned subsidiary Barings, if the subsidiary is unable to pay.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	The liabilities for these plans of \$486,567,554 have been recorded on the subsidiaries' books and represent the Company's maximum obligation.	-
Certain guarantees of the Company provide for the maintenance of a subsidiary's regulatory capital, surplus levels and liquidity sufficient to meet certain obligations. These unlimited guarantees are made on behalf of certain wholly-owned subsidiaries. (C.M. Life and MML Bay State).	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	These guarantees are not limited and cannot be estimated.	-
The Company guarantees the payment of various lease obligations on behalf of its subsidiaries and affiliates originating in 2004, 2007 and 2012 and some are in effect until 2023.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize either an expense or an investment in a SCA.	The future maximum potential obligations are immaterial to the Company.	-
The Company executed a counter guarantee for the benefit of a French insurance company that provided certain assurances to the seller of developable land in Southern France. The Company will be capitalizing the special purpose entity that owns the property with a maximum €13 million in equity contributions for its 50% share of such costs.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	€13 million	-
The construction lender for an office building in London, UK required a cost overrun guarantee equivalent to 8% of the total budgeted cost (£6 million). The Company will only be responsible for its pro rata share of any cost overruns with a maximum additional commitment of approximately £3 million.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	£9 million	-

NOTES TO FINANCIAL STATEMENTS

The Company has reimbursement agreements with two companies for any incurred losses with respect to the financing of life sciences redevelopment project guaranteed obligations. The Company will reimburse its pro rata share of such losses.		If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	These guarantees cannot be estimated.	-
The Company guarantees the capital contributions required to be made by a variable annuity separate account contract holder in the event the contract holder fails to payoff a subscription line utilized to deploy capital for the separate account.	-	If the Company were to recognize a liability, the financial statement impact would be to recognize an expense.	\$203,185,000 with the right to increase the line to \$250,000,000.	-
Total	-	-	\$716,712,654	-

(3)

Year Ended December 31, 2021

a. Aggregate maximum potential of future payments of all guarantees (undiscounted) the guarantor could be required to make under guarantees:	\$ 716,712,654
b. Current liability recognized in the financial statements:	
1. Noncontingent liabilities	-
2. Contingent liabilities	-
c. Ultimate financial statement impact if action under the guarantee is required:	
1. Investments in SCA	\$ 486,567,554
2. Joint venture	-
3. Dividends to stockholders	-
4. Expense	230,145,100
5. Other	-
6. Total	<u>\$ 716,712,654</u>

b. Assessments:

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

c. Gain contingencies:

No material gain contingencies were realized subsequent to December 31, 2021 through the filing date.

d. The Company did not have any claims related to extra contractual obligations in 2021.

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

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.

NOTES TO FINANCIAL STATEMENTS**Note 15 – Leases**

a. (1) The Company leases office space and equipment in the normal course of business under various noncancelable operating lease agreements. Additionally, the Company, as lessee, has entered various sublease agreements with affiliates for office space, such as Barings. Total rental expense on net operating leases, recorded in general insurance expenses, was \$91,347,549 for the year ended December 31, 2021 and \$114,418,778 for the year ended December 31, 2020. Net operating leases are net of sublease receipts of \$4,567,118 for the year ended December 31, 2021 and \$6,923,362 for the year ended December 31, 2020.

(2) At December 31, 2021, the minimum aggregate rental commitments are as follows:

	Years	Operating Leases
1.	2022	\$ 85,608,257
2.	2023	86,205,956
3.	2024	74,818,579
4.	2025	62,777,586
5.	2026	46,213,283
6.	Total	<u>\$ 355,623,661</u>

(3) The Company has entered into a sale-leaseback transaction with an unrelated party to sell and leaseback certain fixed assets with book value of \$99,796,951, which resulted in no gain or loss. The lease has a five year term, which expires in 2021 with an annual lease payment of \$19,959,390.

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

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

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

	December 31,			
	2021	2020	2021	2020
	Assets		Liabilities	
a. Swaps	\$ 129,833,456,165	\$ 121,658,681,414	\$ 134,358,190,902	\$ 126,161,016,941
b. Futures	2,302,945,750	373,161,650	-	-
c. Options	15,970,229,000	17,233,762,300	58,000	53,260,000
d. Total	<u>\$ 148,106,630,915</u>	<u>\$ 139,265,605,364</u>	<u>\$ 134,358,248,902</u>	<u>\$ 126,214,276,941</u>

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

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

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

a. During 2021 and 2020, the Company did not transfer any receivables that were reported as sales.

b. Transfer and Servicing of Financial Assets:

- (1) The Company did not participate in securities lending as of December 31, 2021 or 2020.
- (2) The Company did not have any servicing assets or liabilities in 2021 or 2020.
- (3) The Company did not have any servicing assets or liabilities in 2021 or 2020.
- (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2021 or 2020.
- (5) The Company did not have any transfers of financial assets accounted for as secured borrowing in 2021 or 2020.
- (6) The Company did not have any transfers of receivables with recourse in 2021 or 2020.
- (7) See Note 5e1 "Repurchase Agreements".

c. Wash sales:

- (1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days of the sale date to enhance the Company's yield on its investment portfolio.
- (2) The Company did not sell any securities with the NAIC Designation 3 or below, or unrated, for the year ended December 31, 2021 or 2020, that were reacquired within 30 days of the sale date.

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

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

NOTES TO FINANCIAL STATEMENTS**Note 19 – Direct Premium Written/Produced by Managing General Agents/Third Party Administrators**

The Company writes its remaining group life, accident and health business through a third party administrator. Pursuant to a 1994 reinsurance agreement, the Company cedes 100% of this business. Premium ceded was \$114,887 in 2021 and \$112,620 in 2020.

Note 20 – Fair Value Measurements

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

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

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

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

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

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

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

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:

	December 31, 2021				Total
	Level 1	Level 2	Level 3	Net Asset Value (NAV)	
Financial assets:					
Bonds:					
Special revenue	\$ -	\$ 1,697,075	\$ -	\$ -	\$ 1,697,075
Industrial and miscellaneous	45,481,250	248,420,006	186,869,898	-	480,771,154
Preferred stocks	43,255,937	-	18,015,654	-	61,271,591
Common stock - subsidiaries and affiliates	137,166,541	-	253,282,027	-	390,448,568
Common stock - unaffiliated	523,570,859	-	753,425,003	-	1,276,995,862
Derivatives:					
Interest rate swaps	-	15,003,547,754	-	-	15,003,547,754
Options	15,102,900	306,315,848	-	-	321,418,748
Currency swaps	-	947,968,166	-	-	947,968,166
Forward contracts	-	67,173,173	-	-	67,173,173
Financial futures	37,985,820	-	-	-	37,985,820
Separate account assets	52,405,090,449	21,860,812,770	1,893,940,794	-	76,159,844,013
Total financial assets carried at fair value	\$ 53,207,653,756	\$ 38,435,934,792	\$ 3,105,533,376	\$ -	\$ 94,749,121,924
Financial liabilities:					
Interest rate swaps	\$ -	\$ 10,597,858,406	\$ -	\$ -	\$ 10,597,858,406
Options	4,338,400	-	-	-	4,338,400
Currency swaps	-	200,488,496	-	-	200,488,496
Forward contracts	-	68,426,598	-	-	68,426,598
Financial futures	4,822,987	-	-	-	4,822,987
Total financial liabilities carried at fair value	\$ 9,161,387	\$ 10,866,773,500	\$ -	\$ -	\$ 10,875,934,887

The Company reviews the fair value hierarchy classifications each reporting period. Changes in the observability of the valuation attributes and the level of market activity may result in a reclassification of certain financial assets or liabilities between fair value hierarchy classifications. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. For the period ended December 31, 2021, 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, 2020			Net Asset Value (NAV)	Total
		Level 1	Level 2	Level 3		
Financial assets:						
Bonds:						
Special revenue	\$	-	\$ 1,737,732	\$ -	\$ -	\$ 1,737,732
Industrial and miscellaneous		109,647,889	220,495,017	112,271,674	-	442,414,580
Preferred stocks		-	-	18,459,995	-	18,459,995
Common stock - subsidiaries and affiliates		174,082,420	-	186,455,490	-	360,537,910
Common stock - unaffiliated		780,341,178	-	411,934,164	-	1,192,275,342
Derivatives:						
Interest rate swaps		-	20,081,615,245	-	-	20,081,615,245
Options		64,248,621	347,003,631	-	-	411,252,252
Currency swaps		-	517,010,255	-	-	517,010,255
Forward contracts		-	61,493,112	-	-	61,493,112
Credit default swaps		-	874,008	-	-	874,008
Financial futures		4,986,092	-	-	-	4,986,092
Separate account assets		51,280,265,899	22,851,413,939	1,833,906,064	-	75,965,585,902
Total financial assets carried at fair value	\$	52,413,572,099	\$ 44,081,642,939	\$ 2,563,027,387	\$ -	\$ 99,058,242,425

Financial liabilities:						
Derivatives:						
Interest rate swaps	\$	-	\$ 16,133,753,161	\$ -	\$ -	\$ 16,133,753,161
Options		8,390,200	-	-	-	8,390,200
Currency swaps		-	863,969,652	-	-	863,969,652
Forward contracts		-	278,715,228	-	-	278,715,228
Credit default swaps		-	874,008	-	-	874,008
Financial futures		62,809,430	-	-	-	62,809,430
Total financial liabilities carried at fair value	\$	71,199,630	\$ 17,277,312,049	\$ -	\$ -	\$ 17,348,511,679

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

	Balance as of 01/01/2021		Transfers ⁽¹⁾		Gains (Losses) in Net Income		Gains (Losses) in Surplus		Purchases		Issuances		Sales		Settlements		Balance as of 12/31/2021			
	In	Out	In	Out	Net Income	Surplus	Purchases	Issuances	Sales	Settlements	Sales	Settlements	Sales	Settlements	Sales	Settlements				
Financial assets:																				
Bonds:																				
Industrial and miscellaneous	\$	112,271,674	\$	-	\$	(7,152,056)	\$	(20,912,301)	\$	3,951,308	\$	-	\$	99,412,193	\$	-	\$	(700,919)	\$	186,869,899
Preferred Stock		18,459,995		-		-		(763,052)		318,712		-		-		-		-		18,015,655
Common stock - subsidiaries and affiliates		186,455,491		-		-	808,527	(372,365,446)		23,194,260		421,522,611		-		(6,333,415)		-		253,282,028
Common stock - unaffiliated		411,934,164		-		-	7,613,386	116,191,606		243,648,768		3,009,832		(26,269,351)		(2,703,402)		-		753,425,003
Separate account assets		1,833,906,063		1,636,245		(26,150,075)		15,228,129		-		363,419,530		-		(293,852,739)		(246,360)		1,893,940,793
Total financial assets	\$	2,563,027,387	\$	1,636,245	\$	(33,302,131)	\$	2,737,741	\$	(252,985,584)	\$	630,581,270	\$	523,944,636	\$	(320,122,090)	\$	(9,984,096)	\$	3,105,533,378

⁽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.

	Balance as of 01/01/2020		Transfers ⁽¹⁾		Gains (Losses) in Net Income		Gains (Losses) in Surplus		Purchases		Issuances		Sales		Settlements		Balance as of 12/31/2020			
	In	Out	In	Out	Net Income	Surplus	Purchases	Issuances	Sales	Settlements	Sales	Settlements	Sales	Settlements	Sales	Settlements				
Financial assets:																				
Bonds:																				
Industrial and miscellaneous	\$	110,728,451	\$	33,090,610	\$	(28,026,870)	\$	(1,589,789)	\$	(14,691,555)	\$	4,207,826	\$	11,002,631	\$	-	\$	(2,449,630)	\$	112,271,674
Preferred Stock		12,738,793		8,801,990		-		(12,060,420)		7,233,916		1,745,716		-		-		-		18,459,995
Common stock - subsidiaries and affiliates		119,810,156		-		(1,464,670)		-		16,706,248		40,478,272		14,750,000		-		(3,824,516)		186,455,491
Common stock - unaffiliated		267,976,515		1,423,659		-		17,874,402		17,995,711		118,334,500		30,421,432		(6,339,575)		(35,752,480)		411,934,164
Separate account assets		966,991,734		-		-		49,491,835		405,442		836,057,101		-		(18,846,429)		(193,620)		1,833,906,063
Total financial assets	\$	1,478,245,649	\$	43,316,259	\$	(29,491,540)	\$	65,776,448	\$	8,355,426	\$	1,006,311,615	\$	57,919,779	\$	(25,186,004)	\$	(42,220,246)	\$	2,563,027,387

⁽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.

NOTES TO FINANCIAL STATEMENTS

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

(4) *Valuation Techniques and Inputs*

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

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

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

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

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

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

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

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

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

NOTES TO FINANCIAL STATEMENTS

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

		December 31, 2021					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	\$	4,768,832,657	\$ 4,125,427,840	-	\$ 4,768,717,290	\$ 115,367	-	-	
All other governments		1,968,891,170	1,844,462,300	-	1,908,090,073	60,801,097	-	-	
States, territories and possessions		349,891,506	296,938,746	-	349,891,506	-	-	-	
Political subdivisions		504,438,250	441,543,869	-	504,438,250	-	-	-	
Special revenue		5,581,982,954	4,741,359,479	-	5,572,541,201	9,441,753	-	-	
Industrial and miscellaneous		112,389,625,930	106,288,536,791	35,682,159	55,849,961,073	56,503,982,698	-	-	
Parent, subsidiaries and affiliates		6,586,219,174	6,548,332,993	-	43,599,195	6,542,619,979	-	-	
Preferred stocks		669,486,917	554,665,007	42,830,324	-	626,656,593	-	-	
Common stocks - subsidiaries and affiliates ⁽¹⁾		390,448,568	390,448,568	137,166,541	-	253,282,027	-	-	
Common stocks - unaffiliated		1,276,995,862	1,276,995,862	523,570,859	-	753,425,003	-	-	
Mortgage loans - commercial		22,258,766,852	21,536,338,368	-	-	22,258,766,852	-	-	
Mortgage loans - residential		4,849,439,356	4,808,507,195	-	-	4,849,439,356	-	-	
Cash, cash equivalents and short-term investments		5,943,120,350	5,943,120,350	1,350,249,524	4,592,870,826	-	-	-	
Derivatives:									
Interest rate swaps		16,233,071,096	15,003,547,754	-	16,233,071,096	-	-	-	
Options		321,418,748	321,418,748	15,102,900	306,315,848	-	-	-	
Currency swaps		947,968,166	947,968,166	-	947,968,166	-	-	-	
Forward contracts		67,173,173	67,173,173	-	67,173,173	-	-	-	
Credit default swaps		467,924	467,924	-	467,924	-	-	-	
Financial futures		37,985,820	37,985,820	37,985,820	-	-	-	-	
Separate account assets		76,159,844,013	76,159,844,013	52,405,090,449	21,860,812,770	1,893,940,794	-	-	
Financial liabilities:									
Repurchase agreements		2,802,099,858	2,802,099,858	-	2,802,099,858	-	-	-	
Commercial paper		250,325,819	250,325,819	-	250,325,819	-	-	-	
Guaranteed interest contracts		13,827,700,972	13,832,332,392	-	-	13,827,700,972	-	-	
Group annuity contracts and other deposits		1,811,536,651	1,754,506,297	-	-	1,811,536,651	-	-	
Individual annuity contracts		14,580,833,180	12,108,980,683	-	-	14,580,833,180	-	-	
Supplementary contracts		1,167,913,861	1,166,661,055	-	-	1,167,913,861	-	-	
Derivatives:									
Interest rate swaps		11,431,225,680	10,597,858,406	-	11,431,225,680	-	-	-	
Options		4,338,400	4,338,400	4,338,400	-	-	-	-	
Currency swaps		200,488,496	200,488,496	-	200,488,496	-	-	-	
Forward contracts		68,426,598	68,426,598	-	68,426,598	-	-	-	
Credit default swaps		1,880,360	818,605	-	1,880,360	-	-	-	
Financial futures		4,822,987	4,822,987	4,822,987	-	-	-	-	

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of \$24,249,586,680.00.

NOTES TO FINANCIAL STATEMENTS

December 31, 2020

	Aggregate	Admitted				Net	Not
	Fair Value	Assets	Level 1	Level 2	Level 3	Asset Value (NAV)	Practicable (Carrying Value)
Financial assets:							
Bonds:							
U. S. government and agencies	\$ 5,351,481,986	\$ 4,437,978,459	\$ -	\$ 5,351,314,765	\$ 167,221	\$ -	\$ -
All other governments	2,121,468,986	1,847,182,971	-	2,034,115,382	87,353,604	-	-
States, territories and possessions	498,167,235	424,423,367	-	498,167,235	-	-	-
Political subdivisions	506,883,735	431,274,479	-	506,883,735	-	-	-
Special revenue	7,257,048,724	6,241,194,972	-	7,246,988,330	10,060,394	-	-
Industrial and miscellaneous	103,560,451,963	94,990,056,159	109,647,889	57,948,053,197	45,502,750,877	-	-
Parent, subsidiaries and affiliates	6,408,646,484	6,311,833,945	-	-	6,408,646,484	-	-
Preferred stocks	516,444,688	470,256,327	548,386	-	515,896,302	-	-
Common stock - subsidiaries and affiliates ⁽¹⁾							
Common stock - unaffiliated	1,192,275,342	1,192,275,342	780,341,178	-	411,934,164	-	-
Mortgage loans - commercial	23,149,887,738	22,215,882,948	-	-	23,149,887,738	-	-
Mortgage loans - residential	3,885,048,634	3,862,450,067	-	-	3,885,048,634	-	-
Cash, cash equivalents and short-term investments							
	5,738,239,031	5,738,239,031	272,277,771	5,465,961,260	-	-	-
Derivatives:							
Interest rate swaps	22,591,275,428	20,081,615,245	-	22,591,275,428	-	-	-
Options	411,252,252	411,252,252	64,248,621	347,003,631	-	-	-
Currency swaps	517,010,255	517,010,255	-	517,010,255	-	-	-
Forward contracts	61,493,112	61,493,112	-	61,493,112	-	-	-
Credit default swaps	1,981,119	54,804	-	1,981,119	-	-	-
Financial futures	4,986,092	4,986,092	4,986,092	-	-	-	-
Separate account assets	75,965,585,902	75,965,585,902	51,280,265,899	22,851,413,939	1,833,906,064	-	-
Financial liabilities:							
Repurchase agreements	4,006,040,410	4,006,040,410	-	4,006,040,410	-	-	-
Commercial paper	249,989,854	249,989,854	-	249,989,854	-	-	-
Guaranteed investment contracts	11,807,079,270	11,463,626,661	-	-	11,807,079,270	-	-
Group annuity contracts							
and other deposits	1,892,408,874	1,735,624,138	-	-	1,892,408,874	-	-
Individual annuity contracts	12,473,365,512	9,764,165,642	-	-	12,473,365,512	-	-
Supplementary contracts	1,130,042,029	1,128,903,768	-	-	1,130,042,029	-	-
Derivatives:							
Interest rate swaps	16,842,698,715	16,133,753,161	-	16,842,698,715	-	-	-
Options	8,390,200	8,390,200	8,390,200	-	-	-	-
Currency swaps	863,969,652	863,969,652	-	863,969,652	-	-	-
Forward contracts	278,715,228	278,715,228	-	278,715,228	-	-	-
Credit default swaps	974,183	1,118,997	-	974,183	-	-	-
Financial futures	62,809,430	62,809,430	62,809,430	-	-	-	-

⁽¹⁾Common stocks - subsidiaries and affiliates do not include unconsolidated subsidiaries, which had statutory carrying values of \$19,534,186,658.

d. As of December 31, 2021 and 2020, the Company had no investments where it was not practicable to estimate fair value.

Note 21 – Other Items

a. There were no unusual or infrequent items requiring disclosure.

b. There were no troubled debt restructurings that occurred during the period for which the financial statements are presented.

c. Other disclosures:

The Company had assets on deposit with government authorities or trustees, as required by law, in the amount of \$9,605,628 as of December 31, 2021 and \$9,508,600 as of December 31, 2020.

Schedule S, Part 1, Section 1 now includes deposit-type policy reserves in the reserve column for an indemnity reinsurance agreement with The Talcott Resolution Life Insurance Company. These balances have been excluded in prior years.

On December 31, 2020, the Company completed the sale of its retirement plan business to Great-West Life & Annuity Insurance Company (“Great-West”) in a reinsurance transaction for a ceding commission of \$2,350,932,777. Upon closing, Great-West or its affiliates have reinsured \$19,580,554,438 of policyholders’ liabilities and \$47,154,343,680 of separate account liabilities of the Company’s liabilities. As part of the reinsurance transaction, the Company also transferred invested assets with a carrying value of \$7,956,333,911, net of the ceding commission, to Great-West or its affiliates. These amounts are subject to change pending final determination of the net assets sold, transaction costs and other adjustments.

This reinsurance transaction includes a retrocession of the business that the Company reinsures under the terms of the reinsurance agreement between Talcott Resolution Life Insurance Company (Talcott, formerly known as Hartford Life Insurance Company) and the

NOTES TO FINANCIAL STATEMENTS

Company. Of the reinsured policyholder's liabilities above, \$6,987,223,687 is retroceded. Also, part of the retrocession are \$19,524,935,395 of separate account liabilities of Talcott.

The Company holds corporate-owned life insurance (COLI) issued by unaffiliated third party insurers to cover the life of certain qualified senior employees. The primary purpose of the program is to offset future employee benefit expenses. The Company pays all premiums and is the beneficiary of these policies. The Company had recorded cash surrender values of these policies of \$2,667,336,639 as of December 31, 2021 and \$2,421,839,515 as of December 31, 2020.

The cash surrender value is allocated by the following investment categories:

	December 31,	
	2021	2020
Bonds	33 %	34 %
Other Invested Assets	33	27
Stocks	19	20
Cash and Short-Term Investments	13	17
Real Estate	2	2
	100 %	100 %

Business risks

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

Insurance and underwriting risks

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

Investment and interest rate risks

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

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

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

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

Currency exchange risk

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

Credit and other market risks

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

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

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

NOTES TO FINANCIAL STATEMENTS

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

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

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

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

Market risk arises within the Company's employee benefit plans to the extent that the obligations of the plans are not fully matched by assets with determinable cash flows. Pension and postretirement obligations are subject to change due to fluctuations in the discount rates used to measure the liabilities as well as factors such as changes in inflation, salary increases and participants living longer. The risks are that such fluctuations could result in assets that are insufficient over time to cover the level of projected benefit obligations. In addition, increases in inflation and members living longer could increase the pension and postretirement obligations. Management determines the level of this risk using reports prepared by independent actuaries and takes action, where appropriate, in terms of setting investment strategy and determining contribution levels. In the event that the pension obligations arising under the Company's employee benefit plans exceed the assets set aside to meet the obligations, the Company may be required to make additional contributions or increase its level of contributions to these plans.

The spread of the coronavirus, causing increased cases of COVID-19, has caused significant volatility in U.S. and international markets. There is significant uncertainty around the breadth and duration of business disruptions related to COVID-19, as well as its impact on the U.S. and international economies. At this time, the Company is not able to reliably estimate the length and severity of the COVID-19 public health crises and, as such, cannot quantify its impact on the financial results, liquidity and capital resources and its operations in future periods.

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 politics 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.

- d. The Company did not receive any business interruption recoveries in 2021.
- e. The Company did not have unused transferable or non-transferable state tax credits as of December 31, 2021.
- f. Subprime mortgage related risk exposure:
As of December 31, 2021 and 2020, the Company did not have any direct exposure through investments in subprime mortgage loans.

- (1) Direct exposure through other investments

RMBS risk exposure:

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

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

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

NOTES TO FINANCIAL STATEMENTS

Residential mortgage loan pools are homogeneous residential mortgage loans substantially backed by FHA and VA guarantees. The Company purchases seasoned loan pools, most of which are FHA insured or VA guaranteed. The Company does not originate any residential mortgages but invests in residential mortgage loan pools which may contain mortgages of subprime credit quality. As of December 31, 2020 and 2019, the Company did not have any direct subprime exposure through purchases of unsecuritized whole-loan pools.

- (2) Direct exposure through other investments:

Alt-A:	Year Ended December 31, 2021			
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 293,702,628	\$ 321,327,569	\$ 344,915,403	\$ 743,622
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	\$ 15,505,558	\$ 17,407,520	\$ 18,277,511	\$ 109,881
f. Other assets	-	-	-	-
g. Total	<u>\$ 309,208,186</u>	<u>\$ 338,735,090</u>	<u>\$ 363,192,914</u>	<u>\$ 853,504</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, 2020			
	Actual Cost	Carrying Value	Fair Value	OTTI
a. Residential mortgage-backed securities	\$ 262,056,682	\$ 292,017,548	\$ 318,963,049	\$ 733,360
b. Commercial mortgage-backed securities	-	-	-	-
c. Collateralized debt obligations	-	-	-	-
d. Structured securities	-	-	-	-
e. Equity investments in SCAs *	13,964,682	16,122,513	17,177,674	59,717
f. Other assets	-	-	-	-
g. Total	<u>\$ 276,021,364</u>	<u>308,140,061</u>	<u>336,140,723</u>	<u>793,077</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.

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

- g. Retained asset accounts:

- (1) As of December 31, 2021, Company had no retained asset accounts. For the year ended December 31, 2020, the assets and liabilities reported relating to retained asset accounts also include amounts attributable to C.M. Life Retained Assets contracts issued prior to March 2011.

	Retained Asset Accounts In Force			
	December 31,			
	2021		2020	
	Number	Balance	Number	Balance
<u>Account aging categories:</u>				
a. Up to and including 12 months	-	\$ -	1	\$ 2,360
b. 13 to 24 months	-	-	-	-
c. 25 to 36 months	-	-	-	-
d. 37 to 48 months	-	-	-	-
e. 49 to 60 months	-	-	-	-
f. Over 60 months	-	-	18	188,221
g. Total	<u>-</u>	<u>\$ -</u>	<u>19</u>	<u>\$ 190,581</u>

NOTES TO FINANCIAL STATEMENTS

(3)	Individual		Group	
	Number	Balance	Number	Balance
a. Retained asset accounts as of January 1, 2021	19	\$ 190,581	-	\$ -
b. Retained asset accounts issued	-	-	-	-
c. Investment earnings credited to retained asset accounts	-	-	-	-
d. Fees and other charges assessed to retained asset accounts	-	-	-	-
e. Retained asset accounts transferred to state unclaimed property funds	-	-	-	-
f. Retained asset accounts closed/withdrawn	(19)	(190,581)	-	-
g. Retained asset accounts as of December 31, 2021	-	\$ -	-	\$ -

h. Insurance-linked securities:

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

Note 22 – Events Subsequent

Management of the Company has evaluated subsequent events through February 25, 2022, 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, except for:

On February 1, 2022, MassMutual issued a \$300,000,000 funding agreement with a 2.11% fixed-rate and a 6.5-year maturity.

On February 1, 2022, MassMutual issued a \$300,000,000 funding agreement with a 2.26% fixed-rate and a 9-year maturity.

Effective February 1, 2022, approximately \$14.2 billion of in force statutory reserves of certain GALIC's fixed and fixed indexed annuities had been reinsured, on a coinsurance with funds withheld basis to Martello Re, a Bermuda reinsurer focusing on annuities and other investment returns driven products. MassMutual has a noncontrolling interest in Martello Re.

Note 23 – Reinsurance

a. Ceded Reinsurance Report:

Section 1 - General Interrogatories:

- (1) None of the reinsurers, listed in Schedule S as non-affiliated, are owned in excess of 10% or controlled, either directly or indirectly, by the company or by any representative, officer, trustee, or director of the company.
- (2) The Company has not issued any policies that are reinsured with a company chartered in a country other than the United States (excluding U.S. Branches of such companies) that is owned in excess of 10% or controlled directly or indirectly by an insured, a beneficiary, a creditor or any other person not primarily engaged in the insurance business.

Section 2 - Ceded Reinsurance Report - Part A:

- (1) There are no reinsurance agreements in effect under which the reinsurer may unilaterally cancel any reinsurance for reasons other than for nonpayment of premium or other similar credits.
- (2) The Company has no reinsurance agreements in effect such that the amount of losses paid or accrued through the statement date may result in a payment to the reinsurer of amounts which, in aggregate and allowing for offset of mutual credits from other reinsurance agreements with the same reinsurer, exceed the total direct premium collected under the reinsured policies.

Section 3 - Ceded Reinsurance Report - Part B:

- (1) If all reinsurance agreements were terminated by either party as of December 31, 2021, the resulting reduction in surplus due to loss of reinsurance reserve credits net of unearned premium would be \$10,502,667,434, assuming no return of the assets (excluding assets in trust) backing these reserves from the reinsurer to the Company.
- (2) No new agreements have been executed or existing agreements amended, since January 1, 2021, to include policies or contracts that were in force or had existing reserves established by the Company as of the effective date of the agreement.

- b. The Company did not write off any reinsurance balances.
- c. The Company did not commute any ceded reinsurance.
- d. The Company did not reinsure any policies with a certified reinsurer whose rating was downgraded or status subject to revocation.
- e. The Company does not have reinsurance of variable annuity contracts with an affiliated captive reinsurer.
- f. The Company does not have reinsurance of variable annuity contracts with an affiliated captive reinsurer.

NOTES TO FINANCIAL STATEMENTS

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

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

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

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

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

Note 24 – Retrospectively Rated Contracts and Contracts Subject to Redetermination

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

Note 25 – Change in Incurred Losses and Loss Adjustment Expenses

There was no increase to reserves in 2021 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

The Company did not have any intercompany pooling arrangements.

Note 27 – Structured Settlements

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

Note 28 – Health Care Receivables

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

Note 29 – Participating Policies

Participating policies issued by the Company represented 58% of the Company’s policyholders’ reserves and liabilities for deposit-type contracts as of December 31, 2021 and 61% as of December 31, 2020.

The allocation of these dividends to policyholders reflects the relative contribution of each group of participating policies to surplus and considers, among other factors, investment returns, mortality and morbidity experience, expenses and taxes. The Company reported dividends in the amount of \$1,808,135,960 for 2021 and did not allocate any additional income to such policyholders.

Note 30 – Premium Deficiency Reserves

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

Note 31 – Reserves for Life Contracts and Annuity Contracts

- a. The Company waives deduction of deferred fractional premium at death and returns any portion of the final premium beyond the date of death. Reserves are computed using continuous functions to reflect these practices. Surrender values were not promised in excess of the legally computed reserves.
- b. The Company charges a higher premium on certain contracts that cover substandard mortality risk. For these policies, the reserve calculations are based on a substandard mortality rate, which is a multiple of the standard mortality tables.
- c. The Company had \$71,636,098,006 of insurance in force as of December 31, 2021, for which the gross premium was less than the net premium according to the standard valuation set by the Division. Deficiency reserves to cover this insurance totaled \$423,532,335 as of December 31, 2021 and are reported in Exhibit 5.

NOTES TO FINANCIAL STATEMENTS

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

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

NOTES TO FINANCIAL STATEMENTS

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

The withdrawal characteristics of the Company's annuity actuarial reserves and deposit-type contracts as of December 31, 2021 are illustrated below:

a. INDIVIDUAL ANNUITIES:

	<u>General Account</u>	<u>Separate Account with Guarantees</u>	<u>Separate Account Nonquaranteed</u>	<u>Total</u>	<u>% of Total</u>
(1) Subject to discretionary withdrawal:					
a. With market value adjustment	\$ 26,799,139	\$ -	\$ -	\$ 26,799,139	- %
b. At book value less current surrender charge of 5% or more	<u>15,177,752,673</u>	<u>-</u>	<u>-</u>	<u>15,177,752,673</u>	<u>41</u>
c. At fair value	<u>-</u>	<u>-</u>	<u>10,793,920,983</u>	<u>10,793,920,983</u>	<u>30</u>
d. Total with market value adjustment or at fair value (total of 1 through 3)	<u>15,204,551,812</u>	<u>-</u>	<u>10,793,920,983</u>	<u>25,998,472,795</u>	<u>71</u>
e. At book value without adjustment (minimal or no charge or adjustment)	<u>4,487,453,067</u>	<u>-</u>	<u>-</u>	<u>4,487,453,067</u>	<u>12</u>
(2) Not subject to discretionary withdrawal	<u>6,327,082,152</u>	<u>-</u>	<u>-</u>	<u>6,327,082,152</u>	<u>17</u>
(3) Total * (gross: direct + assumed)	<u>26,019,087,031</u>	<u>-</u>	<u>10,793,920,983</u>	<u>36,813,008,014</u>	<u>100 %</u>
(4) Reinsurance ceded	<u>7,761,196,662</u>	<u>-</u>	<u>-</u>	<u>7,761,196,662</u>	
(5) Total (net)* (3) - (4)	<u>\$ 18,257,890,369</u>	<u>\$ -</u>	<u>\$ 10,793,920,983</u>	<u>\$ 29,051,811,351</u>	
(6) Amount included A(1)b above that will move to A(1)e for the first time within the year after the statement date:	<u>\$ 380,399,836</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 380,399,836</u>	

* Reconciliation of total annuity actuarial reserves and deposit fund liabilities:

b. GROUP ANNUITIES:

	<u>General Account</u>	<u>Separate Account with Guarantees</u>	<u>Separate Account Nonquaranteed</u>	<u>Total</u>	<u>% of Total</u>
(1) Subject to discretionary withdrawal:					
a. With market value adjustment	\$ 11,889,738,788	\$ -	\$ -	\$ 11,889,738,788	14 %
b. At book value less current surrender charge of 5% or more	<u>209,328</u>	<u>-</u>	<u>-</u>	<u>209,328</u>	<u>-</u>
c. At fair value	<u>-</u>	<u>16,317,599,407</u>	<u>30,671,767,688</u>	<u>46,989,367,096</u>	<u>58</u>
d. Total with market value adjustment or at fair value (total of 1 through 3)	<u>11,889,948,116</u>	<u>16,317,599,407</u>	<u>30,671,767,688</u>	<u>58,879,315,212</u>	<u>72</u>
e. At book value without adjustment (minimal or no charge or adjustment)	<u>3,364,770,769</u>	<u>-</u>	<u>518,123,235</u>	<u>3,882,894,005</u>	<u>5</u>
(2) Not subject to discretionary withdrawal	<u>19,396,206,868</u>	<u>-</u>	<u>-</u>	<u>19,396,206,868</u>	
(3) Total * (gross: direct + assumed)	<u>34,650,925,754</u>	<u>16,317,599,407</u>	<u>31,189,890,924</u>	<u>82,158,416,085</u>	<u>23</u>
(4) Reinsurance ceded	<u>17,711,127,757</u>	<u>-</u>	<u>-</u>	<u>17,711,127,757</u>	<u>100 %</u>
(5) Total (net)* (3) - (4)	<u>\$ 16,939,797,997</u>	<u>\$ 16,317,599,407</u>	<u>\$ 31,189,890,924</u>	<u>\$ 64,447,288,328</u>	
(6) Amount included B(1)b above that will move to B(1)e for the first time within the year after the statement date:	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	

NOTES TO FINANCIAL STATEMENTS

c. DEPOSIT-TYPE CONTRACTS

(no life contingencies)

	General Account	Separate Account with Guarantees	Separate Account Nonguaranteed	Total	% of Total
(1) Subject to discretionary withdrawal:					
a. With market value adjustment	\$ 2,664,039,824	\$ -	\$ -	\$ 2,664,039,824	8 %
b. At book value less current surrender charge of 5% or more	-	-	-	-	-
c. At fair value	-	-	13,671,488,027	13,671,488,027	40
d. Total with market value adjustment or at fair value (total of 1 through 3)	2,664,039,824	-	13,671,488,027	16,335,527,851	48
e. At book value without adjustment (minimal or no charge or adjustment)	3,233,946,239	-	-	3,233,946,239	9
(2) Not subject to discretionary withdrawal	14,467,527,132	-	-	14,467,527,132	43
(3) Total * (gross: direct + assumed)	20,365,513,194	-	13,671,488,027	34,037,001,221	100 %
(4) Reinsurance ceded	3,324,128,310	-	-	3,324,128,310	
(5) Total (net)* (3) - (4)	\$ 17,041,384,885	\$ -	\$ 13,671,488,027	\$ 30,712,872,912	
(6) Amount included C(1)b above that will move to C(1)e for the first time within the year after the statement date:	\$ -	\$ -	\$ -	\$ -	

	Amount
d. Life and Accident and Health Annual Statement:	
(1) Exhibit 5, Annuities Section, Total (net)	\$ 35,081,932,653
(2) Exhibit 5, Supplementary Contracts with Life Contingencies Section, Total (net)	115,755,712
(3) Exhibit 7, Deposit-Type Contracts, Line 14, Column 1	17,041,384,885
(4) Subtotal	<u>52,239,073,250</u>
Separate Accounts Annual Statement:	
(5) Exhibit 3, Line 0299999, Column 2	58,301,411,314
(6) Exhibit 3, Line 0399999, Column 2	-
(7) Policyholders dividend and coupon accumulations	-
(8) Policyholder premiums	-
(9) Guaranteed interest contracts	-
(10) Other contract deposit funds	13,671,488,027
(11) Subtotal	<u>71,972,899,341</u>
(12) Combined Total	<u>\$ 124,211,972,591</u>

NOTES TO FINANCIAL STATEMENTS

Note 33 - Analysis of Life Actuarial Reserves by Withdrawal Characteristics

The withdrawal characteristics of the Company's life actuarial reserves as of December 31, 2021 are illustrated below:

	Account Value	Cash Value	Reserve
a. General Account			
(1) Subject to discretionary withdrawal, surrender values, or policy loans			
a. Term policies with cash value	-	-	-
b. Universal life	20,559,097,248	20,551,845,794	20,615,917,772
c. Universal life with secondary guarantees	1,923,535,306	1,667,110,970	6,475,985,997
d. Indexed universal life	-	-	-
e. Indexed universal life with secondary guarantees	-	-	-
f. Indexed life	-	-	-
g. Other permanent cash value life insurance	-	72,631,528,174	76,134,038,296
h. Variable life	848,374	848,374	606,931
i. Variable universal life	394,974,997	389,974,031	437,578,506
j. Miscellaneous reserves	-	-	-
(2) Not subject to discretionary withdrawal or no cash values			
a. Term policies without cash value	XXX	XXX	2,823,092,499
b. Accidental death benefits	XXX	XXX	2,657,341
c. Disability - active lives	XXX	XXX	171,156,567
d. Disability - disabled lives	XXX	XXX	287,622,710
e. Miscellaneous reserves	XXX	XXX	1,269,243,218
(3) Total (gross: direct + assumed)	22,878,455,925	95,241,307,343	108,217,899,837
(4) Reinsurance Ceded	4,370,742,034	4,757,747,206	8,797,723,046
(5) Total (net) (3) - (4)	18,507,713,891	90,483,560,137	99,420,176,791
	Account Value	Cash Value	Reserve
b. Separate Account with Guarantees			
(1) Subject to discretionary withdrawal, surrender values, or policy loans			
a. Term policies with cash value	-	-	-
b. Universal life	-	-	-
c. Universal life with secondary guarantees	-	-	-
d. Indexed universal life	-	-	-
e. Indexed universal life with secondary guarantees	-	-	-
f. Indexed life	-	-	-
g. Other permanent cash value life insurance	-	-	-
h. Variable life	-	-	-
i. Variable universal life	1,568,928,871	1,567,662,680	1,568,928,821
j. Miscellaneous reserves	-	-	-
(2) Not subject to discretionary withdrawal or no cash values			
a. Term policies without cash value	XXX	XXX	-
b. Accidental death benefits	XXX	XXX	-
c. Disability - active lives	XXX	XXX	-
d. Disability - disabled lives	XXX	XXX	-
e. Miscellaneous reserves	XXX	XXX	-
(3) Total (gross: direct + assumed)	1,568,928,871	1,567,662,680	1,568,928,821
(4) Reinsurance Ceded	-	-	-
(5) Total (net) (3) - (4)	1,568,928,871	1,567,662,680	1,568,928,821
	Account Value	Cash Value	Reserve
c. Separate Account Nonguaranteed			
(1) Subject to discretionary withdrawal, surrender values, or policy loans			
a. Term policies with cash value	-	-	-
b. Universal life	-	-	-
c. Universal life with secondary guarantees	-	-	-
d. Indexed universal life	-	-	-
e. Indexed universal life with secondary guarantees	-	-	-
f. Indexed life	-	-	-
g. Other permanent cash value life insurance	-	-	-
h. Variable life	1,539,557	1,539,557	2,459,159
i. Variable universal life	1,738,001,819	1,723,770,163	1,732,350,121
j. Miscellaneous reserves	-	-	-
(2) Not subject to discretionary withdrawal or no cash values			
a. Term policies without cash value	XXX	XXX	-
b. Accidental death benefits	XXX	XXX	-
c. Disability - active lives	XXX	XXX	-
d. Disability - disabled lives	XXX	XXX	-
e. Miscellaneous reserves	XXX	XXX	-
(3) Total (gross: direct + assumed)	1,739,541,376	1,725,309,720	1,734,809,280
(4) Reinsurance Ceded	-	-	-
(5) Total (net) (3) - (4)	1,739,541,376	1,725,309,720	1,734,809,280

NOTES TO FINANCIAL STATEMENTS

	Amount
d. Life and Accident and Health Annual Statement:	
(1) Exhibit 5, Life Insurance Section, Total (net)	\$ 97,870,999,284
(2) Exhibit 5, Accidental Death Benefits Section, Total (net)	2,657,341
(3) Exhibit 5, Disability - Active Lives Section, Total (net)	171,176,421
(4) Exhibit 5, Disability - Disabled Lives Section, Total (net)	287,611,349
(5) Exhibit 5, Miscellaneous Reserves Section, Total (net)	1,087,732,396
(6) Subtotal	99,420,176,791
Separate Accounts Annual Statement:	
(7) Exhibit 3, Line 0199999, Column 2	3,303,738,101
(8) Exhibit 3, Line 0499999, Column 2	-
(9) Exhibit 3, Line 0599999, Column 2	-
(10) Subtotal (Lines (7) through (9))	3,303,738,101
(11) Combined Total ((6) and (10))	102,723,914,892

Note 34 – Premium and Annuity Considerations Deferred and Uncollected

a. Deferred and uncollected life insurance premiums and annuity considerations as of December 31, 2021, were as follows:

	Type	Gross	Net of Loading
(1) Industrial	\$	-	\$ -
(2) Ordinary new business		185,617,105	119,244,629
(3) Ordinary renewal		1,000,605,780	1,029,905,451
(4) Credit life		-	-
(5) Group life		10,659,108	10,659,108
(6) Group annuity		-	-
(7) Totals		\$ 1,196,881,993	\$ 1,159,809,188

Note 35 – Separate Accounts

a. Separate account activity:

- (1) Separate accounts and sub-accounts are segregated funds administered and invested by the Company, the performance of which primarily benefits the policyholders/contract holders with an interest in the separate accounts. Group and individual variable annuity, variable life and other insurance policyholders/contract holders select from among the separate accounts and sub-accounts made available by the Company. The separate accounts and sub-accounts are offered as investment options under certain insurance contracts or policies. The returns produced by separate account assets increase or decrease separate account reserves. Separate account assets consist principally of marketable securities reported at fair value. Except for the Company's seed money, supplemental accounts and certain guaranteed separate accounts issued in Minnesota, separate account assets can only be used to satisfy separate account liabilities and are not available to satisfy the general obligations of the Company. Separate account administrative and investment advisory fees are included in miscellaneous income.

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

Product/Transaction:	State Statute Reference / Commissioner Approval / Guidance
Corporate-Owned Life Insurance	Massachusetts General Laws Annotated Chapter 175, Section 132G
Group Variable Universal Life	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Immediate Variable Annuity	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Variable Annuity	Massachusetts General Laws Annotated Chapter 175, Section 132G
Individual Variable Universal Life	Massachusetts General Laws Annotated Chapter 175, Section 132G
Nonguaranteed Retirement Services Separate Accounts	Massachusetts General Laws Annotated Chapter 175, Section 132F
Separate Account Guaranteed Interest Contract	Massachusetts General Laws Annotated Chapter 175, Section 132F
Synthetic Guaranteed Interest Contract	Massachusetts General Laws Annotated Chapter 175, Section 132F
Stable Value Bank-Owned Life Insurance	Massachusetts General Laws Annotated Chapter 175, Section 132G
Supplemental Account	Massachusetts General Laws Annotated Chapter 175, Section 132F

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

The Company's NAIC Separate Account Annual Statement included Separate Accounts with legally insulated products of \$12,363,440,879 as of December 31, 2021 and \$12,145,498,672 as of December 31, 2020. Assets backing products which are not legally insulated are available to satisfy general obligations of the Company. The assets backing legally insulated products from the general account as of December 31, 2020 are attributed to the following:

NOTES TO FINANCIAL STATEMENTS

	Separate Account Assets	
	Legally	Not Legally
	Insulated	Insulated*
Product/Transaction:		
Nonguaranteed Retirement Services Separate Accounts	\$ 41,884,217,323	\$ -
Separate Account Guaranteed Interest Contract	19,745,102,452	251,208,394
Individual Variable Annuity	10,817,398,700	-
Stable Value Bank-Owned Life Insurance	1,574,930,635	-
Individual Variable Universal Life	1,558,018,700	-
Corporate-Owned Life Insurance	178,512,655	-
Group Variable Universal Life	82,572,907	-
Individual Immediate Variable Annuity	64,689,993	-
Supplemental Account	-	3,192,262
Total	<u>\$ 75,905,443,365</u>	<u>\$ 254,400,656</u>

* Exclusive of seed money and unsettled fees and expenses, there are 17 contracts totaling \$103,734,974 that are included as non-insulated. Total separate account assets of the Company are \$76,159,844,023 at December 31, 2021. These 17 non-insulated contracts represent 0.14% of the Company's separate account balance at December 31, 2021. Given the immateriality of the balances, we are disclosing the existence of these 17 non-insulated contracts, but are not preparing a separate green book blank.

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

To compensate the general account for the risk taken, the separate accounts have paid risk charges as follows for the past five years:

2021	\$ 95,307,042
2020	103,722,568
2019	104,346,980
2018	97,690,286
2017	91,538,349

For the year ended December 31, 2021, the general account of the Company had paid \$2,638,376 toward separate account guarantees. The total separate account guarantees paid by the general account for the preceding years ending December 31, 2020, 2019, 2018, and 2017 was \$6,925,020, \$8,183,620, \$6,161,058 and \$7,568,186 respectively.

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

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

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

- b. General nature and characteristics of separate account business:

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

NOTES TO FINANCIAL STATEMENTS

Information regarding the separate accounts of the Company as of and for the year ended December 31, 2021 is as follows:

	Indexed	Nonindexed Guarantee Less than/ Equal to 4%	Nonindexed Guarantee More than 4%	Nonguaranteed Separate Accounts	Total
(1) Premiums, considerations or deposits for the year ended December 31, 2021	\$ -	\$ -	\$ -	\$ 8,560,015,773	\$ 8,560,015,773
Reserves at December 31, 2021					
(2) For accounts with assets at:					
a. Fair value	\$ -	\$ 17,964,356,966	\$ -	\$ 55,743,351,654	\$ 73,707,708,620
b. Nonpolicy liabilities	-	1,568,928,822	-	735,741,065	2,304,669,887
c. Amortized cost	-	-	-	-	-
d. Total Reserves*	\$ -	\$ 19,533,285,788	\$ -	\$ 56,479,092,719	\$ 76,012,378,507
(3) By withdrawal characteristics:					
a. Subject to discretionary withdrawal:	\$ -	\$ -	\$ -	\$ -	-
1. With market value adjustment	-	-	-	-	-
2. At book value without market value adjustment and with current surrender charge of 5% or more	-	-	-	-	-
3. At fair value	-	17,964,356,966	-	55,743,351,654	73,707,708,620
4. At book value, without market value adjustment and with current surrender charge of less than 5%	-	1,568,928,822	-	-	1,568,928,822
5. Nonpolicy liabilities	-	-	-	735,741,065	735,741,065
6. Subtotal	\$ -	\$ 19,533,285,788	\$ -	\$ 56,479,092,719	\$ 76,012,378,507
b. Not subject to discretionary withdrawal	-	-	-	-	-
c. Total	\$ -	\$ 19,533,285,788	\$ -	\$ 56,479,092,719	\$ 76,012,378,507
(4) Reserves for Assets Default Risk in Lieu of AVR	\$ -	\$ -	\$ -	\$ -	-

*Line 2(d) should equal Line 3(c)

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

	December 31, 2021
(1) Transfers as reported in the Summary of Operations of the Separate Account Statement:	
(a) Transfers to separate accounts (Page 4, Line 1.4 and 2)	\$ 3,970,640,350
(b) Transfers from separate accounts (Page 4, Line 10)	(11,152,147,450)
(c) Net transfers to (from) separate accounts (a) - (b)	(7,181,507,100)
(2) Reconciling adjustments:	
(a) Miscellaneous	4,537,661,838
(b) Net deposits on deposit-type liabilities	1,202,280,029
(3) Transfers as reported in the Summary of Operations of the Life, Accident & Health Annual Statement	
(1c) + (2) = (Page 4, Line 26)	\$ (1,441,565,233)

Note 36 – Loss/Claim Adjustment Expenses

The balance in the liability for unpaid accident and health claim adjustment expenses was \$25,494,613 as of December 31, 2021 and \$25,090,457 as of December 31, 2020. The Company incurred \$334,569,372 and paid \$350,320,280 of claim and claim adjustment expenses in the current year, of which \$336,211,448 of the paid amount was attributable to insured or covered events of prior years. The Company decreased the provision for insured events of prior years by \$488,181. There is no salvage and subrogation associated with the Company's disability and long-term care businesses.

GENERAL INTERROGATORIES

**PART 1 - COMMON INTERROGATORIES
GENERAL**

- 1.1 Is the reporting entity a member of an Insurance Holding Company System consisting of two or more affiliated persons, one or more of which is an insurer? Yes [X] No []
If yes, complete Schedule Y, Parts 1, 1A, 2 and 3.
- 1.2 If yes, did the reporting entity register and file with its domiciliary State Insurance Commissioner, Director or Superintendent, or with such regulatory official of the state of domicile of the principal insurer in the Holding Company System, a registration statement providing disclosure substantially similar to the standards adopted by the National Association of Insurance Commissioners (NAIC) in its Model Insurance Holding Company System Regulatory Act and model regulations pertaining thereto, or is the reporting entity subject to standards and disclosure requirements substantially similar to those required by such Act and regulations? Yes [X] No [] N/A []
- 1.3 State Regulating? MA
- 1.4 Is the reporting entity publicly traded or a member of a publicly traded group? Yes [] No [X]
- 1.5 If the response to 1.4 is yes, provide the CIK (Central Index Key) code issued by the SEC for the entity/group.
- 2.1 Has any change been made during the year of this statement in the charter, by-laws, articles of incorporation, or deed of settlement of the reporting entity? Yes [] No [X]
- 2.2 If yes, date of change:
- 3.1 State as of what date the latest financial examination of the reporting entity was made or is being made. 12/31/2019
- 3.2 State the as of date that the latest financial examination report became available from either the state of domicile or the reporting entity. This date should be the date of the examined balance sheet and not the date the report was completed or released. 12/31/2019
- 3.3 State as of what date the latest financial examination report became available to other states or the public from either the state of domicile or the reporting entity. This is the release date or completion date of the examination report and not the date of the examination (balance sheet date). 06/25/2021
- 3.4 By what department or departments?
Commonwealth of Massachusetts Division of Insurance
- 3.5 Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? Yes [] No [] N/A [X]
- 3.6 Have all of the recommendations within the latest financial examination report been complied with? Yes [X] No [] N/A []
- 4.1 During the period covered by this statement, did any agent, broker, sales representative, non-affiliated sales/service organization or any combination thereof under common control (other than salaried employees of the reporting entity), receive credit or commissions for or control a substantial part (more than 20 percent of any major line of business measured on direct premiums) of:
4.11 sales of new business? Yes [] No [X]
4.12 renewals? Yes [] No [X]
- 4.2 During the period covered by this statement, did any sales/service organization owned in whole or in part by the reporting entity or an affiliate, receive credit or commissions for or control a substantial part (more than 20 percent of any major line of business measured on direct premiums) of:
4.21 sales of new business? Yes [] No [X]
4.22 renewals? Yes [] No [X]
- 5.1 Has the reporting entity been a party to a merger or consolidation during the period covered by this statement? Yes [] No [X]
If yes, complete and file the merger history data file with the NAIC.
- 5.2 If yes, provide the name of the entity, NAIC Company Code, and state of domicile (use two letter state abbreviation) for any entity that has ceased to exist as a result of the merger or consolidation.

1 Name of Entity	2 NAIC Company Code	3 State of Domicile

- 6.1 Has the reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period? Yes [] No [X]
- 6.2 If yes, give full information:
- 7.1 Does any foreign (non-United States) person or entity directly or indirectly control 10% or more of the reporting entity? Yes [] No [X]
- 7.2 If yes,
7.21 State the percentage of foreign control; %
7.22 State the nationality(s) of the foreign person(s) or entity(s) or if the entity is a mutual or reciprocal, the nationality of its manager or attorney-in-fact; and identify the type of entity(s) (e.g., individual, corporation or government, manager or attorney in fact).

1 Nationality	2 Type of Entity

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GENERAL INTERROGATORIES

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

1 Affiliate Name	2 Location (City, State)	3 FRB	4 OCC	5 FDIC	6 SEC
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	Enfield, CT		YES		
Flourish Financial, LLC	New York, NY				YES

- 8.5 Is the reporting entity a depository institution holding company with significant insurance operations as defined by the Board of Governors of Federal Reserve System or a subsidiary of the reporting entity? Yes [] No [X]
- 8.6 If response to 8.5 is no, is the reporting entity a company or subsidiary of a company that has otherwise been made subject to the Federal Reserve Board's capital rule? Yes [] No [X] N/A []
9. What is the name and address of the independent certified public accountant or accounting firm retained to conduct the annual audit?
KPMG, LLP, One Financial Plaza, Hartford, CT 06103
- 10.1 Has the insurer been granted any exemptions to the prohibited non-audit services provided by the certified independent public accountant requirements as allowed in Section 7H of the Annual Financial Reporting Model Regulation (Model Audit Rule), or substantially similar state law or regulation? Yes [] No [X]
- 10.2 If the response to 10.1 is yes, provide information related to this exemption:
.....
- 10.3 Has the insurer been granted any exemptions related to the other requirements of the Annual Financial Reporting Model Regulation as allowed for in Section 18A of the Model Regulation, or substantially similar state law or regulation? Yes [] No [X]
- 10.4 If the response to 10.3 is yes, provide information related to this exemption:
.....
- 10.5 Has the reporting entity established an Audit Committee in compliance with the domiciliary state insurance laws? Yes [X] No [] N/A []
- 10.6 If the response to 10.5 is no or n/a, please explain
.....
11. What is the name, address and affiliation (officer/employee of the reporting entity or actuary/consultant associated with an actuarial consulting firm) of the individual providing the statement of actuarial opinion/certification?
Vy Q. Ho, Head of Valuation and Appointed Actuary, Massachusetts Mutual Life Insurance Company, 1295 State Street, Springfield, MA-01111
- 12.1 Does the reporting entity own any securities of a real estate holding company or otherwise hold real estate indirectly? Yes [X] No []
- 12.11 Name of real estate holding company See 12.2
- 12.12 Number of parcels involved 240
- 12.13 Total book/adjusted carrying value \$ 9,006,459,943
- 12.2 If, yes provide explanation:
The Company held investments in debt and equity securities in 155 parcels, which own or hold real estate indirectly. The statement value at December 31, 2021 of debt and equity was \$6,762,147,099 and \$298,631,993 respectively. The Company also held 85 investments in LP and LLC entities that own real estate. These investments had a statement value of \$1,945,680,850 as of December 31, 2021.
13. **FOR UNITED STATES BRANCHES OF ALIEN REPORTING ENTITIES ONLY:**
- 13.1 What changes have been made during the year in the United States manager or the United States trustees of the reporting entity?
.....
- 13.2 Does this statement contain all business transacted for the reporting entity through its United States Branch on risks wherever located? Yes [] No []
- 13.3 Have there been any changes made to any of the trust indentures during the year? Yes [] No []
- 13.4 If answer to (13.3) is yes, has the domiciliary or entry state approved the changes? Yes [] No [] N/A []
- 14.1 Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? Yes [X] No []
- a. Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- b. Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting entity;
- c. Compliance with applicable governmental laws, rules and regulations;
- d. The prompt internal reporting of violations to an appropriate person or persons identified in the code; and
- e. Accountability for adherence to the code.
- 14.11 If the response to 14.1 is No, please explain:
.....
- 14.2 Has the code of ethics for senior managers been amended? Yes [] No [X]
- 14.21 If the response to 14.2 is yes, provide information related to amendment(s).
.....
- 14.3 Have any provisions of the code of ethics been waived for any of the specified officers? Yes [] No [X]
- 14.31 If the response to 14.3 is yes, provide the nature of any waiver(s).
.....

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

GENERAL INTERROGATORIES

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

1 American Bankers Association (ABA) Routing Number	2 Issuing or Confirming Bank Name	3 Circumstances That Can Trigger the Letter of Credit	4 Amount
122240492	Boston Private Bank and Trust Company	Business obligation not fulfilled	128,214
011301798	Eastern Bank	Business obligation not fulfilled	23,839
021201383	Valley National Bank	Business obligation not fulfilled	70,000
	Israel Discount Bank Ltd.	Business obligation not fulfilled	5,159,160

BOARD OF DIRECTORS

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

FINANCIAL

19. Has this statement been prepared using a basis of accounting other than Statutory Accounting Principles (e.g., Generally Accepted Accounting Principles)? Yes [] No [X]
- 20.1 Total amount loaned during the year (inclusive of Separate Accounts, exclusive of policy loans):
- 20.11 To directors or other officers \$
 - 20.12 To stockholders not officers \$
 - 20.13 Trustees, supreme or grand (Fraternal Only) \$
- 20.2 Total amount of loans outstanding at the end of year (inclusive of Separate Accounts, exclusive of policy loans):
- 20.21 To directors or other officers \$
 - 20.22 To stockholders not officers \$
 - 20.23 Trustees, supreme or grand (Fraternal Only) \$
- 21.1 Were any assets reported in this statement subject to a contractual obligation to transfer to another party without the liability for such obligation being reported in the statement? Yes [] No [X]
- 21.2 If yes, state the amount thereof at December 31 of the current year:
- 21.21 Rented from others \$
 - 21.22 Borrowed from others \$
 - 21.23 Leased from others \$
 - 21.24 Other \$
- 22.1 Does this statement include payments for assessments as described in the Annual Statement Instructions other than guaranty fund or guaranty association assessments? Yes [] No [X]
- 22.2 If answer is yes:
- 22.21 Amount paid as losses or risk adjustment \$
 - 22.22 Amount paid as expenses \$
 - 22.23 Other amounts paid \$
- 23.1 Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? Yes [X] No []
- 23.2 If yes, indicate any amounts receivable from parent included in the Page 2 amount: \$
- 24.1 Does the insurer utilize third parties to pay agent commissions in which the amounts advanced by the third parties are not settled in full within 90 days? Yes [] No [X]
- 24.2 If the response to 24.1 is yes, identify the third-party that pays the agents and whether they are a related party.

Name of Third-Party	Is the Third-Party Agent a Related Party (Yes/No)
.....

INVESTMENT

- 25.01 Were all the stocks, bonds and other securities owned December 31 of current year, over which the reporting entity has exclusive control, in the actual possession of the reporting entity on said date? (other than securities lending programs addressed in 25.03)..... Yes [X] No []

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

GENERAL INTERROGATORIES

- 25.02 If no, give full and complete information relating thereto
.....
- 25.03 For securities lending programs, provide a description of the program including value for collateral and amount of loaned securities, and whether collateral is carried on or off-balance sheet. (an alternative is to reference Note 17 where this information is also provided)
N/A
- 25.04 For the reporting entity's securities lending program, report amount of collateral for conforming programs as outlined in the Risk-Based Capital Instructions. \$
- 25.05 For the reporting entity's securities lending program, report amount of collateral for other programs. \$
- 25.06 Does your securities lending program require 102% (domestic securities) and 105% (foreign securities) from the counterparty at the outset of the contract? Yes [] No [] N/A [X]
- 25.07 Does the reporting entity non-admit when the collateral received from the counterparty falls below 100%? Yes [] No [] N/A [X]
- 25.08 Does the reporting entity or the reporting entity's securities lending agent utilize the Master Securities lending Agreement (MSLA) to conduct securities lending? Yes [] No [] N/A [X]
- 25.09 For the reporting entity's securities lending program state the amount of the following as of December 31 of the current year:
- 25.091 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 25.092 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2. \$
- 25.093 Total payable for securities lending reported on the liability page. \$

- 26.1 Were any of the stocks, bonds or other assets of the reporting entity owned at December 31 of the current year not exclusively under the control of the reporting entity, or has the reporting entity sold or transferred any assets subject to a put option contract that is currently in force? (Exclude securities subject to Interrogatory 21.1 and 25.03). Yes [X] No []
- 26.2 If yes, state the amount thereof at December 31 of the current year:
- 26.21 Subject to repurchase agreements \$ 2,802,811,705
- 26.22 Subject to reverse repurchase agreements \$
- 26.23 Subject to dollar repurchase agreements \$
- 26.24 Subject to reverse dollar repurchase agreements \$
- 26.25 Placed under option agreements \$
- 26.26 Letter stock or securities restricted as to sale -
excluding FHLB Capital Stock \$ 471,703,791
- 26.27 FHLB Capital Stock \$ 98,620,000
- 26.28 On deposit with states \$ 9,605,628
- 26.29 On deposit with other regulatory bodies \$
- 26.30 Pledged as collateral - excluding collateral pledged to an FHLB \$ 3,403,475,213
- 26.31 Pledged as collateral to FHLB - including assets backing funding agreements \$ 3,681,481,653
- 26.32 Other \$

26.3 For category (26.26) provide the following:

1 Nature of Restriction	2 Description	3 Amount
Restricted by contractual agreements	Various	471,703,791

- 27.1 Does the reporting entity have any hedging transactions reported on Schedule DB? Yes [X] No []
- 27.2 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.

LINES 27.3 through 27.5: FOR LIFE/FRATERNAL REPORTING ENTITIES ONLY:

- 27.3 Does the reporting entity utilize derivatives to hedge variable annuity guarantees subject to fluctuations as a result of interest rate sensitivity? .. Yes [X] No []
- 27.4 If the response to 27.3 is YES, does the reporting entity utilize:
- 27.41 Special accounting provision of SSAP No. 108 Yes [] No [X]
- 27.42 Permitted accounting practice Yes [] No [X]
- 27.43 Other accounting guidance Yes [X] No []
- 27.5 By responding YES to 27.41 regarding utilizing the special accounting provisions of SSAP No. 108, the reporting entity attests to the following: Yes [] No [X]
- The reporting entity has obtained explicit approval from the domiciliary state.
 - Hedging strategy subject to the special accounting provisions is consistent with the requirements of VM-21.
 - Actuarial certification has been obtained which indicates that the hedging strategy is incorporated within the establishment of VM-21 reserves and provides the impact of the hedging strategy within the Actuarial Guideline Conditional Tail Expectation Amount.
 - Financial Officer Certification has been obtained which indicates that the hedging strategy meets the definition of a Clearly Defined Hedging Strategy within VM-21 and that the Clearly Defined Hedging Strategy is the hedging strategy being used by the company in its actual day-to-day risk mitigation efforts.
- 28.1 Were any preferred stocks or bonds owned as of December 31 of the current year mandatorily convertible into equity, or, at the option of the issuer, convertible into equity? Yes [X] No []
- 28.2 If yes, state the amount thereof at December 31 of the current year. \$ 275,311,719
29. 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 []
- 29.01 For agreements that comply with the requirements of the NAIC Financial Condition Examiners Handbook, complete the following:

1 Name of Custodian(s)	2 Custodian's Address
Citibank, N.A.	333 West 34th Street, New York, NY 10001
JP Morgan Chase Bank N.A.	1 Chase Manhattan Plaza, 19th Floor, New York, NY 10005
State Street Global Services	801 Pennsylvania Avenue, Kansas City, MO 64105
Citibank, N.A.	2 Park Street Sydney, NSW 2000

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¹ Name of Custodian(s)	² Custodian's Address
Northern Trust	50 South LaSalle Street, Chicago, IL 60603

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GENERAL INTERROGATORIES

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

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

29.03 Have there been any changes, including name changes, in the custodian(s) identified in 29.01 during the current year?..... Yes [] No [X]

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

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

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

1 Name of Firm or Individual	2 Affiliation
Carlyle Aviation Group Capital Markets LLC	U.....
Invesco Investment Management Company	U.....
Barings LLC	A.....
Franklin Advisers, Inc.	U.....
Tortoise Capital Advisors, L.L.C.	U.....
PIMCO- Pacific Investment Management Company LLC	U.....
IFM Investors Pty Ltd	U.....
Ashmore Investment Management Limited	U.....
Jefferies Finance LLC	A.....
20 Gates Management, LLC	U.....
Apollo Insurance Solutions Group LP	U.....
Great-West Capital Management LLC	U.....
Fractal Investments LLC	U.....
Apollo Capital Management, L.P.	U.....
Ares Management LLC	U.....
Angelo, Gordon & Co., L.P.	U.....
Western Asset Management Company	U.....
Barings LLC	A.....

29.0597 For those firms/individuals listed in the table for Question 29.05, do any firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") manage more than 10% of the reporting entity's invested assets?..... Yes [] No [X]

29.0598 For firms/individuals unaffiliated with the reporting entity (i.e. designated with a "U") listed in the table for Question 29.05, does the total assets under management aggregate to more than 50% of the reporting entity's invested assets?..... Yes [] No [X]

29.06 For those firms or individuals listed in the table for 29.05 with an affiliation code of "A" (affiliated) or "U" (unaffiliated), provide the information for the table below.

1 Central Registration Depository Number	2 Name of Firm or Individual	3 Legal Entity Identifier (LEI)	4 Registered With	5 Investment Management Agreement (IMA) Filed
168456	Carlyle Aviation Group Capital Markets LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
110363	Invesco Investment Management Company	R6ZXX5P01NP6HXS1S07	SEC	DS.....
106006	Barings LLC	R6ZXX5P01NP6HXS1S07	SEC	DS.....
104517	Franklin Advisers, Inc.	R6ZXX5P01NP6HXS1S07	SEC	NO.....
123711	Tortoise Capital Advisors, L.L.C.	R6ZXX5P01NP6HXS1S07	SEC	NO.....
104559	PIMCO- Pacific Investment Management Company LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
162754	IFM Investors Pty Ltd	R6ZXX5P01NP6HXS1S07	SEC	NO.....
185402	Ashmore Investment Management Limited	R6ZXX5P01NP6HXS1S07	SEC	NO.....
162264	Jefferies Finance LLC	R6ZXX5P01NP6HXS1S07	SEC	DS.....
155480	20 Gates Management, LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
143161	Apollo Insurance Solutions Group LP	R6ZXX5P01NP6HXS1S07	SEC	NO.....
107272	Great-West Capital Management LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
311767	Fractal Investments LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
143161	Apollo Capital Management, L.P.	R6ZXX5P01NP6HXS1S07	SEC	NO.....
130074	Ares Management LLC	R6ZXX5P01NP6HXS1S07	SEC	NO.....
131940	Angelo, Gordon & Co., L.P.	R6ZXX5P01NP6HXS1S07	SEC	NO.....
801-8162	Western Asset Management Company	R6ZXX5P01NP6HXS1S07	SEC	NO.....
106468	Barings LLC	R6ZXX5P01NP6HXS1S07	SEC	DS.....

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

30.2 If yes, complete the following schedule:

1 CUSIP #	2 Name of Mutual Fund	3 Book/Adjusted Carrying Value
55312G-63-0	MML Series Investment Fund II	177,141
55312G-64-8	MML Series Investment Fund II	35,838,526
55312G-65-5	MML Series Investment Fund II	246,288
55312G-66-3	MML Series Investment Fund II	49,838,846
55312G-71-3	MML Series Investment Fund II	46,702,359
57629H-42-6	MassMutual Strategic Emerging Markets Fund	91,152
57629H-85-5	MassMutual Main Street Fund	131,343
57629S-88-5	MassMutual Select Fundamental Growth Fund	110,639
57629U-34-4	MassMutual Select Mid Cap Value Fund	107,701
57629U-35-1	MassMutual Select Mid Cap Value Fund	100,989
57630A-15-4	MassMutual RetireSMARTSM 2055 Fund	854,940
57630E-12-3	MassMutual RetireSMART In Retirement Fund	101,251

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1 CUSIP #	2 Name of Mutual Fund	3 Book/Adjusted Carrying Value
57630E-22-2	MassMutual RetireSMARTSM 2055 Fund	210,101
57630E-29-7	MassMutual RetireSMART 2045 Fund	94,885
57630E-36-2	MassMutual RetireSMART 2035 Fund	94,879
57630E-58-6	MassMutual Select Small Company Value Fund	76,736
57630E-69-3	MassMutual Select Mid Cap Value Fund	176,751
57630E-77-6	MassMutual Select Fundamental Growth Fund	48,639
57630E-81-8	MassMutual Select Diversified Value Fund	96,873
57630G-59-9	MassMutual Select T Rowe Price Retirement 2005 Fund	100,267
57630G-81-3	MassMutual RetireSMART 2060 Fund	113,553
57630G-82-1	MassMutual RetireSMART 2060 Fund	113,990
57630G-83-9	MassMutual RetireSMART 2060 Fund	212,882
57630G-84-7	MassMutual RetireSMART 2060 Fund	113,907
57630G-85-4	MassMutual RetireSMART 2060 Fund	212,374
57630G-86-2	MassMutual RetireSMART 2060 Fund	213,520
57630G-87-0	MassMutual RetireSMART 2060 Fund	10,777,513
	Invesco Developing Markets Equity Fund	115,937,258
G069E@-10-1	Spl Situations CR FD 1 Tranche S SHS	3,133,421
G0756X-MM-5	Barings Emerging Markets Corporate Bond Fund	60,554,053
G0R5PL-85-1	Barings U S High Yield Bond Fund	58,495,261
30.2999	Total	385,078,037

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

1 Name of Mutual Fund (from above table)	2 Name of Significant Holding of the Mutual Fund	3 Amount of Mutual Fund's Book/Adjusted Carrying Value Attributable to the Holding	4 Date of Valuation
MML Series Investment Fund II	Uber Technologies, Inc.	2,856,607	12/31/2021
MML Series Investment Fund II	Uber Technologies, Inc.	2,856,607	12/31/2021
MML Series Investment Fund II	Apple, Inc.	3,191,998	12/31/2021
MML Series Investment Fund II	Apple, Inc.	3,191,998	12/31/2021
MML Series Investment Fund II	Alphabet, Inc. Class A	4,351,354	12/31/2021
MassMutual Strategic Emerging Markets Fund	Wells Fargo & Co	18,070,132	12/31/2021
MassMutual Main Street Fund	Microsoft Corp	8,544,882	12/31/2021
MassMutual Select Fundamental Growth Fund	ICON PLC	2,384,380	12/31/2021
MassMutual Select Mid Cap Value Fund	Cerner Corp	1,852,757	12/31/2021
MassMutual Select Mid Cap Value Fund	Cerner Corp	1,852,757	12/31/2021
MassMutual RetireSMARTSM 2055 Fund	MM Select Equity Asset Fund Class I	14,211,252	12/31/2021
MassMutual RetireSMART In Retirement Fund	MassMutual Core Bond Fund Class I	20,967,021	12/31/2021
MassMutual RetireSMARTSM 2055 Fund	MM Select Equity Asset Fund Class I	14,211,252	12/31/2021
MassMutual RetireSMART 2045 Fund	MM Select Equity Asset Fund Class I	28,818,196	12/31/2021
MassMutual RetireSMART 2035 Fund	MM Select Equity Asset Fund Class I	32,848,987	12/31/2021
MassMutual Select Small Company Value Fund	BankUnited Inc	4,018,985	12/31/2021
MassMutual Select Mid Cap Value Fund	Cerner Corp	1,852,757	12/31/2021
MassMutual Select Fundamental Growth Fund	ICON PLC	2,384,380	12/31/2021
MassMutual Select Diversified Value Fund	Johnson & Johnson	11,170,871	12/31/2021
MassMutual Select T Rowe Price Retirement 2005 Fund	MassMutual Select T Rowe Price Bond Asset Fund Class I	6,808,128	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
MassMutual RetireSMART 2060 Fund	MM Select Equity Asset Fund Class I	4,760,952	12/31/2021
Invesco Developing Markets Equity Fund	Taiwan Semiconductor Manufacturing Co Ltd	15,819,708	12/31/2021
Spl Situations CR FD 1 Tranche S SHS	Ayting (fka Alma Consulting Group)	1,895,491	12/31/2021
Barings Emerging Markets Corporate Bond Fund	Petroleos Mexicanos (PEMEX)	2,933,518	12/31/2021
Barings U S High Yield Bond Fund	JBS	4,104,410	12/31/2021

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
GENERAL INTERROGATORIES

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

	1	2	3
	Statement (Admitted) Value	Fair Value	Excess of Statement over Fair Value (-), or Fair Value over Statement (+)
31.1 Bonds	128,599,060,760	136,462,234,685	7,863,173,925
31.2 Preferred stocks	555,090,621	669,912,530	114,821,909
31.3 Totals	129,154,151,381	137,132,147,215	7,977,995,834

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

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

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

32.2 If the answer to 32.1 is yes, does the reporting entity have a copy of the broker's or custodian's pricing policy (hard copy or electronic copy) for all brokers or custodians used as a pricing source? Yes [X] No []

32.3 If the answer to 32.2 is no, describe the reporting entity's process for determining a reliable pricing source for purposes of disclosure of fair value for Schedule D:

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

33.2 If no, list exceptions:
 At 12/31/2021, 29 issues for 25 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 \$542,160,866.58 or 0.36% of all assets.

34. By self-designating 5GI securities, the reporting entity is certifying the following elements of 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 []

35. 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]

36. 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]

37. By rolling/renewing short-term or cash equivalent investments with continued reporting on Schedule DA, Part 1 or Schedule E Part 2 (identified through a code (%) in those investment schedules), the reporting entity is certifying to the following:
 a. The investment is a liquid asset that can be terminated by the reporting entity on the current maturity date.
 b. If the investment is with a nonrelated party or nonaffiliate, then it reflects an arms-length transaction with renewal completed at the discretion of all involved parties.
 c. If the investment is with a related party or affiliate, then the reporting entity has completed robust re-underwriting of the transaction for which documentation is available for regulator review.
 d. Short-term and cash equivalent investments that have been renewed/rolled from the prior period that do not meet the criteria in 37.a - 37.c are reported as long-term investments.
 Has the reporting entity rolled/renewed short-term or cash equivalent investments in accordance with these criteria? Yes [] No [X] N/A []

GENERAL INTERROGATORIES

OTHER

38.1 Amount of payments to trade associations, service organizations and statistical or rating bureaus, if any?\$5,245,183

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

1 Name	2 Amount Paid
American Council of Life Insurers (ACLI)	1,680,624
US Chamber of Commerce	1,336,860
.....	

39.1 Amount of payments for legal expenses, if any?\$6,574,210

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

1 Name	2 Amount Paid
.....	

40.1 Amount of payments for expenditures in connection with matters before legislative bodies, officers or departments of government, if any?\$2,107,060

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

1 Name	2 Amount Paid
.....	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

GENERAL INTERROGATORIES

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

Life, Accident and Health Companies/Fraternal Benefit Societies:

- 1.1 Does the reporting entity have any direct Medicare Supplement Insurance in force? Yes No
- 1.2 If yes, indicate premium earned on U.S. business only\$884,712
- 1.3 What portion of Item (1.2) is not reported on the Medicare Supplement Insurance Experience Exhibit?\$
1.31 Reason for excluding:
- 1.4 Indicate amount of earned premium attributable to Canadian and/or Other Alien not included in Item (1.2) above.\$
- 1.5 Indicate total incurred claims on all Medicare Supplement insurance.\$926,656

- 1.6 Individual policies:
 - Most current three years:
 - 1.61 Total premium earned\$24,364
 - 1.62 Total incurred claims\$17,906
 - 1.63 Number of covered lives13
 - All years prior to most current three years
 - 1.64 Total premium earned\$860,348
 - 1.65 Total incurred claims\$908,750
 - 1.66 Number of covered lives466

- 1.7 Group policies:
 - Most current three years:
 - 1.71 Total premium earned\$
 - 1.72 Total incurred claims\$
 - 1.73 Number of covered lives
 - All years prior to most current three years
 - 1.74 Total premium earned\$
 - 1.75 Total incurred claims\$
 - 1.76 Number of covered lives

2. Health Test:

	1 Current Year	2 Prior Year
2.1 Premium Numerator		
2.2 Premium Denominator	19,867,980,547	10,275,043,994
2.3 Premium Ratio (2.1/2.2)	0.000	0.000
2.4 Reserve Numerator	104,457,463	107,539,240
2.5 Reserve Denominator	133,331,163,456	122,348,628,631
2.6 Reserve Ratio (2.4/2.5)	0.001	0.001

- 3.1 Does this reporting entity have Separate Accounts? Yes No
- 3.2 If yes, has a Separate Accounts Statement been filed with this Department? Yes No N/A
- 3.3 What portion of capital and surplus funds of the reporting entity covered by assets in the Separate Accounts statement, is not currently distributable from the Separate Accounts to the general account for use by the general account?\$92,246,751
- 3.4 State the authority under which Separate Accounts are maintained:
Massachusetts General Law, C175 Sections 132F, 132G & 132H
- 3.5 Was any of the reporting entity's Separate Accounts business reinsured as of December 31? Yes No
- 3.6 Has the reporting entity assumed by reinsurance any Separate Accounts business as of December 31? Yes No
- 3.7 If the reporting entity has assumed Separate Accounts business, how much, if any, reinsurance assumed receivable for reinsurance of Separate Accounts reserve expense allowances is included as a negative amount in the liability for "Transfers to Separate Accounts due or accrued (net)"?\$
- 4. For reporting entities having sold annuities to another insurer where the insurer purchasing the annuities has obtained a release of liability from the claimant (payee) as the result of the purchase of an annuity from the reporting entity only:
- 4.1 Amount of loss reserves established by these annuities during the current year:\$
- 4.2 List the name and location of the insurance company purchasing the annuities and the statement value on the purchase date of the annuities.

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

GENERAL INTERROGATORIES

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

- 5.1 Do you act as a custodian for health savings accounts? Yes [] No [X]
- 5.2 If yes, please provide the amount of custodial funds held as of the reporting date. \$
- 5.3 Do you act as an administrator for health savings accounts? Yes [] No [X]
- 5.4 If yes, please provide the balance of funds administered as of the reporting date. \$
- 6.1 Are any of the captive affiliates reported on Schedule S, Part 3, authorized reinsurers? Yes [] No [X] N/A []
- 6.2 If the answer to 6.1 is yes, please provide the following:

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

7. Provide the following for individual ordinary life insurance* policies (U.S. business only) for the current year (prior to reinsurance assumed or ceded):
- 7.1 Direct Premium Written \$ 7,325,514,681
- 7.2 Total Incurred Claims \$ 2,899,068,295
- 7.3 Number of Covered Lives 14,983

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

8. Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states? Yes [X] No []
- 8.1 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 []

Life, Accident and Health Companies Only:

- 9.1 Are personnel or facilities of this reporting entity used by another entity or entities or are personnel or facilities of another entity or entities used by this reporting entity (except for activities such as administration of jointly underwritten group contracts and joint mortality or morbidity studies)? Yes [X] No []
- 9.2 Net reimbursement of such expenses between reporting entities:
- 9.21 Paid \$
- 9.22 Received \$ 94,300,979
- 10.1 Does the reporting entity write any guaranteed interest contracts? Yes [X] No []
- 10.2 If yes, what amount pertaining to these lines is included in:
- 10.21 Page 3, Line 1 \$ 367,941,347
- 10.22 Page 4, Line 1 \$ 115,000,000
11. For stock reporting entities only:
- 11.1 Total amount paid in by stockholders as surplus funds since organization of the reporting entity: \$
12. Total dividends paid stockholders since organization of the reporting entity:
- 12.11 Cash \$
- 12.12 Stock \$
- 13.1 Does the reporting entity reinsure any Workers' Compensation Carve-Out business defined as: Yes [] No [X]
 Reinsurance (including retrocessional reinsurance) assumed by life and health insurers of medical, wage loss and death benefits of the occupational illness and accident exposures, but not the employers liability exposures, of business originally written as workers' compensation insurance.
- 13.2 If yes, has the reporting entity completed the Workers' Compensation Carve-Out Supplement to the Annual Statement? Yes [] No []
- 13.3 If 13.1 is yes, the amounts of earned premiums and claims incurred in this statement are:
- | | 1
Reinsurance
Assumed | 2
Reinsurance
Ceded | 3
Net
Retained |
|---|-----------------------------|---------------------------|----------------------|
| 13.31 Earned premium | | | |
| 13.32 Paid claims | | | |
| 13.33 Claim liability and reserve (beginning of year) | | | |
| 13.34 Claim liability and reserve (end of year) | | | |
| 13.35 Incurred claims | | | |

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
GENERAL INTERROGATORIES

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

13.4 If reinsurance assumed included amounts with attachment points below \$1,000,000, the distribution of the amounts reported in Lines 13.31 and 13.34 for Column (1) are:

	Attachment Point	1 Earned Premium	2 Claim Liability and Reserve
13.41	<\$25,000	.....	.....
13.42	\$25,000 - 99,999	.....	.....
13.43	\$100,000 - 249,999	.....	.....
13.44	\$250,000 - 999,999	.....	.....
13.45	\$1,000,000 or more	.....	.....

13.5 What portion of earned premium reported in 13.31, Column 1 was assumed from pools? \$

Fraternal Benefit Societies Only:

- 14. Is the reporting entity organized and conducted on the lodge system, with ritualistic form of work and representative form of government? Yes [] No []
- 15. How often are meetings of the subordinate branches required to be held?
- 16. How are the subordinate branches represented in the supreme or governing body?
- 17. What is the basis of representation in the governing body?
- 18.1 How often are regular meetings of the governing body held?
- 18.2 When was the last regular meeting of the governing body held?
- 18.3 When and where will the next regular or special meeting of the governing body be held?
- 18.4 How many members of the governing body attended the last regular meeting?
- 18.5 How many of the same were delegates of the subordinate branches?
- 19. How are the expenses of the governing body defrayed?
- 20. When and by whom are the officers and directors elected?
- 21. What are the qualifications for membership?
- 22. What are the limiting ages for admission?
- 23. What is the minimum and maximum insurance that may be issued on any one life?
- 24. Is a medical examination required before issuing benefit certificates to applicants? Yes [] No []
- 25. Are applicants admitted to membership without filing an application with and becoming a member of a local branch by ballot and initiation? Yes [] No []
- 26.1 Are notices of the payments required sent to the members? Yes [] No [] N/A []
- 26.2 If yes, do the notices state the purpose for which the money is to be used? Yes [] No []
- 27. What proportion of first and subsequent year's payments may be used for management expenses?
 - 27.11 First Year %
 - 27.12 Subsequent Years %
- 28.1 Is any part of the mortuary, disability, emergency or reserve fund, or the accretions from or payments for the same, used for expenses? Yes [] No []
- 28.2 If so, what amount and for what purpose? \$
- 29.1 Does the reporting entity pay an old age disability benefit? Yes [] No []
- 29.2 If yes, at what age does the benefit commence?
- 30.1 Has the constitution or have the laws of the reporting entity been amended during the year? Yes [] No []
- 30.2 If yes, when?
- 31. Have you filed with this Department all forms of benefit certificates issued, a copy of the constitution and all of the laws, rules and regulations in force at the present time? Yes [] No []
- 32.1 State whether all or a portion of the regular insurance contributions were waived during the current year under premium-paying certificates on account of meeting attained age or membership requirements? Yes [] No []
- 32.2 If so, was an additional reserve included in Exhibit 5? Yes [] No [] N/A []
- 32.3 If yes, explain
- 33.1 Has the reporting entity reinsured, amalgamated with, or absorbed any company, order, society, or association during the year? Yes [] No []
- 33.2 If yes, was there any contract agreement, or understanding, written or oral, expressed or implied, by means of which any officer, director, trustee, or any other person, or firm, corporation, society or association, received or is to receive any fee, commission, emolument, or compensation of any nature whatsoever in connection with, on an account of such reinsurance, amalgamation, absorption, or transfer of membership or funds? Yes [] No [] N/A []
- 34. Has any present or former officer, director, trustee, incorporator, or any other persons, or any firm, corporation, society or association, any claims of any nature whatsoever against this reporting entity, which is not included in the liabilities on Page 3 of this statement? Yes [] No []
- 35.1 Does the reporting entity have outstanding assessments in the form of liens against policy benefits that have increased surplus? Yes [] No []
- 35.2 If yes, what is the date of the original lien and the outstanding balance as the surplus remains?

Date	Outstanding Lien amount
.....
.....

NONE

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

FIVE-YEAR HISTORICAL DATA

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

\$000 omitted for amounts of life insurance

	1 2021	2 2020	3 2019	4 2018	5 2017
Life Insurance in Force (Exhibit of Life Insurance)					
1. Ordinary - whole life and endowment (Line 34, Col. 4)	421,477,259	390,441,734	430,924,448	300,479,113	278,784,267
2. Ordinary - term (Line 21, Col. 4, less Line 34, Col. 4)	415,082,482	383,934,366	284,755,414	318,185,389	286,269,389
3. Credit life (Line 21, Col. 6)					
4. Group, excluding FEGLI/SGLI (Line 21, Col. 9 less Lines 43 & 44, Col. 4)	29,075,061	27,991,393	26,755,924	65,940,688	64,964,787
5. Industrial (Line 21, Col. 2)					
6. FEGLI/SGLI (Lines 43 & 44, Col. 4)					
7. Total (Line 21, Col. 10)	865,634,803	802,367,494	742,435,787	684,605,190	630,018,443
7.1 Total in force for which VM-20 deterministic/stochastic reserves are calculated					
New Business Issued (Exhibit of Life Insurance)					
8. Ordinary - whole life and endowment (Line 34, Col. 2)	40,975,205	35,029,320	37,549,434	32,343,359	32,750,498
9. Ordinary - term (Line 2, Col. 4, less Line 34, Col. 2)	53,422,604	50,460,960	50,380,625	48,992,057	48,258,016
10. Credit life (Line 2, Col. 6)					
11. Group (Line 2, Col. 9)	3,232,424	2,392,199	1,981,037	4,264,882	6,352,081
12. Industrial (Line 2, Col. 2)					
13. Total (Line 2, Col. 10)	97,630,233	87,882,479	89,911,096	85,600,298	87,360,595
Premium Income - Lines of Business (Exhibit 1 - Part 1)					
14. Industrial life (Line 20.4, Col. 2)					
15.1 Ordinary-life insurance (Line 20.4, Col. 3)	10,177,096,900	8,048,291,978	8,169,175,191	6,510,171,725	6,201,581,128
15.2 Ordinary-individual annuities (Line 20.4, Col. 4)	4,530,057,897	2,057,130,756	1,751,097,710	2,598,978,399	2,227,107,174
16. Credit life (group and individual) (Line 20.4, Col. 5)					
17.1 Group life insurance (Line 20.4, Col. 6)	95,921,786	77,953,391	67,707,664	646,047,476	(2,616,625,570)
17.2 Group annuities (Line 20.4, Col. 7)	4,388,506,683	(580,642,755)	12,039,080,643	12,392,277,530	11,064,787,204
18.1 A & H-group (Line 20.4, Col. 8)	379,640	352,455	244,828	169,605	63,374
18.2 A & H-credit (group and individual) (Line 20.4, Col. 9)					
18.3 A & H-other (Line 20.4, Col. 10)	676,017,640	671,958,167	673,066,777	756,741,821	611,172,889
19. Aggregate of all other lines of business (Line 20.4, Col. 11)					
20. Total	19,867,980,546	10,275,043,992	22,700,372,813	22,904,386,556	17,488,086,199
Balance Sheet (Pages 2 & 3)					
21. Total admitted assets excluding Separate Accounts business (Page 2, Line 26, Col. 3)	238,807,402,404	224,493,407,863	198,018,586,709	179,168,746,235	170,900,940,563
22. Total liabilities excluding Separate Accounts business (Page 3, Line 26)	211,975,619,833	200,165,994,528	179,125,676,538	163,558,959,566	155,195,727,040
23. Aggregate life reserves (Page 3, Line 1)	134,668,226,295	121,992,059,903	127,404,910,418	119,010,301,284	112,904,106,756
23.1 Excess VM-20 deterministic/stochastic reserve over NPR related to Line 7.1					
24. Aggregate A & H reserves (Page 3, Line 2)	3,600,781,585	3,174,986,915	3,074,252,813	2,967,573,431	2,859,824,790
25. Deposit-type contract funds (Page 3, Line 3)	17,041,384,885	14,579,842,257	15,296,773,875	14,369,907,287	13,014,264,844
26. Asset valuation reserve (Page 3, Line 24.01)	6,414,184,335	5,205,048,230	4,670,184,316	3,306,820,067	3,207,069,587
27. Capital (Page 3, Lines 29 and 30)					
28. Surplus (Page 3, Line 37)	26,979,255,992	24,327,413,335	18,892,910,171	15,609,786,669	15,705,216,653
Cash Flow (Page 5)					
29. Net Cash from Operations (Line 11)	12,161,258,957	2,405,359,974	8,877,238,998	6,432,561,571	8,311,620,508
Risk-Based Capital Analysis					
30. Total adjusted capital	32,791,384,879	28,592,313,587	24,515,204,471	19,875,551,909	17,427,690,776
31. Authorized control level risk - based capital	3,772,768,051	2,991,494,679	2,785,045,018	2,223,863,534	1,934,732,292
Percentage Distribution of Cash, Cash Equivalents and Invested Assets (Page 2, Col. 3) (Line No. /Page 2, Line 12, Col. 3) x 100.0					
32. Bonds (Line 1)	54.1	53.1	53.6	56.7	55.2
33. Stocks (Lines 2.1 and 2.2)	11.5	10.0	9.9	7.9	10.0
34. Mortgage loans on real estate (Lines 3.1 and 3.2)	11.5	12.1	14.4	13.8	13.8
35. Real estate (Lines 4.1, 4.2 and 4.3)	0.2	0.2	0.2	0.3	0.5
36. Cash, cash equivalents and short-term investments (Line 5)	2.6	2.7	2.0	2.5	2.2
37. Contract loans (Line 6)	7.0	7.2	7.7	8.1	8.1
38. Derivatives (Page 2, Line 7)	7.1	9.8	6.3	5.1	5.4
39. Other invested assets (Line 8)	5.5	4.4	4.7	5.0	4.7
40. Receivables for securities (Line 9)	0.6	0.7	1.1	0.5	0.1
41. Securities lending reinvested collateral assets (Line 10)					
42. Aggregate write-ins for invested assets (Line 11)					
43. Cash, cash equivalents and invested assets (Line 12)	100.0	100.0	100.0	100.0	100.0

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

FIVE-YEAR HISTORICAL DATA

(Continued)

	1 2021	2 2020	3 2019	4 2018	5 2017
Investments in Parent, Subsidiaries and Affiliates					
44. Affiliated bonds (Schedule D Summary, Line 12, Col. 1).....	6,548,332,993	6,311,833,947	6,499,768,623	7,526,017,124	7,024,093,120
45. Affiliated preferred stocks (Schedule D Summary, Line 18, Col. 1).....					
46. Affiliated common stocks (Schedule D Summary Line 24, Col. 1).....	24,287,466,580	19,571,821,118	16,713,885,643	12,013,931,427	14,002,443,719
47. Affiliated short-term investments (subtotal included in Schedule DA Verification, Col. 5, Line 10).....					
48. Affiliated mortgage loans on real estate.....					
49. All other affiliated.....	6,361,773,586	5,396,362,729	5,768,552,842	5,685,872,120	4,536,580,572
50. Total of above Lines 44 to 49.....	37,197,573,159	31,280,017,794	28,982,207,108	25,225,820,671	25,563,117,411
51. Total Investment in Parent included in Lines 44 to 49 above.....					
Total Nonadmitted and Admitted Assets					
52. Total nonadmitted assets (Page 2, Line 28, Col. 2).....	1,405,580,219	1,425,204,335	1,475,705,544	2,222,797,167	1,506,487,870
53. Total admitted assets (Page 2, Line 28, Col. 3).....	314,967,246,427	300,458,993,767	268,249,285,895	243,646,846,820	240,063,222,121
Investment Data					
54. Net investment income (Exhibit of Net Investment Income).....	8,695,509,359	8,641,485,657	7,682,463,670	7,709,838,336	6,427,963,676
55. Realized capital gains (losses) (Page 4, Line 34, Column 1).....	(534,360,828)	(586,175,280)	(36,723,981)	(1,044,256,266)	(422,051,259)
56. Unrealized capital gains (losses) (Page 4, Line 38, Column 1).....	3,365,774,080	1,421,779,174	3,433,085,448	1,778,861,989	367,766,370
57. Total of above Lines 54, 55 and 56.....	11,526,922,610	9,477,089,550	11,078,825,137	8,444,444,059	6,373,678,787
Benefits and Reserve Increases (Page 6)					
58. Total contract/certificate benefits - life (Lines 10, 11, 12, 13, 14 and 15, Col. 1 minus Lines 10, 11, 12, 13, 14 and 15, Cols. 6, 7 and 8).....	10,780,071,759	23,920,024,839	23,804,742,582	22,062,690,112	19,313,047,113
59. Total contract/certificate benefits - A & H (Lines 13 & 14, Col. 6).....	341,518,237	355,080,894	346,274,849	342,151,000	342,997,017
60. Increase in life reserves - other than group and annuities (Line 19, Col. 2).....	7,566,681,153	5,761,605,238	5,745,703,691	4,170,004,180	3,842,206,597
61. Increase in A & H reserves (Line 19, Col. 6).....	399,293,872	138,709,990	106,679,383	107,748,641	64,962,333
62. Dividends to policyholders and refunds to members (Line 30, Col. 1).....	1,808,135,960	1,697,380,640	1,671,109,490	1,695,253,440	1,569,130,529
Operating Percentages					
63. Insurance expense percent (Page 6, Col. 1, Lines 21, 22 & 23, less Line 6)/(Page 6, Col. 1, Line 1 plus Exhibit 7, Col. 2, Line 2) x 100.0.....	12.8	5.4	12.5	13.5	17.7
64. Lapse percent (ordinary only) [(Exhibit of Life Insurance, Col. 4, Lines 14 & 15) / 1/2 (Exhibit of Life Insurance, Col. 4, Lines 1 & 21)] x 100.0.....	2.4	2.2	3.9	4.2	4.1
65. A & H loss percent (Schedule H, Part 1, Lines 5 and 6, Col. 2).....	114.4	69.1	68.0	60.5	67.7
66. A & H cost containment percent (Schedule H, Pt. 1, Line 4, Col. 2).....	1.1	1.0	1.0	1.0	1.0
67. A & H expense percent excluding cost containment expenses (Schedule H, Pt. 1, Line 10, Col. 2).....	41.3	40.9	42.1	39.1	42.4
A & H Claim Reserve Adequacy					
68. Incurred losses on prior years' claims - group health (Schedule H, Part 3, Line 3.1 Col. 2).....					
69. Prior years' claim liability and reserve - group health (Schedule H, Part 3, Line 3.2 Col. 2).....	86,250				
70. Incurred losses on prior years' claims-health other than group (Schedule H, Part 3, Line 3.1 Col. 1 less Col. 2).....	1,948,913,421	1,949,200,647	1,960,252,474	1,974,533,835	1,994,460,505
71. Prior years' claim liability and reserve-health other than group (Schedule H, Part 3, Line 3.2 Col. 1 less Col. 2).....	1,859,666,837	1,853,614,223	1,874,495,751	1,877,320,923	1,918,454,996
Net Gains From Operations After Dividends to Policyholders/Members' Refunds and Federal Income Taxes by Lines of Business (Page 6.x, Line 33)					
72. Industrial life (Page 6.1, Col. 2).....					
73. Ordinary - life (Page 6.1, Col. 1 less Cols. 2, 10 and 12).....	(253,847,188)	(360,289,994)	(400,777,170)	(414,680,265)	(195,046,499)
74. Ordinary - individual annuities (Page 6, Col. 4).....	341,338,709	220,450,199	298,860,020	(155,641,446)	229,760,994
75. Ordinary-supplementary contracts.....	XXX	XXX	XXX	73,580,641	30,733,793
76. Credit life (Page 6.1, Col. 10 plus Page 6.2, Col. 7).....					
77. Group life (Page 6.2, Col. 1 Less Cols. 7 and 9).....	42,105,612	45,025,997	18,789,222	235,476,177	116,383,212
78. Group annuities (Page 6, Col. 5).....	276,407,769	788,009,458	432,070,442	409,759,021	203,701,817
79. A & H-group (Page 6.5, Col. 3).....				1,528,002	762,561
80. A & H-credit (Page 6.5, Col. 10).....					
81. A & H-other (Page 6.5, Col. 1 less Cols. 3 and 10).....	(88,050,894)	108,890,235	112,027,981	72,886,996	87,831,777
82. Aggregate of all other lines of business (Page 6, Col. 8).....					
83. Fraternal (Page 6, Col. 7).....					
84. Total (Page 6, Col. 1).....	317,954,008	802,085,911	460,970,495	222,909,126	474,127,656

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



ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

DIRECT BUSINESS IN THE STATE OF Grand Total

DURING THE YEAR 2021

NAIC Group Code 0435

LIFE INSURANCE

NAIC Company Code 65935

DIRECT PREMIUMS AND ANNUITY CONSIDERATIONS	1	2	3	4	5
	Ordinary	Credit Life (Group and Individual)	Group	Industrial	Total
1. Life insurance	9,695,047,068		132,177,369		9,827,224,437
2. Annuity considerations	6,097,835,416		4,387,453,675		10,485,289,091
3. Deposit-type contract funds	369,229,820	XXX	5,876,366,638	XXX	6,245,596,458
4. Other considerations			8,127,282,223		8,127,282,223
5. Totals (Sum of Lines 1 to 4)	16,162,112,304		18,523,279,905		34,685,392,209
DIRECT DIVIDENDS TO POLICYHOLDERS/REFUNDS TO MEMBERS					
Life insurance:					
6.1 Paid in cash or left on deposit	115,181,095				115,181,095
6.2 Applied to pay renewal premiums	321,583,127				321,583,127
6.3 Applied to provide paid-up additions or shorten the endowment or premium-paying period	1,451,099,481				1,451,099,481
6.4 Other					
6.5 Totals (Sum of Lines 6.1 to 6.4)	1,887,863,703				1,887,863,703
Annuities:					
7.1 Paid in cash or left on deposit	46,282				46,282
7.2 Applied to provide paid-up annuities	840,509				840,509
7.3 Other					
7.4 Totals (Sum of Lines 7.1 to 7.3)	886,791				886,791
8. Grand Totals (Lines 6.5 plus 7.4)	1,888,750,494				1,888,750,494
DIRECT CLAIMS AND BENEFITS PAID					
9. Death benefits	3,113,380,362		132,263,587		3,245,643,949
10. Matured endowments	13,888,333				13,888,333
11. Annuity benefits	838,513,593		1,778,806,464		2,617,320,057
12. Surrender values and withdrawals for life contracts	4,379,289,594		15,017,105,054		19,396,394,648
13. Aggregate write-ins for miscellaneous direct claims and benefits paid					
14. All other benefits, except accident and health	28,878,433		194,898		29,073,331
15. Totals	8,373,950,315		16,928,370,003		25,302,320,318
DETAILS OF WRITE-INS					
1301.					
1302.					
1303.					
1398. Summary of Line 13 from overflow page					
1399. Totals (Lines 1301 thru 1303 plus 1398) (Line 13 above)					

DIRECT DEATH BENEFITS AND MATURED ENDOWMENTS INCURRED	Ordinary		Credit Life (Group and Individual)		Group		Industrial		Total	
	1	2	3	4	5	6	7	8	9	10
	No. of Pols. & Certifs.	Amount	No. of Ind.Pols. & Gr. Certifs.	Amount	No. of Certifs.	Amount	No. of Pols. & Certifs.	Amount	No. of Pols. & Certifs.	Amount
16. Unpaid December 31, prior year	5,310	650,066,640			60	106,631,326			5,370	756,697,965
17. Incurred during current year	30,333	3,169,229,410			416	178,856,482			30,749	3,348,085,892
Settled during current year:										
18.1 By payment in full	31,252	3,155,678,365			412	132,458,486			31,664	3,288,136,851
18.2 By payment on compromised claims										
18.3 Totals paid	31,252	3,155,678,365			412	132,458,486			31,664	3,288,136,851
18.4 Reduction by compromise										
18.5 Amount rejected										
18.6 Total settlements	31,252	3,155,678,365			412	132,458,486			31,664	3,288,136,851
19. Unpaid Dec. 31, current year (16+17-18.6)	4,391	663,617,685			64	153,029,321			4,455	816,647,006
POLICY EXHIBIT						No. of Policies				
20. In force December 31, prior year	1,852,816	770,222,322,792	(a)		2,111	25,760,926,769			1,854,927	795,983,249,561
21. Issued during year	138,979	94,397,808,522			421	3,232,423,599			139,400	97,630,232,121
22. Other changes to in force (Net)	(68,288)	(31,616,841,114)			(37)	(2,131,294,304)			(68,325)	(33,748,135,417)
23. In force December 31 of current year	1,923,507	833,003,290,200	(a)		2,495	26,862,056,064			1,926,002	859,865,346,264

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

ACCIDENT AND HEALTH INSURANCE

	1	2	3	4	5
	Direct Premiums	Direct Premiums Earned	Policyholder Dividends Paid, Refunds to Members or Credited on Direct Business	Direct Losses Paid	Direct Losses Incurred
24. Group Policies (b)	489,274	489,335			
24.1 Federal Employees Health Benefits Plan premium (b)					
24.2 Credit (Group and Individual)					
24.3 Collectively renewable policies/certificates (b)					
24.4 Medicare Title XVIII exempt from state taxes or fees Other Individual Policies:					
25.1 Non-cancelable (b)	506,862,443	516,530,870	26,656,992	339,859,190	330,879,759
25.2 Guaranteed renewable (b)	245,074,638	246,920,542		69,299,809	133,406,388
25.3 Non-renewable for stated reasons only (b)	12,789,160	12,535,791	152,922	2,875,683	3,542,280
25.4 Other accident only					
25.5 All other (b)					
25.6 Totals (sum of Lines 25.1 to 25.5)	764,726,241	775,987,203	26,809,914	412,034,682	467,828,427
26. Totals (Lines 24 + 24.1 + 24.2 + 24.3 + 24.4 + 25.6)	765,215,515	776,476,538	26,809,914	412,034,682	467,828,427

(b) For health business on indicated lines report: Number of persons insured under PPO managed care products0 and number of persons
 insured under indemnity only products0

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT OF LIFE INSURANCE

(\$000 Omitted for Amounts of Life Insurance)

	Industrial		Ordinary		Credit Life (Group and Individual)		Group			10 Total Amount of Insurance
	1	2	3	4	5	6	Number of		9	
	Number of Policies	Amount of Insurance	Number of Policies	Amount of Insurance	Number of Individual Policies and Group Certificates	Amount of Insurance	7 Policies	8 Certificates	Amount of Insurance	
1. In force end of prior year			1,864,720	774,376,100			2,111	91,059	27,991,393	802,367,494
2. Issued during year			138,979	94,397,809			421	28,804	3,232,424	97,630,233
3. Reinsurance assumed				658						658
4. Revived during year			19	8,100				79	16,189	24,289
5. Increased during year (net)			9,718	1,105,519			19	273	915,955	2,021,474
6. Subtotals, Lines 2 to 5			148,716	95,512,086			440	29,156	4,164,568	99,676,654
7. Additions by dividends during year	XXX		XXX	1,823,921	XXX		XXX	XXX	5,065	1,828,986
8. Aggregate write-ins for increases										
9. Totals (Lines 1 and 6 to 8)			2,013,436	871,712,107			2,551	120,215	32,161,026	903,873,134
Deductions during year:										
10. Death			21,646	3,043,438			XXX	304	173,558	3,216,996
11. Maturity			348	11,520			XXX			11,520
12. Disability							XXX			
13. Expiry			4,185	796,763						796,763
14. Surrender			25,235	8,769,381			5	3,683	390,703	9,160,084
15. Lapse			13,807	10,180,504			5	12,602	2,440,720	12,621,224
16. Conversion			1,281	758,708			XXX	XXX	XXX	758,708
17. Decreased (net)			11,523	10,994,067			46		63,522	11,057,589
18. Reinsurance			1,420	597,985				33	17,462	615,447
19. Aggregate write-ins for decreases										
20. Totals (Lines 10 to 19)			79,445	35,152,366			56	16,622	3,085,965	38,238,331
21. In force end of year (b) (Line 9 minus Line 20)			1,933,991	836,559,741			2,495	103,593	29,075,061	865,634,803
22. Reinsurance ceded end of year	XXX		XXX	600,387,436	XXX		XXX	XXX	6,271,452	606,658,888
23. Line 21 minus Line 22	XXX		XXX	236,172,305	XXX	(a)	XXX	XXX	22,803,609	258,975,915
DETAILS OF WRITE-INS										
0801.										
0802.										
0803.										
0898. Summary of remaining write-ins for Line 8 from overflow page										
0899. TOTALS (Lines 0801 thru 0803 plus 0898) (Line 8 above)										
1901.										
1902.										
1903.										
1998. Summary of remaining write-ins for Line 19 from overflow page										
1999. TOTALS (Lines 1901 thru 1903 plus 1998) (Line 19 above)										

Life, Accident and Health Companies Only:

(a) Group \$; Individual \$

Fraternal Benefit Societies Only:

(b) Paid-up insurance included in the final totals of Line 21 (including additions to certificates) number of certificates , Amount \$

Additional accidental death benefits included in life certificates were in amount \$, Does the society collect any contributions from members for general expenses of the society under fully paid-up certificates? Yes [] No []

If not, how are such expenses met?

.....

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

EXHIBIT OF LIFE INSURANCE

(\$000 Omitted for Amounts of Life Insurance) (Continued)
ADDITIONAL INFORMATION ON INSURANCE IN FORCE END OF YEAR

	Industrial		Ordinary	
	1 Number of Policies	2 Amount of Insurance	3 Number of Policies	4 Amount of Insurance
24. Additions by dividends	XXX		XXX	30,283,528
25. Other paid-up insurance			121,498	22,572,696
26. Debit ordinary insurance	XXX	XXX		

ADDITIONAL INFORMATION ON ORDINARY INSURANCE

Term Insurance Excluding Extended Term Insurance	Issued During Year (Included in Line 2)		In Force End of Year (Included in Line 21)	
	1 Number of Policies	2 Amount of Insurance	3 Number of Policies	4 Amount of Insurance
27. Term policies - decreasing				
28. Term policies - other	52,583	50,245,668	499,011	387,471,491
29. Other term insurance - decreasing	XXX		XXX	
30. Other term insurance	XXX	603,870	XXX	11,414,978
31. Totals (Lines 27 to 30)	52,583	50,849,538	499,011	398,886,469
Reconciliation to Lines 2 and 21:				
32. Term additions	XXX	2,573,065	XXX	15,246,925
33. Totals, extended term insurance	XXX	XXX	5,490	949,087
34. Totals, whole life and endowment	86,396	40,975,205	1,429,490	421,477,259
35. Totals (Lines 31 to 34)	138,979	94,397,808	1,933,991	836,559,740

CLASSIFICATION OF AMOUNT OF INSURANCE BY PARTICIPATING STATUS

	Issued During Year (Included in Line 2)		In Force End of Year (Included in Line 21)	
	1 Non-Participating	2 Participating	3 Non-Participating	4 Participating
36. Industrial				
37. Ordinary	28,119,319	66,278,490	229,475,985	607,083,755
38. Credit Life (Group and Individual)				
39. Group	2,985,680	246,744	7,156,611	21,918,450
40. Totals (Lines 36 to 39)	31,104,999	66,525,234	236,632,596	629,002,205

ADDITIONAL INFORMATION ON CREDIT LIFE AND GROUP INSURANCE

	Credit Life		Group	
	1 Number of Individual Policies and Group Certificates	2 Amount of Insurance	3 Number of Certificates	4 Amount of Insurance
41. Amount of insurance included in Line 2 ceded to other companies	XXX		XXX	568,938
42. Number in force end of year if the number under shared groups is counted on a pro-rata basis		XXX		XXX
43. Federal Employees' Group Life Insurance included in Line 21				
44. Servicemen's Group Life Insurance included in Line 21				
45. Group Permanent Insurance included in Line 21				

ADDITIONAL ACCIDENTAL DEATH BENEFITS

46. Amount of additional accidental death benefits in force end of year under ordinary policies	1,149,907
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BASES OF CALCULATION OF ORDINARY TERM INSURANCE

47. State basis of calculation of (47.1) decreasing term insurance contracts included in Family Income Mortgage Protection, etc., policies and riders and of (47.2) term insurance on wife and children under Family, Parent and Child Income Protection, etc., policies and riders included in the same	
47.1	
47.2	

NONE

POLICIES WITH DISABILITY PROVISIONS

Disability Provisions	Industrial		Ordinary		Credit		Group	
	1 Number of Policies	2 Amount of Insurance	3 Number of Policies	4 Amount of Insurance	5 Number of Policies	6 Amount of Insurance	7 Number of Certificates	8 Amount of Insurance
48. Waiver of Premium			624,576	231,443,789			24,554	3,269,760
49. Disability Income								
50. Extended Benefits			XXX	XXX				
51. Other								
52. Total		(a)	624,576	(a) 231,443,789		(a)	24,554	(a) 3,269,760

(a) See the Annual Audited Financial Reports section of the annual statement instructions

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
EXHIBIT OF NUMBER OF POLICIES, CONTRACTS, CERTIFICATES, INCOME PAYABLE AND ACCOUNT VALUES IN FORCE FOR SUPPLEMENTARY CONTRACTS, ANNUITIES, ACCIDENT & HEALTH AND OTHER POLICIES

SUPPLEMENTARY CONTRACTS

	Ordinary		Group	
	1 Involving Life Contingencies	2 Not Involving Life Contingencies	3 Involving Life Contingencies	4 Not Involving Life Contingencies
1. In force end of prior year	5,254	7,112	1	
2. Issued during year	690	380		
3. Reinsurance assumed				
4. Increased during year (net)				
5. Total (Lines 1 to 4)	5,944	7,492	1	
Deductions during year:				
6. Decreased (net)	574	495		
7. Reinsurance ceded				
8. Totals (Lines 6 and 7)	574	495		
9. In force end of year (line 5 minus line 8)	5,370	6,997	1	
10. Amount on deposit	270,206,870	(a) 669,199,924		(a)
11. Income now payable	5,370	1,752		
12. Amount of income payable	(a) 32,890,417	(a) 10,950,348	(a)	(a)

ANNUITIES

	Ordinary		Group	
	1 Immediate	2 Deferred	3 Contracts	4 Certificates
1. In force end of prior year	46,350	203,429	12,835	2,282,585
2. Issued during year	3,197	28,843	1,153	83,017
3. Reinsurance assumed				
4. Increased during year (net)			5,907	162,879
5. Totals (Lines 1 to 4)	49,547	232,272	19,895	2,528,481
Deductions during year:				
6. Decreased (net)	2,238	15,960	3,378	541,323
7. Reinsurance ceded				
8. Totals (Lines 6 and 7)	2,238	15,960	3,378	541,323
9. In force end of year (line 5 minus line 8)	47,309	216,312	16,517	1,987,158
Income now payable:				
10. Amount of income payable	(a) 794,965,993	XXX	XXX	(a) 1,419,015,852
Deferred fully paid:				
11. Account balance	XXX	(a) 18,602,895,167	XXX	(a) 24,415,652,419
Deferred not fully paid:				
12. Account balance	XXX	(a) 14,500,883,246	XXX	(a) 5,463,319,371

ACCIDENT AND HEALTH INSURANCE

	Group		Credit		Other	
	1 Certificates	2 Premiums in Force	3 Policies	4 Premiums in Force	5 Policies	6 Premiums in Force
1. In force end of prior year	1,425	473,674			332,129	781,363,117
2. Issued during year	916	176,748			13,375	16,531,150
3. Reinsurance assumed						
4. Increased during year (net)		XXX		XXX		XXX
5. Totals (Lines 1 to 4)	2,341	XXX		XXX	345,504	XXX
Deductions during year:						
6. Conversions		XXX	XXX	XXX	XXX	XXX
7. Decreased (net)	441	XXX		XXX	20,355	XXX
8. Reinsurance ceded		XXX		XXX		XXX
9. Totals (Lines 6 to 8)	441	XXX		XXX	20,355	XXX
10. In force end of year (line 5 minus line 9)	1,900	(a) 650,422		(a)	325,149	(a) 797,894,267

DEPOSIT FUNDS AND DIVIDEND ACCUMULATIONS

	1	2
	Deposit Funds Contracts	Dividend Accumulations Contracts
1. In force end of prior year	45,436	78,623
2. Issued during year	225	318
3. Reinsurance assumed		
4. Increased during year (net)		
5. Totals (Lines 1 to 4)	45,661	78,941
Deductions During Year:		
6. Decreased (net)	2,008	7,507
7. Reinsurance ceded		
8. Totals (Lines 6 and 7)	2,008	7,507
9. In force end of year (line 5 minus line 8)	43,653	71,434
10. Amount of account balance	(a) 3,349,372,634	(a) 472,184,767

(a) See the Annual Audited Financial Reports section of the annual statement instructions.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
FORM FOR CALCULATING THE INTEREST MAINTENANCE RESERVE

INTEREST MAINTENANCE RESERVE

	1 Amount
1. Reserve as of December 31, Prior Year	2,084,357,421
2. Current year's realized pre-tax capital gains/(losses) of \$ (337,058,721) transferred into the reserve net of taxes of \$ 45,031,792	(382,090,513)
3. Adjustment for current year's liability gains/(losses) released from the reserve	
4. Balance before reduction for amount transferred to Summary of Operations (Line 1 + Line 2 + Line 3)	1,702,266,907
5. Current year's amortization released to Summary of Operations (Amortization, Line 1, Column 4)	149,913,179
6. Reserve as of December 31, current year (Line 4 minus Line 5)	1,552,353,728

AMORTIZATION

	1	2	3	4
Year of Amortization	Reserve as of December 31, Prior Year	Current Year's Realized Capital Gains/(Losses) Transferred into the Reserve Net of Taxes	Adjustment for Current Year's Liability Gains/(Losses) Released From the Reserve	Balance Before Reduction for Current Year's Amortization (Cols. 1 + 2 + 3)
1. 2021	140,935,360	8,977,819		149,913,179
2. 2022	117,359,414	22,222,407		139,581,821
3. 2023	90,449,241	10,736,605		101,185,845
4. 2024	86,594,766	6,092,522		92,687,287
5. 2025	70,886,895	1,011,858		71,898,754
6. 2026	77,319,426	(4,262,285)		73,057,141
7. 2027	77,614,679	(7,234,615)		70,380,065
8. 2028	73,527,896	(8,792,878)		64,735,018
9. 2029	76,926,687	(10,976,196)		65,950,491
10. 2030	69,616,689	(12,352,170)		57,264,519
11. 2031	78,856,300	(13,620,385)		65,235,915
12. 2032	81,542,688	(15,371,990)		66,170,698
13. 2033	81,915,243	(16,088,409)		65,826,834
14. 2034	85,698,341	(16,943,467)		68,754,874
15. 2035	88,605,910	(17,236,467)		71,369,442
16. 2036	92,249,778	(18,438,066)		73,811,713
17. 2037	95,061,912	(19,602,099)		75,459,813
18. 2038	93,471,517	(20,951,542)		72,519,975
19. 2039	96,512,682	(22,108,649)		74,404,033
20. 2040	92,477,151	(24,143,715)		68,333,436
21. 2041	86,046,157	(25,023,784)		61,022,372
22. 2042	66,584,510	(25,818,020)		40,766,490
23. 2043	53,283,916	(24,793,926)		28,489,990
24. 2044	42,457,328	(24,470,529)		17,986,799
25. 2045	27,149,791	(23,115,336)		4,034,455
26. 2046	16,705,395	(22,999,840)		(6,294,445)
27. 2047	14,318,297	(19,989,149)		(5,670,853)
28. 2048	5,913,833	(15,900,460)		(9,986,627)
29. 2049	3,859,954	(11,357,471)		(7,497,517)
30. 2050	415,667	(7,268,782)		(6,853,115)
31. 2051 and Later		(2,271,494)		(2,271,494)
32. Total (Lines 1 to 31)	2,084,357,420	(382,090,513)		1,702,266,907

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

	Default Component			Equity Component			7 Total Amount (Cols. 3 + 6)
	1 Other Than Mortgage Loans	2 Mortgage Loans	3 Total (Cols. 1 + 2)	4 Common Stock	5 Real Estate and Other Invested Assets	6 Total (Cols. 4 + 5)	
1. Reserve as of December 31, prior year	1,595,805,222	300,911,204	1,896,716,426	2,093,800,805	1,214,530,999	3,308,331,804	5,205,048,230
2. Realized capital gains/(losses) net of taxes - General Account	(75,978,499)	(5,488,301)	(81,466,800)	123,994,861	(306,857,485)	(182,862,624)	(264,329,423)
3. Realized capital gains/(losses) net of taxes - Separate Accounts							
4. Unrealized capital gains/(losses) net of deferred taxes - General Account	481,327,577	(62,841,536)	418,486,041	676,645,482	826,333,101	1,502,978,583	1,921,464,624
5. Unrealized capital gains/(losses) net of deferred taxes - Separate Accounts							
6. Capital gains credited/(losses charged) to contract benefits, payments or reserves	(3,516)	(166,598)	(170,114)	30,486	25,263	55,749	(114,365)
7. Basic contribution	453,308,506	66,235,053	519,543,559	12,403,301	15,081,770	27,485,071	547,028,630
8. Accumulated balances (Lines 1 through 5 - 6 + 7)	2,454,466,322	298,983,019	2,753,449,341	2,906,813,963	1,749,063,122	4,655,877,085	7,409,326,426
9. Maximum reserve	2,006,102,068	286,550,441	2,292,652,510	2,356,304,464	1,765,227,361	4,121,531,825	6,414,184,335
10. Reserve objective	1,303,072,905	221,869,505	1,524,942,410	2,331,238,752	1,748,060,890	4,079,299,642	5,604,242,051
11. 20% of (Line 10 - Line 8)	(230,278,683)	(15,422,703)	(245,701,386)	(115,115,042)	(200,446)	(115,315,489)	(361,016,875)
12. Balance before transfers (Lines 8 + 11)	2,224,187,638	283,560,316	2,507,747,954	2,791,698,921	1,748,862,675	4,540,561,596	7,048,309,551
13. Transfers	(2,990,125)	2,990,125		(16,364,686)	16,364,686		
14. Voluntary contribution							
15. Adjustment down to maximum/up to zero	(215,095,445)		(215,095,445)	(419,029,771)		(419,029,771)	(634,125,216)
16. Reserve as of December 31, current year (Lines 12 + 13 + 14 + 15)	2,006,102,068	286,550,441	2,292,652,509	2,356,304,464	1,765,227,361	4,121,531,825	6,414,184,335

ASSET VALUATION RESERVE

BASIC CONTRIBUTION, RESERVE OBJECTIVE AND MAXIMUM RESERVE CALCULATIONS

DEFAULT COMPONENT

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
LONG-TERM BONDS												
1.		Exempt Obligations	4,101,899,212	XXX	XXX	4,101,899,212	0.0000		0.0000		0.0000	
2.1	1	NAIC Designation Category 1.A	10,566,848,763	XXX	XXX	10,566,848,763	0.0005	5,283,424	0.0016	16,906,958	0.0033	34,870,601
2.2	1	NAIC Designation Category 1.B	1,820,758,145	XXX	XXX	1,820,758,145	0.0005	910,379	0.0016	2,913,213	0.0033	6,008,502
2.3	1	NAIC Designation Category 1.C	5,730,352,943	XXX	XXX	5,730,352,943	0.0005	2,865,176	0.0016	9,168,565	0.0033	18,910,165
2.4	1	NAIC Designation Category 1.D	5,650,320,043	XXX	XXX	5,650,320,043	0.0005	2,825,160	0.0016	9,040,512	0.0033	18,646,056
2.5	1	NAIC Designation Category 1.E	5,206,132,872	XXX	XXX	5,206,132,872	0.0005	2,603,066	0.0016	8,329,813	0.0033	17,180,238
2.6	1	NAIC Designation Category 1.F	15,378,171,474	XXX	XXX	15,378,171,474	0.0005	7,689,086	0.0016	24,605,074	0.0033	50,747,966
2.7	1	NAIC Designation Category 1.G	14,262,215,221	XXX	XXX	14,262,215,221	0.0005	7,131,108	0.0016	22,819,544	0.0033	47,065,310
2.8		Subtotal NAIC 1 (2.1+2.2+2.3+2.4+2.5+2.6+2.7)	58,614,799,462	XXX	XXX	58,614,799,462	XXX	29,307,400	XXX	93,783,679	XXX	193,428,838
3.1	2	NAIC Designation Category 2.A	13,321,752,592	XXX	XXX	13,321,752,592	0.0021	27,975,680	0.0064	85,259,217	0.0106	141,210,577
3.2	2	NAIC Designation Category 2.B	18,927,156,683	XXX	XXX	18,927,156,683	0.0021	39,747,029	0.0064	121,133,803	0.0106	200,627,861
3.3	2	NAIC Designation Category 2.C	17,181,232,375	XXX	XXX	17,181,232,375	0.0021	36,080,588	0.0064	109,959,887	0.0106	182,121,063
3.4		Subtotal NAIC 2 (3.1+3.2+3.3)	49,430,141,650	XXX	XXX	49,430,141,650	XXX	103,803,297	XXX	316,352,907	XXX	523,959,501
4.1	3	NAIC Designation Category 3.A	2,071,993,029	XXX	XXX	2,071,993,029	0.0099	20,512,731	0.0263	54,493,417	0.0376	77,906,938
4.2	3	NAIC Designation Category 3.B	1,857,900,113	XXX	XXX	1,857,900,113	0.0099	18,393,211	0.0263	48,862,773	0.0376	69,857,044
4.3	3	NAIC Designation Category 3.C	1,470,911,712	XXX	XXX	1,470,911,712	0.0099	14,562,026	0.0263	38,684,978	0.0376	55,306,280
4.4		Subtotal NAIC 3 (4.1+4.2+4.3)	5,400,804,854	XXX	XXX	5,400,804,854	XXX	53,467,968	XXX	142,041,168	XXX	203,070,263
5.1	4	NAIC Designation Category 4.A	642,782,971	XXX	XXX	642,782,971	0.0245	15,748,183	0.0572	36,767,186	0.0817	52,515,369
5.2	4	NAIC Designation Category 4.B	1,157,446,892	XXX	XXX	1,157,446,892	0.0245	28,357,449	0.0572	66,205,962	0.0817	94,563,411
5.3	4	NAIC Designation Category 4.C	1,609,090,506	XXX	XXX	1,609,090,506	0.0245	39,422,717	0.0572	92,039,977	0.0817	131,462,694
5.4		Subtotal NAIC 4 (5.1+5.2+5.3)	3,409,320,369	XXX	XXX	3,409,320,369	XXX	83,528,349	XXX	195,013,125	XXX	278,541,474
6.1	5	NAIC Designation Category 5.A	514,567,438	XXX	XXX	514,567,438	0.0630	32,417,749	0.1128	58,043,207	0.1880	96,738,678
6.2	5	NAIC Designation Category 5.B	1,867,760,832	XXX	XXX	1,867,760,832	0.0630	117,668,932	0.1128	210,683,422	0.1880	351,139,036
6.3	5	NAIC Designation Category 5.C	130,853,908	XXX	XXX	130,853,908	0.0630	8,243,796	0.1128	14,760,321	0.1880	24,600,535
6.4		Subtotal NAIC 5 (6.1+6.2+6.3)	2,513,182,177	XXX	XXX	2,513,182,177	XXX	158,330,477	XXX	283,486,950	XXX	472,478,249
7.	6	NAIC 6	816,454,296	XXX	XXX	816,454,296	0.0000		0.2370	193,499,668	0.2370	193,499,668
8.		Total Unrated Multi-class Securities Acquired by Conversion		XXX	XXX		XXX		XXX		XXX	
9.		Total Long-Term Bonds (1+2.8+3.4+4.4+5.4+6.4+7+8)	124,286,602,020	XXX	XXX	124,286,602,020	XXX	428,437,491	XXX	1,224,177,496	XXX	1,864,977,994
PREFERRED STOCKS												
10.	1	Highest Quality	284,795,397	XXX	XXX	284,795,397	0.0005	142,398	0.0016	455,673	0.0033	939,825
11.	2	High Quality	76,152,686	XXX	XXX	76,152,686	0.0021	159,921	0.0064	487,377	0.0106	807,218
12.	3	Medium Quality	152,693,064	XXX	XXX	152,693,064	0.0099	1,511,661	0.0263	4,015,828	0.0376	5,741,259
13.	4	Low Quality	4,366,000	XXX	XXX	4,366,000	0.0245	106,967	0.0572	249,735	0.0817	356,702
14.	5	Lower Quality	21,337,275	XXX	XXX	21,337,275	0.0630	1,344,248	0.1128	2,406,845	0.1880	4,011,408
15.	6	In or Near Default	15,320,585	XXX	XXX	15,320,585	0.0000		0.2370	3,630,979	0.2370	3,630,979
16.		Affiliated Life with AVR		XXX	XXX		0.0000		0.0000		0.0000	
17.		Total Preferred Stocks (Sum of Lines 10 through 16)	554,665,007	XXX	XXX	554,665,007	XXX	3,265,195	XXX	11,246,436	XXX	15,487,391

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

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols.4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
SHORT-TERM BONDS												
18.		Exempt Obligations		XXX	XXX		0.0000		0.0000		0.0000	
19.1	1	NAIC Designation Category 1.A		XXX	XXX		0.0005		0.0016		0.0033	
19.2	1	NAIC Designation Category 1.B	600,000,000	XXX	XXX	600,000,000	0.0005	300,000	0.0016	960,000	0.0033	1,980,000
19.3	1	NAIC Designation Category 1.C		XXX	XXX		0.0005		0.0016		0.0033	
19.4	1	NAIC Designation Category 1.D	1,075,205,821	XXX	XXX	1,075,205,821	0.0005	537,603	0.0016	1,720,329	0.0033	3,548,179
19.5	1	NAIC Designation Category 1.E	47,000,000	XXX	XXX	47,000,000	0.0005	23,500	0.0016	75,200	0.0033	155,100
19.6	1	NAIC Designation Category 1.F	38,866,667	XXX	XXX	38,866,667	0.0005	19,433	0.0016	62,187	0.0033	128,260
19.7	1	NAIC Designation Category 1.G		XXX	XXX		0.0005		0.0016		0.0033	
19.8		Subtotal NAIC 1 (19.1+19.2+19.3+19.4+19.5+19.6+19.7)	1,761,072,488	XXX	XXX	1,761,072,488	XXX	880,536	XXX	2,817,716	XXX	5,811,539
20.1	2	NAIC Designation Category 2.A	916,720,699	XXX	XXX	916,720,699	0.0021	1,925,113	0.0064	5,867,012	0.0106	9,717,239
20.2	2	NAIC Designation Category 2.B		XXX	XXX		0.0021		0.0064		0.0106	
20.3	2	NAIC Designation Category 2.C		XXX	XXX		0.0021		0.0064		0.0106	
20.4		Subtotal NAIC 2 (20.1+20.2+20.3)	916,720,699	XXX	XXX	916,720,699	XXX	1,925,113	XXX	5,867,012	XXX	9,717,239
21.1	3	NAIC Designation Category 3.A		XXX	XXX		0.0099		0.0263		0.0376	
21.2	3	NAIC Designation Category 3.B	33,875,522	XXX	XXX	33,875,522	0.0099	335,368	0.0263	890,926	0.0376	1,273,720
21.3	3	NAIC Designation Category 3.C		XXX	XXX		0.0099		0.0263		0.0376	
21.4		Subtotal NAIC 3 (21.1+21.2+21.3)	33,875,522	XXX	XXX	33,875,522	XXX	335,368	XXX	890,926	XXX	1,273,720
22.1	4	NAIC Designation Category 4.A		XXX	XXX		0.0245		0.0572		0.0817	
22.2	4	NAIC Designation Category 4.B		XXX	XXX		0.0245		0.0572		0.0817	
22.3	4	NAIC Designation Category 4.C	2,391,113	XXX	XXX	2,391,113	0.0245	58,582	0.0572	136,772	0.0817	195,354
22.4		Subtotal NAIC 4 (22.1+22.2+22.3)	2,391,113	XXX	XXX	2,391,113	XXX	58,582	XXX	136,772	XXX	195,354
23.1	5	NAIC Designation Category 5.A		XXX	XXX		0.0630		0.1128		0.1880	
23.2	5	NAIC Designation Category 5.B		XXX	XXX		0.0630		0.1128		0.1880	
23.3	5	NAIC Designation Category 5.C		XXX	XXX		0.0630		0.1128		0.1880	
23.4		Subtotal NAIC 5 (23.1+23.2+23.3)		XXX	XXX		XXX		XXX		XXX	
24.	6	NAIC 6	1,390,637	XXX	XXX	1,390,637	0.0000		0.2370	329,581	0.2370	329,581
25.		Total Short-Term Bonds (18+19.8+20.4+21.4+22.4+23.4+24)	2,715,450,459	XXX	XXX	2,715,450,459	XXX	3,199,600	XXX	10,042,007	XXX	17,327,433
DERIVATIVE INSTRUMENTS												
26.		Exchange Traded		XXX	XXX		0.0005		0.0016		0.0033	
27.	1	Highest Quality	535,497,991	XXX	XXX	535,497,991	0.0005	267,749	0.0016	856,797	0.0033	1,767,143
28.	2	High Quality	43,544,632	XXX	XXX	43,544,632	0.0021	91,444	0.0064	278,686	0.0106	461,573
29.	3	Medium Quality		XXX	XXX		0.0099		0.0263		0.0376	
30.	4	Low Quality		XXX	XXX		0.0245		0.0572		0.0817	
31.	5	Lower Quality		XXX	XXX		0.0630		0.1128		0.1880	
32.	6	In or Near Default		XXX	XXX		0.0000		0.2370		0.2370	
33.		Total Derivative Instruments	579,042,623	XXX	XXX	579,042,623	XXX	359,193	XXX	1,135,482	XXX	2,228,716
34.		Total (Lines 9 + 17 + 25 + 33)	128,135,760,109	XXX	XXX	128,135,760,109	XXX	435,261,479	XXX	1,246,601,422	XXX	1,900,021,534

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

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols.4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
MORTGAGE LOANS												
In Good Standing:												
35.		Farm Mortgages - CM1 - Highest Quality			XXX		0.0011		0.0057		0.0074	
36.		Farm Mortgages - CM2 - High Quality			XXX		0.0040		0.0114		0.0149	
37.		Farm Mortgages - CM3 - Medium Quality			XXX		0.0069		0.0200		0.0257	
38.		Farm Mortgages - CM4 - Low Medium Quality			XXX		0.0120		0.0343		0.0428	
39.		Farm Mortgages - CM5 - Low Quality			XXX		0.0183		0.0486		0.0628	
40.		Residential Mortgages - Insured or Guaranteed	4,106,934,716		XXX	4,106,934,716	0.0003	1,232,080	0.0007	2,874,854	0.0011	4,517,628
41.		Residential Mortgages - All Other	701,572,479		XXX	701,572,479	0.0015	1,052,359	0.0034	2,385,346	0.0046	3,227,233
42.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0003		0.0007		0.0011	
43.		Commercial Mortgages - All Other - CM1 - Highest Quality	9,511,180,635		XXX	9,511,180,635	0.0011	10,462,299	0.0057	54,213,730	0.0074	70,382,737
44.		Commercial Mortgages - All Other - CM2 - High Quality	10,258,658,536		XXX	10,258,658,536	0.0040	41,034,634	0.0114	116,948,707	0.0149	152,854,012
45.		Commercial Mortgages - All Other - CM3 - Medium Quality	1,600,668,477		XXX	1,600,668,477	0.0069	11,044,612	0.0200	32,013,370	0.0257	41,137,180
46.		Commercial Mortgages - All Other - CM4 - Low Medium Quality	117,344,606		XXX	117,344,606	0.0120	1,408,135	0.0343	4,024,920	0.0428	5,022,349
47.		Commercial Mortgages - All Other - CM5 - Low Quality	51,000		XXX	51,000	0.0183	933	0.0486	2,479	0.0628	3,203
Overdue, Not in Process:												
48.		Farm Mortgages			XXX		0.0480		0.0868		0.1371	
49.		Residential Mortgages - Insured or Guaranteed			XXX		0.0006		0.0014		0.0023	
50.		Residential Mortgages - All Other			XXX		0.0029		0.0066		0.0103	
51.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0006		0.0014		0.0023	
52.		Commercial Mortgages - All Other			XXX		0.0480		0.0868		0.1371	
In Process of Foreclosure:												
53.		Farm Mortgages			XXX		0.0000		0.1942		0.1942	
54.		Residential Mortgages - Insured or Guaranteed			XXX		0.0000		0.0046		0.0046	
55.		Residential Mortgages - All Other			XXX		0.0000		0.0149		0.0149	
56.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0000		0.0046		0.0046	
57.		Commercial Mortgages - All Other	48,435,114		XXX	48,435,114	0.0000		0.1942	9,406,099	0.1942	9,406,099
58.		Total Schedule B Mortgages (Sum of Lines 35 through 57)	26,344,845,563		XXX	26,344,845,563	XXX	66,235,053	XXX	221,869,505	XXX	286,550,441
59.		Schedule DA Mortgages			XXX		0.0034		0.0114		0.0149	
60.		Total Mortgage Loans on Real Estate (Lines 58 + 59)	26,344,845,563		XXX	26,344,845,563	XXX	66,235,053	XXX	221,869,505	XXX	286,550,441

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

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
COMMON STOCK												
1.		Unaffiliated - Public	522,597,151	XXX	XXX	522,597,151	0.0000		0.2431 (a)	127,043,367	0.2431 (a)	127,043,367
2.		Unaffiliated - Private	656,253,604	XXX	XXX	656,253,604	0.0000		0.1945	127,641,326	0.1945	127,641,326
3.		Federal Home Loan Bank	98,620,000	XXX	XXX	98,620,000	0.0000		0.0061	601,582	0.0097	956,614
4.		Affiliated - Life with AVR	4,513,022,131	XXX	XXX	4,513,022,131	0.0000		0.0000			
Affiliated - Investment Subsidiary:												
5.		Fixed Income - Exempt Obligations	582,127,676			582,127,676	XXX		XXX		XXX	
6.		Fixed Income - Highest Quality	2,951,589,791			2,951,589,791	XXX	1,475,795	XXX	4,722,544	XXX	9,740,246
7.		Fixed Income - High Quality	4,038,468,491			4,038,468,491	XXX	8,480,784	XXX	25,846,198	XXX	42,807,766
8.		Fixed Income - Medium Quality	116,865,343			116,865,343	XXX	1,156,967	XXX	3,073,559	XXX	4,394,137
9.		Fixed Income - Low Quality	27,123,330			27,123,330	XXX	664,522	XXX	1,551,455	XXX	2,215,976
10.		Fixed Income - Lower Quality	9,924,352			9,924,352	XXX	625,234	XXX	1,119,467	XXX	1,865,778
11.		Fixed Income - In/Near Default	20,047,974			20,047,974	XXX		XXX	4,751,370	XXX	4,751,370
12.		Unaffiliated Common Stock - Public					0.0000		0.1580 (a)		0.1580 (a)	
13.		Unaffiliated Common Stock - Private					0.0000		0.1945		0.1945	
14.		Real Estate					(b)		(b)		(b)	
15.		Affiliated - Certain Other (See SVO Purposes and Procedures Manual)	10,221,868,992	XXX	XXX	10,221,868,992	0.0000		0.1580	1,615,055,301	0.1580	1,615,055,301
16.		Affiliated - All Other	2,158,522,275	XXX	XXX	2,158,522,275	0.0000		0.1945	419,832,582	0.1945	419,832,582
17.		Total Common Stock (Sum of Lines 1 through 16)	25,917,031,110			25,917,031,110	XXX	12,403,302	XXX	2,331,238,752	XXX	2,356,304,464
REAL ESTATE												
18.		Home Office Property (General Account only)	377,966,254			377,966,254	0.0000		0.0912	34,470,522	0.0912	34,470,522
19.		Investment Properties	16,931,489		892,100,000	909,031,489	0.0000		0.0912	82,903,672	0.0912	82,903,672
20.		Properties Acquired in Satisfaction of Debt					0.0000		0.1337		0.1337	
21.		Total Real Estate (Sum of Lines 18 through 20)	394,897,743		892,100,000	1,286,997,743	XXX		XXX	117,374,194	XXX	117,374,194
OTHER INVESTED ASSETS												
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF BONDS												
22.		Exempt Obligations		XXX	XXX		0.0000		0.0000		0.0000	
23.	1	Highest Quality		XXX	XXX		0.0005		0.0016		0.0033	
24.	2	High Quality	773,956,427	XXX	XXX	773,956,427	0.0021	1,625,308	0.0064	4,953,321	0.0106	8,203,938
25.	3	Medium Quality	212,953,674	XXX	XXX	212,953,674	0.0099	2,108,241	0.0263	5,600,682	0.0376	8,007,058
26.	4	Low Quality	117,737	XXX	XXX	117,737	0.0245	2,885	0.0572	6,735	0.0817	9,619
27.	5	Lower Quality	42,800,783	XXX	XXX	42,800,783	0.0630	2,696,449	0.1128	4,827,928	0.1880	8,046,547
28.	6	In or Near Default	5,012,914	XXX	XXX	5,012,914	0.0000		0.2370	1,188,061	0.2370	1,188,061
29.		Total with Bond Characteristics (Sum of Lines 22 through 28)	1,034,841,535	XXX	XXX	1,034,841,535	XXX	6,432,884	XXX	16,576,726	XXX	25,455,223

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

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF PREFERRED STOCKS												
30.	1	Highest Quality	335,566,232	XXX	XXX	335,566,232	0.0005	167,783	0.0016	536,906	0.0033	1,107,369
31.	2	High Quality	21,994,629	XXX	XXX	21,994,629	0.0021	46,189	0.0064	140,766	0.0106	233,143
32.	3	Medium Quality		XXX	XXX		0.0099		0.0263		0.0376	
33.	4	Low Quality		XXX	XXX		0.0245		0.0572		0.0817	
34.	5	Lower Quality	10,488	XXX	XXX	10,488	0.0630	661	0.1128	1,183	0.1880	1,972
35.	6	In or Near Default		XXX	XXX		0.0000		0.2370		0.2370	
36.		Affiliated Life with AVR		XXX	XXX		0.0000		0.0000		0.0000	
37.		Total with Preferred Stock Characteristics (Sum of Lines 30 through 36)	357,571,349	XXX	XXX	357,571,349	XXX	214,633	XXX	678,855	XXX	1,342,483
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF MORTGAGE LOANS												
In Good Standing Affiliated:												
38.		Mortgages - CM1 - Highest Quality	273,739,038		XXX	273,739,038	0.0011	301,113	0.0057	1,560,313	0.0074	2,025,669
39.		Mortgages - CM2 - High Quality	908,011,805		XXX	908,011,805	0.0040	3,632,047	0.0114	10,351,335	0.0149	13,529,376
40.		Mortgages - CM3 - Medium Quality	477,898,377		XXX	477,898,377	0.0069	3,297,499	0.0200	9,557,968	0.0257	12,281,988
41.		Mortgages - CM4 - Low Medium Quality	16,647,373		XXX	16,647,373	0.0120	199,768	0.0343	571,005	0.0428	712,508
42.		Mortgages - CM5 - Low Quality			XXX		0.0183		0.0486		0.0628	
43.		Residential Mortgages - Insured or Guaranteed			XXX		0.0003		0.0007		0.0011	
44.		Residential Mortgages - All Other		XXX	XXX		0.0015		0.0034		0.0046	
45.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0003		0.0007		0.0011	
Overdue, Not in Process Affiliated:												
46.		Farm Mortgages			XXX		0.0480		0.0868		0.1371	
47.		Residential Mortgages - Insured or Guaranteed			XXX		0.0006		0.0014		0.0023	
48.		Residential Mortgages - All Other			XXX		0.0029		0.0066		0.0103	
49.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0006		0.0014		0.0023	
50.		Commercial Mortgages - All Other			XXX		0.0480		0.0868		0.1371	
In Process of Foreclosure Affiliated:												
51.		Farm Mortgages			XXX		0.0000		0.1942		0.1942	
52.		Residential Mortgages - Insured or Guaranteed			XXX		0.0000		0.0046		0.0046	
53.		Residential Mortgages - All Other			XXX		0.0000		0.0149		0.0149	
54.		Commercial Mortgages - Insured or Guaranteed			XXX		0.0000		0.0046		0.0046	
55.		Commercial Mortgages - All Other			XXX		0.0000		0.1942		0.1942	
56.		Total Affiliated (Sum of Lines 38 through 55)	1,676,296,594		XXX	1,676,296,594	XXX	7,430,427	XXX	22,040,620	XXX	28,549,541
57.		Unaffiliated - In Good Standing With Covenants			XXX		(c)		(c)		(c)	
58.		Unaffiliated - In Good Standing Defeased With Government Securities			XXX		0.0011		0.0057		0.0074	
59.		Unaffiliated - In Good Standing Primarily Senior			XXX		0.0040		0.0114		0.0149	
60.		Unaffiliated - In Good Standing All Other			XXX		0.0069		0.0200		0.0257	
61.		Unaffiliated - Overdue, Not in Process			XXX		0.0480		0.0868		0.1371	
62.		Unaffiliated - In Process of Foreclosure			XXX		0.0000		0.1942		0.1942	
63.		Total Unaffiliated (Sum of Lines 57 through 62)			XXX		XXX		XXX		XXX	
64.		Total with Mortgage Loan Characteristics (Lines 56 + 63)	1,676,296,594		XXX	1,676,296,594	XXX	7,430,427	XXX	22,040,620	XXX	28,549,541

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

Line Number	NAIC Designation	Description	1 Book/Adjusted Carrying Value	2 Reclassify Related Party Encumbrances	3 Add Third Party Encumbrances	4 Balance for AVR Reserve Calculations (Cols. 1 + 2 + 3)	Basic Contribution		Reserve Objective		Maximum Reserve	
							5 Factor	6 Amount (Cols. 4 x 5)	7 Factor	8 Amount (Cols. 4 x 7)	9 Factor	10 Amount (Cols. 4 x 9)
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF COMMON STOCK												
65.		Unaffiliated Public		XXX	XXX		0.0000		0.1580 (a)		0.1580 (a)	
66.		Unaffiliated Private	3,252,552,824	XXX	XXX	3,252,552,824	0.0000		0.1945	632,621,524	0.1945	632,621,524
67.		Affiliated Life with AVR		XXX	XXX		0.0000		0.0000		0.0000	
68.		Affiliated Certain Other (See SVO Purposes & Procedures Manual)		XXX	XXX		0.0000		0.1580		0.1580	
69.		Affiliated Other - All Other	2,473,823,857	XXX	XXX	2,473,823,857	0.0000		0.1945	481,158,740	0.1945	481,158,740
70.		Total with Common Stock Characteristics (Sum of Lines 65 through 69)	5,726,376,681	XXX	XXX	5,726,376,681	XXX		XXX	1,113,780,264	XXX	1,113,780,264
INVESTMENTS WITH THE UNDERLYING CHARACTERISTICS OF REAL ESTATE												
71.		Home Office Property (General Account only)					0.0000		0.0912		0.0912	
72.		Investment Properties	1,907,359,194		1,286,874,005	3,194,233,199	0.0000		0.0912	291,314,068	0.0912	291,314,068
73.		Properties Acquired in Satisfaction of Debt					0.0000		0.1337		0.1337	
74.		Total with Real Estate Characteristics (Sum of Lines 71 through 73)	1,907,359,194		1,286,874,005	3,194,233,199	XXX		XXX	291,314,068	XXX	291,314,068
LOW INCOME HOUSING TAX CREDIT INVESTMENTS												
75.		Guaranteed Federal Low Income Housing Tax Credit	930,446			930,446	0.0003	279	0.0006	558	0.0010	930
76.		Non-guaranteed Federal Low Income Housing Tax Credit	159,292,654			159,292,654	0.0063	1,003,544	0.0120	1,911,512	0.0190	3,026,560
77.		Guaranteed State Low Income Housing Tax Credit	10,000			10,000	0.0003	3	0.0006	6	0.0010	10
78.		Non-guaranteed State Low Income Housing Tax Credit					0.0063		0.0120		0.0190	
79.		All Other Low Income Housing Tax Credit					0.0273		0.0600		0.0975	
80.		Total LIHTC (Sum of Lines 75 through 79)	160,233,100			160,233,100	XXX	1,003,826	XXX	1,912,076	XXX	3,027,501
ALL OTHER INVESTMENTS												
81.		NAIC 1 Working Capital Finance Investments		XXX			0.0000		0.0042		0.0042	
82.		NAIC 2 Working Capital Finance Investments		XXX			0.0000		0.0137		0.0137	
83.		Other Invested Assets - Schedule BA	1,166,987,892	XXX		1,166,987,892	0.0000		0.1580	184,384,087	0.1580	184,384,087
84.		Other Short-Term Invested Assets - Schedule DA		XXX			0.0000		0.1580		0.1580	
85.		Total All Other (Sum of Lines 81, 82, 83 and 84)	1,166,987,892	XXX		1,166,987,892	XXX		XXX	184,384,087	XXX	184,384,087
86.		Total Other Invested Assets - Schedules BA & DA (Sum of Lines 29, 37, 64, 70, 74, 80 and 85)	12,029,666,345		1,286,874,005	13,316,540,350	XXX	15,081,770	XXX	1,630,686,696	XXX	1,647,853,167

(a) Times the company's weighted average portfolio beta (Minimum .1215, Maximum .2431).

(b) Determined using the same factors and breakdowns used for directly owned real estate.

(c) This will be the factor associated with the risk category determined in the company generated worksheet.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z	53,253,309	26,627	85,205	175,736
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	282,991,232	141,496	452,786	933,871
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AC5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	102,853,459	51,427	164,566	339,416
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AE1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	101,368,403	50,684	162,189	334,516
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AD3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	107,762,471	53,881	172,420	355,616
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AF8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AH4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,099,964	50,050	160,160	330,330
57629*AH4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AH4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AH4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
57629*AH4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	126,172,258	63,086	201,876	416,368
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AG6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	52,200,000	26,100	83,520	172,260
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AJ0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	58,070,000	29,035	92,912	191,631
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AK7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	53,692,471	26,846	85,908	177,185
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AL5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,364,562	25,182	80,583	166,203
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AM3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	370,000,000	185,000	592,000	1,221,000
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	268,670,000	134,335	429,872	886,611
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	302,028,309	151,014	483,245	996,693
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,849,125	125,425	401,359	827,802
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	328,049,510	164,025	524,879	1,082,563
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	327,790,934	163,895	524,465	1,081,710
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,248,423	27,624	88,397	182,320
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*AW1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	60,816,886	30,408	97,307	200,696
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AV3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,271,907	27,636	88,435	182,397
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AX9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	61,995,314	30,998	99,193	204,585
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AY7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	56,886,202	28,443	91,018	187,724
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*AU5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	66,274,073	33,137	106,039	218,704
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BA8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	228,670,323	114,335	365,873	754,612
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	253,764,063	126,882	406,023	837,421
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	104,335,000	52,168	166,936	344,306
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BD2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	102,156,143	51,078	163,450	337,115
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BC4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	128,367,492	64,184	205,388	423,613
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BF7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	87,126,915	43,563	139,403	287,519
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BP5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,539,858	62,770	200,864	414,282
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BR1	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	126,596,671	63,298	202,555	417,769
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BT7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	127,900,000	63,950	204,640	422,070
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BU4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,175,000	62,588	200,280	413,078
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BV2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BZ3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	51,641,520	25,821	82,626	170,417
57629*BZ3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*BZ3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CA7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,142,880	25,071	80,229	165,472
57629*CA7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CA7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CA7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CA7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CC3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	54,875,000	27,438	87,800	181,088
57629*CC3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CC3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CG4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	57,060,130	28,530	91,296	188,298
57629*CG4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CG4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CG4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	101,647,744	50,824	162,636	335,438
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CH2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	107,047,083	53,524	171,275	353,255
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,508,580	125,254	400,814	826,678
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	253,621,246	126,811	405,794	836,950
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	254,943,210	127,472	407,909	841,313
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*CS8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*CS8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,299,941	62,650	200,480	413,490
57629*CS8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*CS8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	128,083,902	64,042	204,934	422,677
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DB4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	310,654,573	155,327	497,047	1,025,160
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	255,681,079	127,841	409,090	843,748
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	206,057,304	103,029	329,692	679,989
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	205,225,398	102,613	328,361	677,244
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*DE8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*DE8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,661,609	62,831	201,059	414,683
57629*DE8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*DE8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*FB2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FB2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FB2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FB2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	293,341,712	146,671	469,347	968,028
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ES6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EG2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	178,999,996	89,500	286,400	590,700
57629*EG2	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EA5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	129,441,662	64,721	207,107	427,157
57629*EA5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EA5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EA5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EA5	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EB3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	251,346,250	125,673	402,154	829,443
57629*EB3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EB3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EB3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EB3	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EW7	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	206,000,000	103,000	329,600	679,800
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	151,136,808	75,568	241,819	498,751
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*ED9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	410,670,000	205,335	657,072	1,355,211
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FA4	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EH0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	26,904,232	13,452	43,047	88,784
57629*EH0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EH0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	187,690,844	93,845	300,305	619,380
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EJ6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	218,800,853	109,400	350,081	722,043
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FC0	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EV9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	253,008,820	126,504	404,814	834,929
57629*EV9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EV9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EV9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EV9	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,263,963	125,132	400,422	825,871
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*EZO	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	283,545,000	141,773	453,672	935,699
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FD8	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	298,696,352	149,348	477,914	985,698
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1	2	3	4	5	6	7	8	9
RSAT Number	Type	CUSIP	Description of Asset(s)	NAIC Designation or Other Description of Asset	Value of Asset	AVR Basic Contribution	AVR Reserve Objective	AVR Maximum Reserve
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FF3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	406,668,190	203,334	650,669	1,342,005
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FE6	R		Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	202,895,625	101,448	324,633	669,556
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	216,357,195	108,179	346,172	713,979
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FJ5	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*F09	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	323,432,594	161,716	517,492	1,067,328
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FT3	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	177,376,129	88,688	283,802	585,341
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FU0	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	292,193,207	146,097	467,509	964,238
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
57629*FK2	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	209,999,992	441,000	1,344,000	2,226,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	159,100,000	79,550	254,560	525,030
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	214,999,992	451,500	1,376,000	2,279,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	378,402,500	189,201	605,444	1,248,728
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

ASSET VALUATION RESERVE

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

1 RSAT Number	2 Type	3 CUSIP	4 Description of Asset(s)	5 NAIC Designation or Other Description of Asset	6 Value of Asset	7 AVR Basic Contribution	8 AVR Reserve Objective	9 AVR Maximum Reserve
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	214,999,992	451,500	1,376,000	2,279,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	319,999,988	672,000	2,048,000	3,392,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	259,999,990	546,000	1,664,000	2,756,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	209,999,992	441,000	1,344,000	2,226,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	314,999,988	661,500	2,016,000	3,339,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	264,999,990	556,500	1,696,000	2,809,000
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	165,000,000	82,500	264,000	544,500
Need to File with the NAIC	R		Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	215,000,000	107,500	344,000	709,500
0199999. Subtotal Default Component - Other Than Mortgage					23,304,021,923	18,047,026	56,471,486	106,080,534
0599999 - Total					23,304,021,923	18,047,026	56,471,486	106,080,534

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE F

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

1 Contract Numbers	2 Claim Numbers	3 State of Residence of Claimant	4 Year of Claim for Death or Disability	5 Amount Claimed	6 Amount Paid During the Year	7 Amount Resisted Dec. 31 of Current Year	8 Why Compromised or Resisted
0599999. Death Claims - Disposed Of							XXX
1099999. Additional Accidental Death Benefits Claims - Disposed Of							XXX
1599999. Disability Benefits Claims - Disposed Of							XXX
2099999. Matured Endowments Claims - Disposed Of							XXX
2599999. Annuities with Life Contingency Claims - Disposed Of							XXX
2699999. Claims Disposed of During Current Year							XXX
11195441	19-01495	NJ	2019	500,000		500,000	Company claims proceeds paid to the beneficiary
24440855	19-02211	FL	2019	800,000		800,000	Company claims material misrepresentation in application
2799999. Death Claims - Ordinary				1,300,000		1,300,000	XXX
3199999. Death Claims - Resisted				1,300,000		1,300,000	XXX
3699999. Additional Accidental Death Benefits Claims - Resisted							XXX
4199999. Disability Benefits Claims - Resisted							XXX
4699999. Matured Endowments Claims - Resisted							XXX
5199999. Annuities with Life Contingencies Claims - Resisted							XXX
5299999. Claims Resisted During Current Year				1,300,000		1,300,000	XXX
5399999 - Totals				1,300,000		1,300,000	XXX

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE H - ACCIDENT AND HEALTH EXHIBIT

	Total		Group Accident and Health		Credit Accident and Health (Group and Individual)		Collectively Renewable	Other Individual Contracts									
	1 Amount	2 %	3 Amount	4 %	5 Amount	6 %		Non-Cancelable		Guaranteed Renewable		Non-Renewable for Stated Reasons Only		Other Accident Only		All Other	
								9 Amount	10 %	11 Amount	12 %	13 Amount	14 %	15 Amount	16 %	17 Amount	18 %
PART 1. - ANALYSIS OF UNDERWRITING OPERATIONS																	
1. Premiums written	677,525,176	XXX	379,640	XXX		XXX	XXX	516,129,313	XXX	148,001,763	XXX	13,014,460	XXX		XXX		XXX
2. Premiums earned	679,009,771	XXX	379,640	XXX		XXX	XXX	515,992,700	XXX	149,668,453	XXX	12,968,978	XXX		XXX		XXX
3. Incurred claims	349,063,343	51.4	42,115	11.1				328,926,028	63.7	16,904,446	11.3	3,190,754	24.6				
4. Cost containment expenses	7,727,425	1.1						7,727,425	1.5								
5. Incurred claims and cost containment expenses (Lines 3 and 4)	356,790,768	52.5	42,115	11.1				336,653,453	65.2	16,904,446	11.3	3,190,754	24.6				
6. Increase in contract reserves	419,734,159	61.8						14,717,998	2.9	405,014,727	270.6	1,434	0.0				
7. Commissions (a)	64,874,069	9.6	91,463	24.1				66,619,586	12.9	(3,511,399)	(2.3)	1,674,419	12.9				
8. Other general insurance expenses	191,343,379	28.2	(1,301)	(0.3)				152,335,610	29.5	35,180,261	23.5	3,828,809	29.5				
9. Taxes, licenses and fees	24,060,802	3.5	9,413	2.5				14,552,317	2.8	9,133,314	6.1	365,758	2.8				
10. Total other expenses incurred	280,278,250	41.3	99,575	26.2				233,507,513	45.3	40,802,176	27.3	5,868,986	45.3				
11. Aggregate write-ins for deductions	17,212,923	2.5	236,659	62.3				16,154,227	3.1	822,037	0.5						
12. Gain from underwriting before dividends or refunds	(395,006,329)	(58.2)	1,291	0.3				(85,040,491)	(16.5)	(313,874,933)	(209.7)	3,907,804	30.1				
13. Dividends or refunds	30,021,385	4.4						29,279,902	5.7	2,193	0.0	739,290	5.7				
14. Gain from underwriting after dividends or refunds	(425,027,714)	(62.6)	1,291	0.3				(114,320,393)	(22.2)	(313,877,126)	(209.7)	3,168,514	24.4				
DETAILS OF WRITE-INS																	
1101. Miscellaneous charges	17,212,923	2.5	236,659	62.3				16,154,227	3.1	822,037	0.5						
1102.																	
1103.																	
1198. Summary of remaining write-ins for Line 11 from overflow page																	
1199. Totals (Lines 1101 thru 1103 plus 1198)(Line 11 above)	17,212,923	2.5	236,659	62.3				16,154,227	3.1	822,037	0.5						

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

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
SCHEDULE H - ACCIDENT AND HEALTH EXHIBIT (Continued)

	1 Total	2 Group Accident and Health	3 Credit Accident and Health (Group and Individual)	4 Collectively Renewable	Other Individual Contracts				
					5 Non-Cancelable	6 Guaranteed Renewable	7 Non-Renewable for Stated Reasons Only	8 Other Accident Only	9 All Other
PART 2. - RESERVES AND LIABILITIES									
A. Premium Reserves:									
1. Unearned premiums	65,915,289				44,329,537	20,910,435	675,317		
2. Advance premiums	12,094,103				9,055,089	2,848,763	190,251		
3. Reserve for rate credits									
4. Total premium reserves, current year	78,009,392				53,384,626	23,759,198	865,568		
5. Total premium reserves, prior year	78,205,632				52,303,763	25,122,947	778,922		
6. Increase in total premium reserves	(196,240)				1,080,863	(1,363,749)	86,646		
B. Contract Reserves:									
1. Additional reserves (a)	1,694,386,765				558,695,675	1,135,655,859	35,231		
2. Reserve for future contingent benefits									
3. Total contract reserves, current year	1,694,386,765				558,695,675	1,135,655,859	35,231		
4. Total contract reserves, prior year	1,274,652,606				543,977,677	730,641,132	33,797		
5. Increase in contract reserves	419,734,159				14,717,998	405,014,727	1,434		
C. Claim Reserves and Liabilities:									
1. Total current year	1,866,122,311	99,810			1,833,419,682	29,633,854	2,968,965		
2. Total prior year	1,859,753,087	86,250			1,838,362,632	18,650,011	2,654,194		
3. Increase	6,369,224	13,560			(4,942,950)	10,983,843	314,771		

PART 3. - TEST OF PRIOR YEAR'S CLAIM RESERVES AND LIABILITIES									
1. Claims paid during the year:									
1.1 On claims incurred prior to current year	333,383,355				325,500,527	5,330,865	2,551,963		
1.2 On claims incurred during current year	9,310,764	28,555			8,368,451	589,738	324,020		
2. Claim reserves and liabilities, December 31, current year:									
2.1 On claims incurred prior to current year	1,615,530,066				1,602,283,319	11,372,509	1,874,238		
2.2 On claims incurred during current year	250,592,245	99,810			231,136,363	18,261,345	1,094,727		
3. Test:									
3.1 Lines 1.1 and 2.1	1,948,913,421				1,927,783,846	16,703,374	4,426,201		
3.2 Claim reserves and liabilities, December 31, prior year	1,859,753,087	86,250			1,838,362,632	18,650,011	2,654,194		
3.3 Line 3.1 minus Line 3.2	89,160,334	(86,250)			89,421,214	(1,946,637)	1,772,007		

PART 4. - REINSURANCE									
A. Reinsurance Assumed:									
1. Premiums written									
2. Premiums earned									
3. Incurred claims									
4. Commissions									
B. Reinsurance Ceded:									
1. Premiums written	97,045,471	224,582				96,820,889			
2. Premiums earned	97,466,769	224,582				97,242,187			
3. Incurred claims	119,755,726	(12,712)			2,339,763	117,428,675			
4. Commissions	13,418,816	53,296				13,365,520			

(a) Includes \$300,000,000 premium deficiency reserve.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE H - PART 5 - HEALTH CLAIMS

	1 Medical	2 Dental	3 Other	4 Total
A. Direct:				
1. Incurred Claims			468,819,071	468,819,071
2. Beginning Claim Reserves and Liabilities			2,118,816,815	2,118,816,815
3. Ending Claim Reserves and Liabilities			2,174,481,837	2,174,481,837
4. Claims Paid			413,154,049	413,154,049
B. Assumed Reinsurance:				
5. Incurred Claims				
6. Beginning Claim Reserves and Liabilities				
7. Ending Claim Reserves and Liabilities				
8. Claims Paid				
C. Ceded Reinsurance:				
9. Incurred Claims			119,755,726	119,755,726
10. Beginning Claim Reserves and Liabilities			259,158,236	259,158,236
11. Ending Claim Reserves and Liabilities			308,526,578	308,526,578
12. Claims Paid			70,387,384	70,387,384
D. Net:				
13. Incurred Claims			349,063,345	349,063,345
14. Beginning Claim Reserves and Liabilities			1,859,658,579	1,859,658,579
15. Ending Claim Reserves and Liabilities			1,865,955,259	1,865,955,259
16. Claims Paid			342,766,665	342,766,665
E. Net Incurred Claims and Cost Containment Expenses:				
17. Incurred Claims and Cost Containment Expenses			356,790,769	356,790,769
18. Beginning Reserves and Liabilities			1,862,705,899	1,862,705,899
19. Ending Reserves and Liabilities			1,869,947,465	1,869,947,465
20. Paid Claims and Cost Containment Expenses			349,549,203	349,549,203

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 1 - SECTION 1

Reinsurance Assumed Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsured Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Reinsured	5 Domiciliary Jurisdiction	6 Type of Reinsurance Assumed	7 Type of Business Assumed	8 Amount of In Force at End of Year	9 Reserve	10 Premiums	11 Reinsurance Payable on Paid and Unpaid Losses	12 Modified Coinsurance Reserve	13 Funds Withheld Under Coinsurance
93432	06-1041383	01/01/1985	C. M. Life Insurance Company	CT	OTH/I	OL			361,386			
93432	06-1041383	01/01/2000	C. M. Life Insurance Company	CT	CO/I	AXXX	1,192,484,526	124,339,128	11,088,782	12,879,556		
93432	06-1041383	01/01/2000	C. M. Life Insurance Company	CT	CO/I	OL		89,906,906				
93432	06-1041383	01/01/2002	C. M. Life Insurance Company	CT	CO/I	AXXX	2,055,160,068	342,095,217	29,246,357	59,054,459		
93432	06-1041383	12/31/2020	C. M. Life Insurance Company	CT	OTH/I	OL			2,191,726			
70416	43-0581430	09/07/1983	MML Bay State Life Insurance Company	CT	YRT/I	OL	301,481,117	4,553,030	5,294,341	1,030,615		
70416	43-0581430	01/01/1997	MML Bay State Life Insurance Company	CT	OTH/I	OL			110,736			
0299999. General Account - U.S. Affiliates - Other							3,549,125,711	560,894,281	48,293,328	72,964,630		
0399999. Total General Account - U.S. Affiliates							3,549,125,711	560,894,281	48,293,328	72,964,630		
00000	AA-1120119	02/21/2017	Rothesay Life Plc	GBR	OTH/G	OA			18,705,292	1,434,163		
00000	AA-1120119	10/01/2019	Rothesay Life Plc	GBR	OTH/G	OA			72,407,575	5,601,053		
00000	AA-1120119	12/01/2020	Rothesay Life Plc	GBR	OTH/G	OA			8,393,659	9,286,451		
0599999. General Account - Non-U.S. Affiliates - Other								8,393,659	165,082,387	16,321,667		
0699999. Total General Account - Non-U.S. Affiliates								8,393,659	165,082,387	16,321,667		
0799999. Total General Account - Affiliates							3,549,125,711	569,287,940	213,375,715	89,286,297		
80659	82-4533188	01/01/1986	US Business of Canada Life Assur Co	MI	YRT/I	OL	268,358	8,554	17,463			
97136	13-3114906	10/01/1981	Metropolitan Tower Life Insurance Co. (FAC)	NE	YRT/I	OL	1,606,451	104,159	97,875			
97136	13-3114906	11/01/1985	Metropolitan Tower Life Insurance Co. (JX25)	NE	YRT/I	OL	5,398,511	182,763	271,254			
88072	06-0974148	01/01/2013	Talcott Resolution Life Insurance Company	CT	CO/G	OA		6,780,736,346	301,835,582			
80314	52-0913817	12/31/1994	UniCARE Life and Health Insurance Company	IN	CO/G	OL		438,594				
0899999. General Account - U.S. Non-Affiliates							7,273,320	6,781,470,416	302,222,174			
00000	AA-3190973	10/01/2000	Advantage International Life Insurance Limited	BMU	YRT/I	OL	51,208	414	396			
0999999. General Account - Non-U.S. Non-Affiliates							51,208	414	396			
1099999. Total General Account - Non-Affiliates							7,324,528	6,781,470,830	302,222,570			
1199999. Total General Account							3,556,450,239	7,350,758,770	515,598,285	89,286,297		
70416	43-0581430	01/01/2000	MML Bay State Life Insurance Company	CT	MCO/G	OL	2,213,004,635		310,873	9,525,155	1,194,059,693	
1399999. Separate Accounts - U.S. Affiliates - Other							2,213,004,635		310,873	9,525,155	1,194,059,693	
1499999. Total Separate Accounts - U.S. Affiliates							2,213,004,635		310,873	9,525,155	1,194,059,693	
1799999. Total Separate Accounts - Non-U.S. Affiliates												
1899999. Total Separate Accounts - Affiliates							2,213,004,635		310,873	9,525,155	1,194,059,693	
88072	06-0974148	01/01/2013	Talcott Resolution Life Insurance Company	CT	MCO/G	VA			595,623,469		19,675,480,630	
1999999. Separate Accounts - U.S. Non-Affiliates									595,623,469		19,675,480,630	
2199999. Total Separate Accounts - Non-Affiliates									595,623,469		19,675,480,630	
2299999. Total Separate Accounts							2,213,004,635		595,934,342	9,525,155	20,869,540,323	
2399999. Total U.S. (Sum of 0399999, 0899999, 1499999 and 1999999)							5,769,403,666	7,342,364,697	946,449,844	82,489,785	20,869,540,323	
2499999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999 and 2099999)							51,208	8,394,073	165,082,783	16,321,667		
9999999 - Totals							5,769,454,874	7,350,758,770	1,111,532,627	98,811,452	20,869,540,323	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 1 - SECTION 2

Reinsurance Assumed Accident and Health Insurance Listed by Reinsured Company as of December 31, Current Year

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Effective Date	Name of Reinsured	District/State of Reinsured	Type of Reinsurance Assumed	Type of Business Assumed	Premiums	Unearned Premiums	Reserve Liability Other Than for Unearned Premiums	Reinsurance Payable on Paid and Unpaid Losses	Modified Coinsurance Reserve	Funds Withheld Under Coinsurance
NONE												
9999999 - Totals												

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 2

Reinsurance Recoverable on Paid and Unpaid Losses Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domiciliary Jurisdiction	6 Paid Losses	7 Unpaid Losses
82627	06-0839705	05/23/2005	SWISS RE LIFE & HEALTH AMERICA INC. (SRL1)	MO	17,370	16,073
82627	06-0839705	05/23/2005	SWISS RE LIFE & HEALTH AMERICA INC. (SRL2)	MO		1,703
82627	06-0839705	05/23/2005	SWISS RE LIFE & HEALTH AMERICA INC. (SRL3)	MO	1,060,619	1,730,532
82627	06-0839705	11/01/2006	SWISS RE LIFE & HEALTH AMERICA INC. (SRL5)	MO	2,246,755	
82627	06-0839705	08/30/2010	SWISS RE LIFE & HEALTH AMERICA INC. (SRL6)	MO	397,074	90,000
82627	06-0839705	08/30/2010	SWISS RE LIFE & HEALTH AMERICA INC. (SRL7)	MO		20,000
82627	06-0839705	08/30/2010	SWISS RE LIFE & HEALTH AMERICA INC. (SRL8)	MO	1,236,951	3,961,254
82627	06-0839705	04/01/2005	SWISS RE LIFE & HEALTH AMERICA INC. (SRM7)	MO		521,960
82627	06-0839705	08/01/2017	SWISS RE LIFE & HEALTH AMERICA INC. (SRN6)	MO	288,017	732,644
82627	06-0839705	07/01/2012	SWISS RE LIFE & HEALTH AMERICA INC. (SRPB)	MO		228,734
82627	06-0839705	06/29/2015	SWISS RE LIFE & HEALTH AMERICA INC. (SRR1)	MO	3,612	
82627	06-0839705	12/01/2015	SWISS RE LIFE & HEALTH AMERICA INC. (SRS2)	MO		375,000
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT0)	MO	142,858	500,000
82627	06-0839705	08/30/2010	SWISS RE LIFE & HEALTH AMERICA INC. (SRT1)	MO		937,500
82627	06-0839705	08/30/2010	SWISS RE LIFE & HEALTH AMERICA INC. (SRT2)	MO	542,000	3,945,876
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT3)	MO		575,000
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT4)	MO	25,000	125,000
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT5)	MO	506	2,155,552
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT6)	MO	625,000	125,000
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT7)	MO	300,000	1,065,000
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRT9)	MO	400,000	
82627	06-0839705	07/07/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRTB)	MO	39,695	1,295,000
82627	06-0839705	05/01/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRV1)	MO		150,000
82627	06-0839705	05/01/2018	SWISS RE LIFE & HEALTH AMERICA INC. (SRV3)	MO		90,000
82627	06-0839705	01/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRV5)	MO		75,000
82627	06-0839705	01/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRV6)	MO		270,000
82627	06-0839705	01/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRV7)	MO		90,000
82627	06-0839705	01/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRV8)	MO		90,000
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW1)	MO		42,570
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW2)	MO		104,427
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW3)	MO		25,000
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW5)	MO		552,904
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW6)	MO	219,357	470,663
82627	06-0839705	11/23/2019	SWISS RE LIFE & HEALTH AMERICA INC. (SRW7)	MO		790,132
82627	06-0839705	06/15/1999	SWISS RE LIFE & HEALTH AMERICA INC. (SIW83)	MO	406,734	1,046,140
82627	06-0839705	05/01/2004	SWISS RE LIFE & HEALTH AMERICA INC. (SIWJ2)	MO	75,375	
82627	06-0839705	01/01/2005	SWISS RE LIFE & HEALTH AMERICA INC. (SIWJ7)	MO	37,687	75,375
70688	36-6071399	01/01/2005	TRANSAMERICA FINANCIAL LIFE INSURANCE COMPANY (TAJ7)	NY	25,000	
70688	36-6071399	05/23/2005	TRANSAMERICA FINANCIAL LIFE INSURANCE COMPANY (TAL2)	NY		1,703
70688	36-6071399	05/23/2005	TRANSAMERICA FINANCIAL LIFE INSURANCE COMPANY (TAL3)	NY	81,000	674,409
66133	41-1760577	05/23/2005	WILTON REASSURANCE COMPANY (WRL4)	MN	45,000	
0899999. Life and Annuity - U.S. Non-Affiliates					95,315,295	255,271,852
1099999. Total Life and Annuity - Non-Affiliates					95,315,295	255,271,852
1199999. Total Life and Annuity					95,315,295	255,271,852
1499999. Total Accident and Health - U.S. Affiliates						
1799999. Total Accident and Health - Non-U.S. Affiliates						
1899999. Total Accident and Health - Affiliates						
60054	06-6033492	03/22/2017	AETNA LIFE INSURANCE COMPANY (AE17)	CT		86,296
68276	48-1024691	06/01/2000	EMPLOYERS REASSURANCE CORPORATION (ER03)	KS		7,309,081
91898	86-0388413	01/01/2018	LIFECARE ASSURANCE COMPANY (LC18)	AZ	167,052	70,405
88099	75-1608507	05/09/2016	OPTIMUM RE INSURANCE COMPANY (OP16)	TX		26,390
80314	52-0913817	12/31/1994	UNICARE LIFE & HEALTH INSURANCE COMPANY (UN02)	IN		20,000
39845	48-0921045	01/01/1993	WESTPORT INSURANCE CORPORATION (ER01)	MO		409,932
1999999. Accident and Health - U.S. Non-Affiliates					167,052	7,922,104
2199999. Total Accident and Health - Non-Affiliates					167,052	7,922,104
2299999. Total Accident and Health					167,052	7,922,104
2399999. Total U.S. (Sum of 0399999, 0899999, 1499999 and 1999999)					95,482,347	263,193,956
2499999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999 and 2099999)						
9999999 Totals - Life, Annuity and Accident and Health					95,482,347	263,193,956

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 1

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

Table with 15 columns: 1 NAIC Company Code, 2 ID Number, 3 Effective Date, 4 Name of Company, 5 Domiciliary Jurisdiction, 6 Type of Reinsurance Ceded, 7 Type of Business Ceded, 8 Amount in Force at End of Year, 9-10 Reserve Credit Taken (Current Year, Prior Year), 11 Premiums, 12-13 Outstanding Surplus Relief (Current Year, Prior Year), 14 Modified Coinsurance Reserve, 15 Funds Withheld Under Coinsurance.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 1

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

Table with 15 columns: 1 NAIC Company Code, 2 ID Number, 3 Effective Date, 4 Name of Company, 5 Domiciliary Jurisdiction, 6 Type of Reinsurance Ceded, 7 Type of Business Ceded, 8 Amount in Force at End of Year, 9 Reserve Credit Taken Current Year, 10 Reserve Credit Taken Prior Year, 11 Premiums, 12 Outstanding Surplus Relief Current Year, 13 Outstanding Surplus Relief Prior Year, 14 Modified Coinsurance Reserve, 15 Funds Withheld Under Coinsurance.

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 1

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

Table with 15 columns: 1 NAIC Company Code, 2 ID Number, 3 Effective Date, 4 Name of Company, 5 Domiciliary Jurisdiction, 6 Type of Reinsurance Ceded, 7 Type of Business Ceded, 8 Amount in Force at End of Year, 9-10 Reserve Credit Taken (Current Year, Prior Year), 11 Premiums, 12-13 Outstanding Surplus Relief (Current Year, Prior Year), 14 Modified Coinsurance Reserve, 15 Funds Withheld Under Coinsurance.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 1

Reinsurance Ceded Life Insurance, Annuities, Deposit Funds and Other Liabilities Without Life or Disability Contingencies, and Related Benefits Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Amount in Force at End of Year	Reserve Credit Taken		11 Premiums	Outstanding Surplus Relief		14 Modified Coinsurance Reserve	15 Funds Withheld Under Coinsurance
								9 Current Year	10 Prior Year		12 Current Year	13 Prior Year		
0000	AA-5420050	11/20/2021	KOREAN REINSURANCE COMPANY (KRJU)	KOR	YRT/I	OL	91,589	44		45				
2099999. General Account - Unauthorized Non-U.S. Non-Affiliates														
2199999. Total General Account - Unauthorized Non-Affiliates							52,792,970	46,285		45				
2299999. Total General Account Unauthorized							52,792,970	168,706	134,865	45				
2599999. Total General Account - Certified U.S. Affiliates														
2899999. Total General Account - Certified Non-U.S. Affiliates														
2999999. Total General Account - Certified Affiliates														
0000	AA-3190982	07/01/2020	ATHENE LIFE RE LTD (TH20)	BMU	COFV/I	JA	7,761,196,662	6,456,212,832	1,570,809,760				7,757,716,485	
3199999. General Account - Certified Non-U.S. Non-Affiliates														
3299999. Total General Account - Certified Non-Affiliates							7,761,196,662	6,456,212,832	1,570,809,760					7,757,716,485
3399999. Total General Account Certified							7,761,196,662	6,456,212,832	1,570,809,760					7,757,716,485
3699999. Total General Account - Reciprocal Jurisdiction U.S. Affiliates														
3999999. Total General Account - Reciprocal Jurisdiction Non-U.S. Affiliates														
4099999. Total General Account - Reciprocal Jurisdiction Affiliates														
4399999. Total General Account - Reciprocal Jurisdiction Non-Affiliates														
4499999. Total General Account Reciprocal Jurisdiction														
4599999. Total General Account Authorized, Unauthorized, Reciprocal Jurisdiction and Certified							606,658,888,056	37,600,751,651	36,344,736,493	12,030,227,590	1,737,619,071	1,808,098,087	137,798,650	19,255,018,671
4899999. Total Separate Accounts - Authorized U.S. Affiliates														
5199999. Total Separate Accounts - Authorized Non-U.S. Affiliates														
5299999. Total Separate Accounts - Authorized Affiliates														
68322	84-0467907	12/31/2020	GREAT-WEST LIFE AND ANNUITY INSURANCE COMPANY (GIW02)	CO	MCO/G	VA							41,644,086,159	
68322	84-0467907	12/31/2020	GREAT-WEST LIFE AND ANNUITY INSURANCE COMPANY (GIW04)	CO	MCO/G	VA							18,415,111,383	
79359	13-2690792	12/31/2020	GREAT-WEST LIFE & ANNUITY INSURANCE COMPANY OF NEW YORK (GY06)	NY	MCO/G	VA							4,629,240,558	
79359	13-2690792	12/31/2020	GREAT-WEST LIFE & ANNUITY INSURANCE COMPANY OF NEW YORK (GY08)	NY	MCO/G	VA							1,260,369,247	
82627	06-0839705	12/31/2016	SWISS RE LIFE & HEALTH AMERICA INC. (SR16V)	MO	MCO/I	OL							726,778,095	
5399999. Separate Accounts - Authorized U.S. Non-Affiliates														
5599999. Total Separate Accounts - Authorized Non-Affiliates														
5699999. Total Separate Accounts Authorized														
5999999. Total Separate Accounts - Unauthorized U.S. Affiliates														
6299999. Total Separate Accounts - Unauthorized Non-U.S. Affiliates														
6399999. Total Separate Accounts - Unauthorized Affiliates														
6699999. Total Separate Accounts - Unauthorized Non-Affiliates														
6799999. Total Separate Accounts Unauthorized														
7099999. Total Separate Accounts - Certified U.S. Affiliates														
7399999. Total Separate Accounts - Certified Non-U.S. Affiliates														
7499999. Total Separate Accounts - Certified Affiliates														
7799999. Total Separate Accounts - Certified Non-Affiliates														
7899999. Total Separate Accounts Certified														
8199999. Total Separate Accounts - Reciprocal Jurisdiction U.S. Affiliates														
8499999. Total Separate Accounts - Reciprocal Jurisdiction Non-U.S. Affiliates														
8599999. Total Separate Accounts - Reciprocal Jurisdiction Affiliates														
8899999. Total Separate Accounts - Reciprocal Jurisdiction Non-Affiliates														
8999999. Total Separate Accounts Reciprocal Jurisdiction														
9099999. Total Separate Accounts Authorized, Unauthorized, Reciprocal Jurisdiction and Certified														
9199999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2599999, 3099999, 3699999, 4199999, 4899999, 5399999, 5999999, 6499999, 7099999, 7599999, 8199999 and 8699999)							606,606,095,086	29,839,508,704	29,888,523,661	10,459,417,785	1,737,619,071	1,808,098,087	66,813,384,092	11,497,302,186
9299999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2899999, 3199999, 3999999, 4299999, 5199999, 5499999, 6299999, 6599999, 7399999, 7699999, 8499999 and 8799999)							52,792,970	7,761,242,947	6,456,212,832	1,570,809,805				7,757,716,485
9999999 - Totals							606,658,888,056	37,600,751,651	36,344,736,493	12,030,227,590	1,737,619,071	1,808,098,087	66,813,384,092	19,255,018,671

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 2

Reinsurance Ceded Accident and Health Insurance Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Premiums	9 Unearned Premiums (Estimated)	10 Reserve Credit Taken Other than for Unearned Premiums	Outstanding Surplus Relief		13 Modified Coinsurance Reserve	14 Funds Withheld Under Coinsurance
										11 Current Year	12 Prior Year		
0399999. Total General Account - Authorized U.S. Affiliates													
0699999. Total General Account - Authorized Non-U.S. Affiliates													
0799999. Total General Account - Authorized Affiliates													
60054	06-6033492	03/22/2017	AETNA LIFE INSURANCE COMPANY (AE17)	CT	QA/I	MS	802,711	26,512	16,987				
68276	48-1024691	06/01/2000	EMPLOYERS REASSURANCE CORPORATION (ER03)	KS	QA/I	LTC	87,269,836	12,482,429	6,197,814,427				
60213	25-1800302	07/15/1994	HIM LIFE INSURANCE COMPANY OF NEW YORK (HIMNY)	NY	QA/G	OH			196,480				
91898	86-0388413	01/01/2018	LIFECARE ASSURANCE COMPANY (LC18)	AZ	QA/I	LTC	9,876,236	390,453	9,799,305				
88099	75-1608507	05/09/2016	OPTIMUM RE INSURANCE COMPANY (OP16)	TX	QA/G	OH	109,695						
80314	52-0913817	12/31/1994	UNICARE LIFE & HEALTH INSURANCE COMPANY (UN02)	IN	QA/G	OH	114,887		80,451				
39845	48-0921045	01/01/1993	WESTPORT INSURANCE CORPORATION (ER01)	MO	OTH/I	LTDI			14,972,912				
0899999. General Account - Authorized U.S. Non-Affiliates													
1099999. Total General Account - Authorized Non-Affiliates													
1199999. Total General Account Authorized													
1499999. Total General Account - Unauthorized U.S. Affiliates													
1799999. Total General Account - Unauthorized Non-U.S. Affiliates													
1899999. Total General Account - Unauthorized Affiliates													
2199999. Total General Account - Unauthorized Non-Affiliates													
2299999. Total General Account Unauthorized													
2599999. Total General Account - Certified U.S. Affiliates													
2899999. Total General Account - Certified Non-U.S. Affiliates													
2999999. Total General Account - Certified Affiliates													
3299999. Total General Account - Certified Non-Affiliates													
3399999. Total General Account Certified													
3699999. Total General Account - Reciprocal Jurisdiction U.S. Affiliates													
3999999. Total General Account - Reciprocal Jurisdiction Non-U.S. Affiliates													
4099999. Total General Account - Reciprocal Jurisdiction Affiliates													
4399999. Total General Account - Reciprocal Jurisdiction Non-Affiliates													
4499999. Total General Account Reciprocal Jurisdiction													
4599999. Total General Account Authorized, Unauthorized, Reciprocal Jurisdiction and Certified													
4899999. Total Separate Accounts - Authorized U.S. Affiliates													
5199999. Total Separate Accounts - Authorized Non-U.S. Affiliates													
5299999. Total Separate Accounts - Authorized Affiliates													
5599999. Total Separate Accounts - Authorized Non-Affiliates													
5699999. Total Separate Accounts Authorized													
5999999. Total Separate Accounts - Unauthorized U.S. Affiliates													
6299999. Total Separate Accounts - Unauthorized Non-U.S. Affiliates													
6399999. Total Separate Accounts - Unauthorized Affiliates													
6699999. Total Separate Accounts - Unauthorized Non-Affiliates													
6799999. Total Separate Accounts Unauthorized													
7099999. Total Separate Accounts - Certified U.S. Affiliates													
7399999. Total Separate Accounts - Certified Non-U.S. Affiliates													
7499999. Total Separate Accounts - Certified Affiliates													
7799999. Total Separate Accounts - Certified Non-Affiliates													
7899999. Total Separate Accounts Certified													
8199999. Total Separate Accounts - Reciprocal Jurisdiction U.S. Affiliates													
8499999. Total Separate Accounts - Reciprocal Jurisdiction Non-U.S. Affiliates													
8599999. Total Separate Accounts - Reciprocal Jurisdiction Affiliates													
8899999. Total Separate Accounts - Reciprocal Jurisdiction Non-Affiliates													
8999999. Total Separate Accounts Reciprocal Jurisdiction													
9099999. Total Separate Accounts Authorized, Unauthorized, Reciprocal Jurisdiction and Certified													
9199999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2599999, 3099999, 3699999, 4199999, 4899999, 5399999, 5999999, 6499999, 7099999, 7599999, 8199999 and 8699999)													
							98,173,365	12,899,394	6,222,880,562				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 3 - SECTION 2

Reinsurance Ceded Accident and Health Insurance Listed by Reinsuring Company as of December 31, Current Year

1 NAIC Company Code	2 ID Number	3 Effective Date	4 Name of Company	5 Domi- ciliary Juris- diction	6 Type of Reinsurance Ceded	7 Type of Business Ceded	8 Premiums	9 Unearned Premiums (Estimated)	10 Reserve Credit Taken Other than for Unearned Premiums	Outstanding Surplus Relief		13 Modified Coinsurance Reserve	14 Funds Withheld Under Coinsurance
										11 Current Year	12 Prior Year		
9299999	Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2899999, 3199999, 3999999, 4299999, 5199999, 5499999, 6299999, 6599999, 7399999, 7699999, 8499999 and 8799999)												
9999999	Totals						98,173,365	12,899,394	6,222,880,562				

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 4

Reinsurance Ceded to Unauthorized Companies

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Reserve Credit Taken	Paid and Unpaid Losses Recoverable (Debit)	Other Debits	Total (Cols.5+6+7)	Letters of Credit	Issuing or Confirming Bank Reference Number (a)	Trust Agreements	Funds Deposited by and Withheld from Reinsurers	Other	Miscellaneous Balances (Credit)	Sum of Cols. 9+11+12+13 +14 but not in Excess of Col. 8
0399999			Total General Account - Life and Annuity U.S. Affiliates						XXX					
0699999			Total General Account - Life and Annuity Non-U.S. Affiliates						XXX					
0799999			Total General Account - Life and Annuity Affiliates						XXX					
85090	22-3026145	07/15/1994	Dearborn National Life Ins Co of NY	122,421			122,421							
0899999			General Account - Life and Annuity U.S. Non-Affiliates	122,421			122,421		XXX					
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUA)	18,398		13	18,411	21,862					15	18,411
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUB)	5,217			5,217	6,199						5,217
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUC)	2,875		26	2,901	3,416					30	2,901
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUD)	19,576			19,576	23,262						19,576
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUG)	138			138	164						138
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUI)	37			37	44						37
00000	AA-5420050	11/20/2021	Korean Reinsurance Company (KRUIJ)	44			44	53						44
0999999			General Account - Life and Annuity Non-U.S. Non-Affiliates	46,285		39	46,324	55,000	XXX				45	46,324
1099999			Total General Account - Life and Annuity Non-Affiliates	168,706		39	168,745	55,000	XXX				45	46,324
1199999			Total General Account Life and Annuity	168,706		39	168,745	55,000	XXX				45	46,324
1499999			Total General Account - Accident and Health U.S. Affiliates						XXX					
1799999			Total General Account - Accident and Health Non-U.S. Affiliates						XXX					
1899999			Total General Account - Accident and Health Affiliates						XXX					
2199999			Total General Account - Accident and Health Non-Affiliates						XXX					
2299999			Total General Account Accident and Health						XXX					
2399999			Total General Account	168,706		39	168,745	55,000	XXX				45	46,324
2699999			Total Separate Accounts - U.S. Affiliates						XXX					
2999999			Total Separate Accounts - Non-U.S. Affiliates						XXX					
3099999			Total Separate Accounts - Affiliates						XXX					
3399999			Total Separate Accounts - Non-Affiliates						XXX					
3499999			Total Separate Accounts						XXX					
3599999			Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2699999 and 3199999)	122,421			122,421		XXX					
3699999			Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2999999 and 3299999)	46,285		39	46,324	55,000	XXX				45	46,324
9999999			Totals	168,706		39	168,745	55,000	XXX				45	46,324

(a)

Issuing or Confirming Bank Reference Number	Letters of Credit Code	American Bankers Association (ABA) Routing Number	Issuing or Confirming Bank Name	Letters of Credit Amount
0001	1	026013343	Kookmin Bank	55,000

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 5

Reinsurance Ceded to Certified Reinsurers as of December 31, Current Year (\$000 Omitted)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Collateral						23	24	25	26																	
															16	17	18	19	20	21					22																
NAIC Company Code	ID Number	Effective Date	Name of Reinsurer	Domiciliary Jurisdiction	Certified Reinsurer Rating (1 through 6)	Effective Date of Certified Reinsurer Rating	Percent Collateral Required for Full Credit (0% - 100%)	Reserve Credit Taken	Paid and Unpaid Losses Recoverable (Debit)	Other Debits	Total Recoverable/ Reserve Credit Taken (Col. 9 + 10 + 11)	Miscellaneous Balances (Credit)	Net Obligation Subject to Collateral (Col. 12 - 13)	Dollar Amount of Collateral Required for Full Credit (Col. 14 Times Col. 8)	Multiple Beneficiary Trust	Letters of Credit	Issuing or Confirming Bank Reference Number (a)	Trust Agreements	Funds Deposited by and Withheld from Reinsurers	Other	Total Collateral Provided (Col. 16 + 17 + 19 + 20 + 21)	Percent of Collateral Provided for Net Obligation Subject to Collateral (Col. 22 / Col. 14)	Percent Credit Allowed on Net Obligation Subject to Collateral (Col. 23 / Col. 8, not to Exceed 100%)	Amount of Credit Allowed for Net Obligation Subject to Collateral (Col. 14 x Col. 24)	Liability for Reinsurance with Certified Reinsurers Due to Collateral Deficiency (Col. 14 - Col. 25)																
0399999. Total General Account - Life and Annuity U.S. Affiliates																	XXX				XXX	XXX																			
0699999. Total General Account - Life and Annuity Non-U.S. Affiliates																	XXX																								
0799999. Total General Account - Life and Annuity Affiliates																	XXX																								
00000	AA-3190982	07/01/2020	Athene Life Re Ltd.	BMU	3	01/01/2021		7,761,196,662			7,761,196,662		7,761,196,662					214,942,208	7,757,716,485		7,972,658,693	102.7	100.0	7,761,196,662																	
0999999. General Account - Life and Annuity Non-U.S. Non-Affiliates																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	
1099999. Total General Account - Life and Annuity Non-Affiliates																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	
1199999. Total General Account Life and Annuity																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	
1499999. Total General Account - Accident and Health U.S. Affiliates																	XXX																								
1799999. Total General Account - Accident and Health Non-U.S. Affiliates																	XXX																								
1899999. Total General Account - Accident and Health Affiliates																	XXX																								
2199999. Total General Account - Accident and Health Non-Affiliates																	XXX																								
2299999. Total General Account Accident and Health																	XXX																								
2399999. Total General Account																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	
2699999. Total Separate Accounts - U.S. Affiliates																	XXX																								
2999999. Total Separate Accounts - Non-U.S. Affiliates																	XXX																								
3099999. Total Separate Accounts - Affiliates																	XXX																								
3399999. Total Separate Accounts - Non-Affiliates																	XXX																								
3499999. Total Separate Accounts																	XXX																								
3599999. Total U.S. (Sum of 0399999, 0899999, 1499999, 1999999, 2699999 and 3199999)																	XXX																								
3699999. Total Non-U.S. (Sum of 0699999, 0999999, 1799999, 2099999, 2999999 and 3299999)																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	
9999999 - Totals																	XXX	214,942,208	7,757,716,485		7,972,658,693	XXX	XXX	7,761,196,662																	

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(a)	Issuing or Confirming Bank Reference Number	Letters of Credit Code	American Bankers Association (ABA) Routing Number	Issuing or Confirming Bank Name	Letters of Credit Amount
				NONE	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE S - PART 6

Five Year Exhibit of Reinsurance Ceded Business
(\$000 Omitted)

	1 2021	2 2020	3 2019	4 2018	5 2017
A. OPERATIONS ITEMS					
1. Premiums and annuity considerations for life and accident and health contracts	12,128,401	22,910,932	4,145,918	1,692,226	4,970,357
2. Commissions and reinsurance expense allowances	430,088	2,693,101	287,604	183,575	129,972
3. Contract claims	1,699,336	1,034,311	756,649	731,949	658,178
4. Surrender benefits and withdrawals for life contracts	15,374,600	74,979	65,190	42,694	35,441
5. Dividends to policyholders and refunds to members	19,878	12,680	3,258	503	518
6. Reserve adjustments on reinsurance ceded	(26,908)	(23,655)	(33,004)	(120,339)	3,723
7. Increase in aggregate reserve for life and accident and health contracts	3,249,953	21,507,240	4,607,898	1,535,207	4,410,673
B. BALANCE SHEET ITEMS					
8. Premiums and annuity considerations for life and accident and health contracts deferred and uncollected	204,265	199,868	195,025	226,050	186,621
9. Aggregate reserves for life and accident and health contracts	43,836,532	40,279,704	15,041,334	10,433,437	8,898,230
10. Liability for deposit-type contracts	3,324,128				
11. Contract claims unpaid	263,194	217,537	184,611	131,699	134,449
12. Amounts recoverable on reinsurance	95,482	67,472	37,140	72,096	30,663
13. Experience rating refunds due or unpaid			2	81	117
14. Policyholders' dividends and refunds to members (not included in Line 10)	7,832	7,236	2,886	546	535
15. Commissions and reinsurance expense allowances due	132,084	252,461	31,808	29,496	24,140
16. Unauthorized reinsurance offset	122	1,028	383	189	204
17. Offset for reinsurance with Certified Reinsurers					
C. UNAUTHORIZED REINSURANCE (DEPOSITS BY AND FUNDS WITHHELD FROM)					
18. Funds deposited by and withheld from (F)					
19. Letters of credit (L)	55				
20. Trust agreements (T)		84	7,576	10,767	6,429
21. Other (O)					
D. REINSURANCE WITH CERTIFIED REINSURERS (DEPOSITS BY AND FUNDS WITHHELD FROM)					
22. Multiple Beneficiary Trust					
23. Funds deposited by and withheld from (F)	7,757,716,485	6,450,994,969			
24. Letters of credit (L)					
25. Trust agreements (T)	214,942,208	200,873,232			
26. Other (O)					

SCHEDULE S - PART 7

Restatement of Balance Sheet to Identify Net Credit for Ceded Reinsurance

	1 As Reported (net of ceded)	2 Restatement Adjustments	3 Restated (gross of ceded)
ASSETS (Page 2, Col. 3)			
1. Cash and invested assets (Line 12)	229,771,795,867		229,771,795,867
2. Reinsurance (Line 16)	238,311,412	(238,311,412)	
3. Premiums and considerations (Line 15)	1,182,603,808	204,264,925	1,386,868,733
4. Net credit for ceded reinsurance	XXX	37,415,484,459	37,415,484,459
5. All other admitted assets (balance)	7,614,691,318		7,614,691,318
6. Total assets excluding Separate Accounts (Line 26)	238,807,402,404	37,381,437,972	276,188,840,377
7. Separate Account assets (Line 27)	76,159,844,023		76,159,844,023
8. Total assets (Line 28)	314,967,246,427	37,381,437,972	352,348,684,399
LIABILITIES, CAPITAL AND SURPLUS (Page 3)			
9. Contract reserves (Lines 1 and 2)	138,269,007,880	40,512,403,282	178,781,411,162
10. Liability for deposit-type contracts (Line 3)	17,041,384,885	3,324,128,310	20,365,513,194
11. Claim reserves (Line 4)	741,883,909	263,193,955	1,005,077,864
12. Policyholder dividends/member refunds/reserves (Lines 5 through 7)	1,827,814,250	7,832,490	1,835,646,740
13. Premium & annuity considerations received in advance (Line 8)	47,546,285	1,099,943,808	1,147,490,093
14. Other contract liabilities (Line 9)	1,659,652,445	(70,681,710)	1,588,970,735
15. Reinsurance in unauthorized companies (Line 24.02 minus inset amount)	122,421	(122,421)	
16. Funds held under reinsurance treaties with unauthorized reinsurers (Line 24.03 minus inset amount)	7,757,716,485		7,757,716,485
17. Reinsurance with Certified Reinsurers (Line 24.02 inset amount)			
18. Funds held under reinsurance treaties with Certified Reinsurers (Line 24.03 inset amount)		(7,757,716,485)	(7,757,716,485)
19. All other liabilities (balance)	44,630,491,272	2,456,744	44,632,948,016
20. Total liabilities excluding Separate Accounts (Line 26)	211,975,619,833	37,381,437,972	249,357,057,805
21. Separate Account liabilities (Line 27)	76,012,370,602		76,012,370,602
22. Total liabilities (Line 28)	287,987,990,435	37,381,437,972	325,369,428,407
23. Capital & surplus (Line 38)	26,979,255,992	XXX	26,979,255,992
24. Total liabilities, capital & surplus (Line 39)	314,967,246,427	37,381,437,972	352,348,684,399
NET CREDIT FOR CEDED REINSURANCE			
25. Contract reserves	40,512,403,282		
26. Claim reserves	263,193,955		
27. Policyholder dividends/reserves	7,832,490		
28. Premium & annuity considerations received in advance	1,099,943,808		
29. Liability for deposit-type contracts	3,324,128,310		
30. Other contract liabilities	(70,681,710)		
31. Reinsurance ceded assets	238,311,412		
32. Other ceded reinsurance recoverables			
33. Total ceded reinsurance recoverables	45,375,131,547		
34. Premiums and considerations	204,264,925		
35. Reinsurance in unauthorized companies	122,421		
36. Funds held under reinsurance treaties with unauthorized reinsurers			
37. Reinsurance with Certified Reinsurers			
38. Funds held under reinsurance treaties with Certified Reinsurers	7,757,716,485		
39. Other ceded reinsurance payables/offsets	(2,456,744)		
40. Total ceded reinsurance payable/offsets	7,959,647,087		
41. Total net credit for ceded reinsurance	37,415,484,459		

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

The following entities are general partner level or above of **Massachusetts Mutual Life Insurance Company** (Parent)

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY	04-1590850	65935	Massachusetts
Direct & Indirect Owned Subsidiaries:			
C.M. Life Insurance Company	06-1041383	93432	Connecticut
MML Bay State Life Insurance Company	43-0581430	70416	Connecticut
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		Delaware
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 I II LLC	None		Delaware
MM/Barings Multifamily TEBS 2020 LLC	None		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
Timberland Forest Holding LLC	47-5322979		Delaware
Lyme Adirondack Forest Company, LLC	None		Delaware
Lyme Adirondack 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
MassMutual Private Equity Funds LLC	04-1590850		Delaware
MassMutual Private Equity Funds Subsidiary LLC	04-1590850		Delaware
ITPS Holding LLC	None		Delaware
HITPS LLC	None		Delaware
EM Opportunities LLC	None		Delaware
MassMutual MCAM Insurance Company, Inc.	None		Vermont
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
JFAM GP LLC	None		Delaware

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>
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
Jefferies Senior Lending LLC	None		Delaware
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Co-Issuer Corporation	None		Delaware
JFIN Europe GP, S.a.r.l.	None		Luxembourg
Jefferies Finance Europe, S.L.P.	None		Luxembourg
Jefferies Finance Europe, SCSp	None		Luxembourg
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 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
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

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>
Glidepath Holdings Inc.	86-2294635		Delaware
Great American Life Insurance Company	13-1935920	63312	Ohio
AAG Insurance Agency, LLC	31-1422717		Kentucky
Annuity Investors Life Insurance Company	31-1021738	93661	Ohio
Great American Advisors, 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
MM Direct Private Investments Holding LLC	None		Delaware
MM Direct Private Investments UK Limited	None		United Kingdom
MM Investment Holding	None		Cayman Islands
MassMutual Asset Finance LLC	26-0073611		Delaware
MMAF Equipment Finance LLC 2013-A	90-1005837		Delaware
MMAF Equipment Finance LLC 2014-A	36-4785301		Delaware
MMAF Equipment Finance LLC 2015-A	38-3969560		Delaware
MMAF Equipment Finance LLC 2016-A	32-0489588		Delaware
MMAF Equipment Finance LLC 2017-A	35-2590691		Delaware
MMAF Equipment Finance LLC 2017-B	32-0546197		Delaware
MMAF Equipment Finance LLC 2018-A	82-5335801		Delaware
MMAF Equipment Finance LLC 2019-A	83-3722640		Delaware
MMAF Equipment Finance LLC 2019-B	None		Delaware
MMAF Equipment Finance LLC 2021-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 Technologies LLC	None		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

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>
Sleeper Street LLC	None		Delaware
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
MassMutual Capital Partners LLC	04-1590850		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
MassMutual Ventures Southeast Asia I LLC	None		Delaware
MassMutual Ventures Southeast Asia II LLC	None		Delaware
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
MassMutual Ventures US IV LLC	None		Delaware
Open Alternatives LLC	None		Delaware
MM Catalyst Fund LLC	None		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
Rothesay Limited	None		United Kingdom
Rothesay Life Plc	None		United Kingdom
Rothesay MA No.1 Limited	None		United Kingdom
Rothesay MA No.2 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 US 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

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

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Baring Asset Management 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	98-0457456		Australia
Barings Finance LLC	80-0875475		Delaware
BCF Europe Funding Limited	None		Ireland
BCF Senior Funding I LLC	None		Delaware
BCF Senior Funding I Designated Activity Company	None		Ireland
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings Europe Limited	None		United Kingdom
Barings Asset Management Spain SL	None		Spain
Barings Italy S.r.l.	None		Italy
Barings Sweden AB	None		Sweden
Barings Netherlands B.V.	None		Netherlands
Barings Real Estate UK Holdings Limited	None		Delaware
Barings Real Estate Advisers (Continental Europe) Limited	98-0654401		United Kingdom
Barings Real Estate GmbH	98-1194368		Germany
Baring Asset Management Limited	98-0241935		United Kingdom
Barings European Direct Lending 1 GP LLP	None		United Kingdom
Barings Global Advisors Limited	98-1012393		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 International Fund Managers (Ireland) Limited	98-0524272		Ireland
Baring Asset Management Switzerland Sàrl	None		Switzerland
Baring France SAS	98-0497550		France
Baring Fund Managers Limited	98-0457586		United Kingdom
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 Sà.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

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>
PREIF Holdings Limited Partnership	None		United Kingdom
Barings (U.K.) Limited	98-0432153		United Kingdom
BMC Holdings DE LLC	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		California
CRA Aircraft Holding LLC	81-4258759		Delaware
Aland Royalty Holdings LP	None		Delaware
GASL Holdings LLC	None		Delaware
Intermodal Holding II LLC	46-2344300		Delaware
Novation Companies, Inc.	None		Maryland
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC	81-4065378		Connecticut
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
Techquity, LP	None		Delaware
Validus Holding Company LLC	46-0687392		Delaware
Validus Pharmaceuticals LLC	None		Delaware
VGS Acquisition Holding, LLC	None		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 Hotel Opportunity Venture I GP, LLC	None		Delaware
Barings Investment Series LLC	None		Delaware
Barings Emerging Generation Fund GP, 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 Emerging Generation Fund LP	84-3784245		Delaware
Barings Global Energy Infrastructure Advisors, LLC	None		Delaware
Barings Global Real Assets Fund GP, LLC	None		Delaware
Barings GPSF	None		Delaware
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings North American Private Loan Fund Management II, LLC	None		Delaware

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

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings 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
BRECS VII GP LLC	None		Delaware
BREDIF GP LLC	None		Delaware
CHY Venture GP LLC	None		Delaware
CREF X GP LLC	None		Delaware
Great Lakes III GP, LLC	04-1590850		Delaware
Lake Jackson LLC	None		Delaware
Loan Strategies Management LLC	04-1590850		Delaware
Mezzco III LLC	41-2280126		Delaware
Mezzco IV LLC	80-0920285		Delaware
Mezzco Australia II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
SBNP SIA II LLC	None		Delaware
SBNP SIA III LLC	None		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware
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
Yunfeng Financial Group Limited	None		Hong Kong
MassMutual Asia Limited (SPV)	None		Hong Kong
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
Other Affiliates & Funds:			
100 w. 3 rd Street LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	82-2432216		Delaware
2160 Grand Manager LLC	04-1590850		Delaware
300 South Tryon LLC	04-1590850		Delaware
Almack Mezzanine Fund II Unleveraged LP	None		United Kingdom
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 Asset-Based Income Fund (US) LP	36-4868350		Delaware
Barings Emerging Markets Corporate Bond Fund	None		Ireland
Barings European Real Estate Debt Income Fund	None		Luxembourg
Babson Capital Global Special Situation Credit Fund 2	98-1206017		Delaware

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>
Babson Capital Loan Strategies Fund, L.P.	37-1506417		Delaware
Barings US High Yield Bond Fund	None		Ireland
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Barings CLO Ltd. 2017-I	None		Cayman Islands
Barings CLO 2018-III	None		Cayman Islands
Barings CLO 2018-IV	None		Cayman Islands
Barings CLO 2019-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
Barings CLO 2020-IV	None		Cayman Islands
Barings CLO 2021-I	None		Cayman Islands
Barings CLO 2021-II	None		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
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 Global Em. Markets Equity Fund	82-5330194		North Carolina
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Global Inv. Grade Strat Fund	None		Ireland
Barings Global Private Loan Fund	None		Luxembourg
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings Global Special Situations Credit 4 Delaware	85-1465973		Delaware
Barings Global Special Situations Credit 4 LUX	98-1570693		Luxembourg
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

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

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Barings Middle Market CLO 2019-I	None		Cayman Islands
Barings Middle Market CLO Ltd 2021-I	98-1612604		Cayman Islands
Barings North American Private Loan Fund LP	38-4010344		Delaware
Barings RE Credit Strategies VII LP	98-1332384		Delaware
Barings CLO Investment Partners LP	81-0841854		Delaware
Barings Euro Value Add II (BREEVA II)	None		Luxembourg
Barings Real Estate European Value Add I SCSp	None		United Kingdom
Barings Real Estate Debt Income Fund LP	85-3449260		Delaware
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
Cornerstone Real Estate Fund X LP	46-5432619		Delaware
Gateway Mezzanine Partners II LP	90-0991195		Delaware
Great Lakes III, L.P.	37-1708623		Delaware
GIA EU Holdings - Emerson JV Sarl	None		Luxembourg
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012		New York
JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059		New York
KKR-MM Vector LP	82-1512591		Delaware
Marco Hotel LLC	46-4255307		Delaware
Miami Douglas One GP LLC	04-1590850		Delaware
Miami Douglas Two GP LLC	04-1590850		Delaware
Miami Douglas One LP	04-1590850		Delaware
Miami Douglas Two LP	04-1590850		Delaware
Miami Douglas Three MM LLC	04-1590850		Delaware
MM BIG Peninsula Co-Invest Member LLC	87-4021641		Delaware
NYDIG Digital Assets Fund II LP	85-3886824		Delaware
HB Naples Golf Owner LLC	45-3623262		Delaware
MM CM Holding LLC	None		Delaware
MM Debt Participations LLC	81-3000420		Delaware
RB Apartments LLC	82-4411267		Delaware
Reston Arboretum LLC	75-2901061		Delaware
Somerset Special Opportunities Fund L.P.	20-8856877		Delaware
SouthPointe Industrial LLC	04-1590850		Delaware

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>
Ten Fan Pier Boulevard LLC	35-2553915		Delaware
Tower Square Capital Partners III, L.P.	41-2280127		Delaware
Tower Square Capital Partners IIIA, L.P.	41-2280129		Delaware
Trailside MM Member LLC	04-1590850		Delaware
Washington Gateway Two LLC	83-1325764		Delaware
Washington Gateway Three LLC	32-0574045		Delaware
West 46 th Street Hotel LLC	05-1590850		Delaware
Barings Affiliates & Funds:			
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:			
50 Liberty LLC	36-4823011		Delaware
Barings California Mortgage Fund IV	None		California
Barings Umbrella Fund LUX SCSp SICAV RAIF	None		Luxembourg
Calgary Railway Holding LLC	82-2285211		Delaware
Combrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone California Mortgage Fund III LLC	95-4207717		California
Cornerstone Fort Pierce Development LLC	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Cornerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA/PPC Venture LLC	20-0348173		Delaware
CREA Madison Member LLC	81-0890084		Delaware
Danville Riverwalk Venture, LLC	82-2783393		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
MM Brookhaven Member LLC	04-1590850		Delaware
MM East South Crossing Member LLC	04-1590850		Delaware
MM Horizon Savannah Member LLC	04-1590850		Delaware
One Harbor Shore LLC	80-0948028		Delaware
PACO France Logistics LLC	04-1590850		Delaware

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

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
Sawgrass Village Shopping Center LLC	27-2977720		Delaware
STOA Holding LLC	None		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Twenty Two Liberty LLC	35-2484550		Massachusetts
Unna, Dortmund Holding LLC	82-3250684		Delaware
Washington Gateway Apartments Venture LLC	45-5401109		Delaware
MassMutual Premier Funds:			
MassMutual Premier Focused International Fund	02-0754273		Massachusetts
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
MassMutual Select Funds:			
MassMutual Select Diversified Value Fund	01-0821120		Massachusetts
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
MassMutual Select T. Rowe Price Retirement 2050 Fund	82-3481715		Massachusetts
MassMutual Select T. Rowe Price Retirement 2055 Fund	82-3502011		Massachusetts
MassMutual Select T. Rowe Price Retirement 2060 Fund	82-3525148		Massachusetts
MassMutual Select T. Rowe Price Retirement Balanced Fund	82-3533944		Massachusetts
MML Series Investment Funds:			
MML Series International Equity Fund	46-4257056		Massachusetts
MML Series Investment Funds II:			
MML Series II Asset Momentum Fund	47-3517233		Massachusetts
MML Series II Dynamic Bond Fund	47-3529636		Massachusetts
MML Series II Equity Rotation Fund	47-3544629		Massachusetts
MML Series II Special Situations Fund	47-3559064		Massachusetts
MassMutual RetireSMART Funds:			
MassMutual RetireSMART 2035 Fund	27-1933380		Massachusetts
MassMutual RetireSMART 2045 Fund	27-1932769		Massachusetts

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

PART 1 – ORGANIZATIONAL CHART

	<u>Federal Tax ID</u>	<u>NAIC Co Code</u>	<u>State of Domicile</u>
MassMutual RetireSMART 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

ANNUAL STATEMENT FOR THE YEAR 2021 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)	*
.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	Massachusetts Mutual Life Insurance 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			06-1041383				CML Mezzanine Investor III, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							CML Special Situations Investor LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
.0000							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							MML Special Situations Investor LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-5322979				Timberland Forest Holding LLC	DE	DS	C.M. Life Insurance Company	Influence		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			04-1590850				Berkshire Way LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MSP-SC, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							EM Opportunities LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MassMutual MCAM Insurance Company, Inc.	VT	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Insurance Road LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Trad Private Equity LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Intellectual Property LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000							Trad Investments I LLC	DE	NIA	Insurance Road LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Private Equity Funds LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Private Equity Funds Subsidiary LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							I TPS Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							HITPS LLC	DE	NIA	I TPS Holding 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

ANNUAL STATEMENT FOR THE YEAR 2021 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	Massachusetts Mut Life Ins Co	63312	86-2294635				Glidpath Holdings Inc.	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			13-1935920				Great American Life Insurance Company	OH	DS	Company	Ownership	100.000	MMLIC		
.0000			31-1422717				AAG Insurance Agency, LLC	KY	DS	Glidpath Holdings Inc.	Ownership	100.000	MMLIC		
.0000	Massachusetts Mut Life Ins Co	93661	31-1021738				Annuity Investors Life Insurance Company	OH	DS	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000			31-1395344				Great American Advisors, LLC	OH	DS	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-3260520				Manhattan National Holding LLC	OH	DS	Great American Life Insurance Company	Ownership	100.000	MMLIC		
.0000	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	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							JFIN GP Adviser LLC	DE	NIA	Company	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 Finance 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	Jefferies Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							Jefferies DLF C Holdings LLC	DE	NIA	JFAM GP LP	Ownership	100.000	MMLIC		
.0000							Jefferies Direct Lending Fund C SPE LLC	DE	NIA	Jefferies DLF C Holdings LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Senior Lending LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Holdings II LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Co-Issuer Corporation	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Europe GP, S.a.r.l.	LUX	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Europe, S.L.P.	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Europe, SCSp	LUX	NIA	JFIN Europe GP, S.a.r.l.	Ownership	100.000	MMLIC		
.0000							Jefferies Finance Business Credit LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Business Credit Fund I LLC	DE	NIA	Jefferies Finance Business Credit LLC	Ownership	100.000	MMLIC		
.0000							JFIN Funding 2021 LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2017-III Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2018 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2019 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2019-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2020 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2021-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver CLO 2021-V Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Fund, L.P.	DE	NIA	Jefferies Finance LLC	Ownership	90.000	MMLIC		
.0000							JFIN Revolver Funding 2021 Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Funding 2021 III Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Revolver Funding 2021 IV Ltd.	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							Apex Credit Holdings LLC	DE	NIA	JFIN Parent LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2012 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2013 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2014-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2015 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2015-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	85.000	MMLIC		
.0000							JFIN CLO 2016 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		
.0000							JFIN CLO 2017-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	100.000	MMLIC		

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SCHEDULE Y

PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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Group Code	Group Name	NAIC Company Code	ID Number	Federal RSSD	CIK	Name of Securities Exchange if Publicly Traded (U.S. or International)	Names of Parent, Subsidiaries Or Affiliates	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			04-1590850				MM Copper Hill Road LLC	DE	DS	Massachusetts Mutual Life Insurance Company	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							MM Investment Holding	CYM	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	DE	DS	MM Investment Holding	Ownership	99.600	MMLIC		
.0000			26-0073611				MassMutual Asset Finance LLC	DE	DS	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
.0000			90-1005837				MMAF Equipment Finance LLC 2013-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			36-4785301				MMAF Equipment Finance LLC 2014-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			38-3969560				MMAF Equipment Finance LLC 2015-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			32-0489588				MMAF Equipment Finance LLC 2016-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
.0000			35-2590691				MMAF Equipment Finance LLC 2017-A	DE	DS	MassMutual Asset Finance LLC	Ownership	100.000	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 2021-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		
.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 Technologies LLC	DE	DS	MML CM LLC	Ownership	100.000	MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.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							Massachusetts Mutual Life Insurance Company								
.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							Massachusetts Mutual Life Insurance Company								
.0000			06-1563535	2881445			The MassMutual Trust Company, FSB	CT	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							MML Private Placement Investment Company I, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.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							Massachusetts Mutual Life Insurance Company								
.0000			04-1590850				MM Private Equity Intercontinental LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			45-2738137				Pioneers Gate LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			04-2854319	2392316			MassMutual Holding LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			06-1597528				MassMutual Assignment Company	NC	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			37-1732913				Fern Street LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000							Steeper Street LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			46-2252944				Haven Life Insurance Agency, LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MassMutual Capital Partners LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.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							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 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							MassMutual Ventures US IV LLC	DE	DS	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
.0000							Open Alternatives LLC	DE	DS	MassMutual Ventures 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	48.900	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.2 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 US LLC	DE	DS	Rothesay Asset Management UK Limited	Ownership	100.000	MMLIC		
.0000							MM Catalyst Fund LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			47-1466022				LifeScore Labs, LLC	MA	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Investors Services, LLC	MA	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				MML Insurance Agency, LLC	MA	DS	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			41-2011634				MMLISI Financial Alliances, LLC	DE	DS	MML Investors Services, LLC	Ownership	100.000	MMLIC		
.0000			45-4000072				MM Asset Management Holding LLC	DE	DS	MassMutual Holding LLC	Ownership	100.000	MMLIC		
.0000			51-0504477				Barings LLC	DE	DS	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
.0000			98-0524271				Baring Asset Management (Asia) Holdings Limited	HKG	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0457465				Baring International Fund Managers (Bermuda) Limited	BMU	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457463				Baring Asset Management (Asia) Limited	HKG	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Baring Asset Management Korea Limited	KOR	DS	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Management (Shanghai) Limited	HKG	DS	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
.0000							Barings Overseas Investment Fund Management (Shanghai) Limited	HKG	DS	Barings Investment Management (Shanghai) Limited	Ownership	100.000	MMLIC		
.0000			98-0457707				Baring SICE (Taiwan) Limited	TWN	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Singapore Pte. Ltd.	SGP	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0236449				Barings Japan Limited	JPN	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Australia Holding Company Pty Ltd	AUS	DS	Baring Asset Management (Asia) Holdings Limited	Ownership	100.000	MMLIC		

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.0000			98-0457456				Barings Australia Pty Ltd	AUS	DS	Baring Australia Holding Company Pty Ltd.	Ownership	100.000	MMLIC		
.0000			80-0875475				Barings Finance LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BCF Europe Funding Limited	IRL	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I LLC	DE	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000							BCF Senior Funding I Designated Activity Company	IRL	DS	Barings Finance LLC	Ownership	100.000	MMLIC		
.0000			04-3238351				Barings Securities LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			98-0437588				Barings Guernsey Limited	GGY	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Europe Limited	GBR	DS	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							Barings Asset Management Spain SL	ESP	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Italy S.r.l.	ITA	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Sweden AB	SWE	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Netherlands B.V.	NLD	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Real Estate UK Holdings Limited	DE	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000			98-0654401				Barings Real Estate Advisers (Continental Europe) Limited	GBR	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-1194368				Barings Real Estate GmbH	DEU	DS	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0241935				Barings Asset Management Limited	GBR	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings European Direct Lending 1 GP LLP	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-1012393				Barings Global Advisors Limited	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457328				Barings International Investment Limited	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457587				Barings International Investment Management Holdings	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000			98-0457576				Barings International Investment Management Holdings	GBR	DS	Barings International Investment Management Holdings	Ownership	100.000	MMLIC		
.0000			98-0524272				Barings International Fund Managers (Ireland) Limited	IRL	DS	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000							Barings Asset Management Switzerland Srl	CHE	DS	Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0497550				Barings Asset Management UK Holdings Limited			Barings Asset Management UK Holdings Limited	Ownership	100.000	MMLIC		
.0000			98-0457586				Barings France SAS	FRA	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Fund Managers Limited	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							BCGSS 2 GP LLP	GBR	DS	Barings Fund Managers Limited	Ownership	100.000	MMLIC		
.0000			98-0457578				Barings Investment Services Limited	GBR	DS	Barings Asset Management Limited	Ownership	100.000	MMLIC		
.0000							Barings Core Fund Feeder 1 GP S.à.r.l.	LUX	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings BME GP S.à.r.l.	GBR	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings GPC GP S.à.r.l.	LUX	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings European Core Property Fund GP Sarl	GBR	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Investment Fund (LUX) GP S.à.r.l.	LUX	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							Barings Umbrella Fund (LUX) GP S.à.r.l.	LUX	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							GPLF4(S) GP S.à.r.l.	LUX	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000							PREIF Holdings Limited Partnership	GBR	DS	Barings Europe Limited	Ownership	100.000	MMLIC		
.0000			98-0432153				Barings (U.K.) Limited	GBR	DS	Barings Guernsey Limited	Ownership	100.000	MMLIC		
.0000							BMC Holdings DE LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	CA	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			81-4258759				Massachusetts Mutual Life Insurance Company	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.000	MMLIC		
.0000			81-4258759				Barings LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000			83-0560183				Massachusetts Mutual Life Insurance Company	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.700	MMLIC		
.0000			83-0560183				Barings LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			82-2932156				Massachusetts Mutual Life Insurance Company	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	11.300	MMLIC		
.0000			82-2932156				Barings LLC	DE	NIA	Barings LLC	BOARD		MMLIC		

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.0000			46-2344300				Intermodal Holdings II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	18.000	MMLIC		
.0000			46-2344300				Intermodal Holdings II LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Novation Companies, Inc.	MD	NIA	Massachusetts Mutual Life Insurance Company	Ownership	16.500	MMLIC		
.0000							Novation Companies, Inc.	MD	NIA	Barings LLC	Influence		MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	31.500	MMLIC		
.0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	19.900	MMLIC		
.0000			81-4065378				Remington L & W Holdings LLC	DE	NIA	Barings LLC	Influence		MMLIC		
.0000							Tamiami Citrus, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.700	MMLIC		
.0000							Tamiami Citrus, LLC	DE	NIA	Barings LLC	Management/Board		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							Techquity, LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	15.600	MMLIC		
.0000							Techquity, LP	DE	NIA	Barings LLC	Influence		MMLIC		
.0000			46-0687392				Validus Holdings Company LLC	DE	NIA	Barings LLC	Ownership	40.400	MMLIC		
.0000							Validus Pharmaceuticals LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	70.000	MMLIC		
.0000							Validus Pharmaceuticals LLC	DE	NIA	Barings LLC	BOARD		MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
.0000							VGS Acquisition Holding, LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000							Aland Royalty GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Alaska Future Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							BAI Funds SLP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Asset-Based Income Fund (US) GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings CMS Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Hotel Opportunity Venture I GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Investment Series LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Emerging Generation Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings ERS PE Emerging Manager III GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Investment Funds (U.S.) Management LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			04-1590850				Barings CLO Investment Partners GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Core Property Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Direct Lending GP Ltd.	CYM	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund LP	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	59.100	MMLIC		
.0000			84-3784245				Barings Emerging Generation Fund LP	DE	DS	Barings LLC	Management		MMLIC		
.0000							Barings Global Energy Infrastructure Advisors, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings North American Private Loan Fund Management II, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings Global Real Assets Fund GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000							Barings GPSF	DE	DS	Barings LLC	Ownership	100.000	MMLIC		
.0000			84-5063008				Barings Small Business Fund LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	73.500	MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			84-5063008				Barings Small Business Fund LLC	DE	DS	Barings LLC	Management				
.0000			98-0536233				Benton Street Advisors, Inc.	CVI	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BHOVI Incentive LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BIG Real Estate Fund GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BRECS VII GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							BREDIF GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							CHY Venture GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							CREX X GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				Great Lakes III GP, LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Lake Jackson LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				Loan Strategies Management LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			41-2280126				Mezzco III LLC	DE	DS	Barings LLC	Ownership	99.300	MLLIC		
.0000			80-0920285				Mezzco IV LLC	DE	DS	Barings LLC	Ownership	99.300	MLLIC		
.0000							Mezzco Australia II LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							RECSA-NY GP LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				SBNP SIA II LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							SBNP SIA III LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				Somerset Special Opportunities Management LLC	DE	DS	Barings LLC	Ownership	100.000	MLLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000							Amherst Long Term Holdings, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	24.500	MLLIC		
.0000			04-3313782				MassMutual International LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							MassMutual Solutions LLC	DE	DS	MassMutual International LLC	Ownership	100.000	MLLIC		
.0000							Haven Technologies Asia Limited	HKG	DS	MassMutual Solutions LLC	Ownership	100.000	MLLIC		
.0000							Yunfeng Financial Group Limited	HKG	DS	MassMutual International LLC	Ownership	24.900	MLLIC		
.0000							MassMutual Asia Limited (SPV)	HKG	DS	MassMutual International LLC	Ownership	100.000	MLLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.0000							MML Mezzanine Investor II, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.0000							MML Mezzanine Investor III, LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	11.100	MLLIC		
.0000			27-3576835				MassMutual External Benefits Group LLC	DE	DS	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.0000							100 w. 3rd Street LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.0000							2160 Grand Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.000	MLLIC		
.0000			82-2432216				Massachusetts Mutual Life Insurance Company								
.0000							300 South Tryon Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				Massachusetts Mutual Life Insurance Company								
.0000							300 South Tryon LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	72.900	MLLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							Barings Affordable Housing Mortgage Fund I LLC	DE	NIA	Barings LLC	Management		MLLIC		
.0000			61-1902329				Massachusetts Mutual Life Insurance Company								
.0000							Barings Affordable Housing Mortgage Fund II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			61-1902329				Massachusetts Mutual Life Insurance Company								
.0000							Barings Affordable Housing Mortgage Fund II LLC	DE	NIA	Barings LLC	Management		MLLIC		
.0000							Massachusetts Mutual Life Insurance Company								
.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			85-3036663				Barings Affordable Housing Mortgage Fund III LLC	DE	NIA	Barings LLC	Management		MMLIC		
.0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	11.200	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							Barings Emerging Markets Corporate Bond Fund			Massachusetts Mutual Life Insurance Company	Ownership/Influence	48.700	MMLIC		
.0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA						
.0000							Barings European Real Estate Debt Income Fund	IRL	NIA	Barings LLC	Ownership	15.200	MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	94.800	MMLIC		
.0000							Barings European Real Estate Debt Income Fund	LUX	NIA	Barings LLC	Influence		MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	25.500	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	C.M. Life Insurance Company	Ownership	1.600	MMLIC		
.0000			98-1206017				Babson Capital Global Special Situation Credit Fund 2	DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1506417				Babson Capital Loan Strategies Fund, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	75.700	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			Massachusetts Mutual Life Insurance Company	Ownership/Influence	53.900	MMLIC		
.0000							Barings US High Yield Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
.0000							Babson CLO Ltd. 2013-I	CYM	NIA	Barings LLC	Influence		MMLIC		3
.0000							Babson CLO Ltd. 2014-I	CYM	NIA	Barings LLC	Influence		MMLIC		2
.0000							Babson CLO Ltd. 2015-I	CYM	NIA	Barings LLC	Influence		MMLIC		4
.0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		5
.0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Babson CLO Ltd. 2016-II	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO Ltd. 2017-I	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-III	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000							Barings CLO 2018-IV	CYM	NIA	Barings LLC	Influence		MMLIC		
.0000			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							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			00-3750378				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		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

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.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.300	MLLIC		
.0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	62.700	MLLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	C.M. Life Insurance Company	Ownership	5.500	MLLIC		
.0000							Barings Euro Value Add II (BREEVA II)	LUX	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	44.600	MLLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	C.M. Life Insurance Company	Ownership	5.000	MLLIC		
.0000							Barings Real Estate European Value Add I SCSp	GBR	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Real Estate Debt Income Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	71.800	MLLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership		MLLIC		
.0000			85-3449260				Barings Real Estate Debt Income Fund LP	DE	NIA	Barings LLC	Management		MLLIC		
.0000			82-5330194				Barings Global Em. Markets Equity Fund	NC	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Energy Infrastructure Fund I LP	CYM	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	99.200	MLLIC		
.0000			98-1332384				Barings Global Energy Infrastructure Fund I LP	CYM	NIA	Baring Asset Management Limited	Management		MLLIC		
.0000							Barings Global Dividends Champion Fund	IRL	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Inv. Grade Strat Fund	IRL	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Private Loan Fund	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	8.900	MLLIC		
.0000							Barings Global Private Loan Fund	LUX	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Real Assets Fund LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	42.500	MLLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.500	MLLIC		
.0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Barings LLC	Management		MLLIC		
.0000			82-3867745				Barings Global Special Situations Credit Fund 3	IRL	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	16.100	MLLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	67.100	MLLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	C.M. Life Insurance Company	Ownership	3.500	MLLIC		
.0000							Barings Global Special Situations Credit 4 Delaware	DE	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership	14.400	MLLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	C.M. Life Insurance Company	Ownership	0.800	MLLIC		
.0000							Barings Global Special Situations Credit 4 LUX	LUX	NIA	Barings LLC	Management		MLLIC		
.0000							Barings Global Special Situations Credit Fund 3	IRL	NIA	Barings LLC	Management		MLLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	CT	NIA	Barings LLC	Ownership/Influence	94.500	MLLIC		
.0000			87-0977058				Barings Hotel Opportunity Venture	CT	NIA	Barings LLC	Management		MLLIC		
.0000			86-3661023				Barings Innovations & Growth Real Estate Fund	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	46.500	MLLIC		
.0000							Barings Innovations & Growth Real Estate Fund	DE	NIA	C.M. Life Insurance Company	Ownership	0.800	MLLIC		
.0000			86-3661023				Barings Middle Market CLO 2017-I Ltd & LLC	CYM	NIA	Barings LLC	Influence		MLLIC		

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.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			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	37.400	MMLIC		
.0000			38-4010344				Barings North American Private Loan Fund LP	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	33.700	MMLIC		
.0000			98-1332384				Barings RE Credit Strategies VII LP	.DE	NIA	Baring Asset Management Limited	Management		MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	13.100	MMLIC		
.0000			87-1262754				Barings Transportation Fund LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	9.700	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	74.400	MMLIC		
.0000							Braemar Energy Ventures I, L.P.	.DE	NIA	C.M. Life Insurance Company	Ownership	1.100	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	9.100	MMLIC		
.0000							Barings European Core Property Fund SCSp	.LUX	NIA	C.M. Life Insurance Company	Ownership	0.600	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	20.000	MMLIC		
.0000			38-4059932				Benchmark 2018-B2 Mortgage Trust	.NY	NIA	Barings LLC	Influence		MMLIC		
.0000							Benchmark 2018-B4	.NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4096530				Benchmark 2018-B8	.NY	NIA	Barings LLC	Influence		MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	.DE	NIA	MassMutual Holding LLC	Ownership/Influence	21.000	MMLIC		
.0000			20-5578089				Barings Core Property Fund LP	.DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	24.500	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	.DE	NIA	C.M. Life Insurance Company	Ownership	2.700	MMLIC		
.0000			46-5432619				Cornerstone Real Estate Fund X LP	.DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
.0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC	.MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV LLC	.MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	32.100	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	.DE	NIA	Barings LLC	Management		MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	41.400	MMLIC		
.0000			37-1708623				Great Lakes III, L.P.	.DE	NIA	Barings LLC	Management		MMLIC		
.0000							GIA EU Holdings - Emerson JV Sarl	.LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.600	MMLIC		
.0000							GIA EU Holdings - Emerson JV Sarl	.LUX	NIA	Barings LLC	Management		MMLIC		
.0000			38-4041011				JPIMCC Commercial Mortgage Securities Trust 2017-JP7	.NY	NIA	Barings LLC	Influence		MMLIC		
.0000			38-4032059				JPIMDB Commercial Mortgage Securities Trust 2017-C5	.NY	NIA	Barings LLC	Influence		MMLIC		
.0000			82-1512591				KKR-MM Vector LP	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MMLIC		
.0000			46-4255307				Marco Hotel LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			04-1590850				Miami Douglas One GP LLC	.DE	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		

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.0000			04-1590850				Miami Douglas One GP LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.500	MLLIC		
.0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Influence		MLLIC		
.0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	C.M. Life Insurance Company	Influence		MLLIC		
.0000			04-1590850				Miami Douglas One LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			04-1590850				Miami Douglas One LP	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MLLIC		
.0000			04-1590850				Miami Douglas Two LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			04-1590850				Miami Douglas Two LP	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MLLIC		
.0000			04-1590850				Miami Douglas Three MM LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	91.500	MLLIC		
.0000			87-4021641				MM BIG Peninsula Co-Invest Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MLLIC		
.0000			85-3886824				NYDIG Digital Assets Fund II LP	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			45-3623262				HB Naples Golf Owner LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							MM CM Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MLLIC		
.0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC	Management		MLLIC		
.0000			82-4411267				RB Apartments LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			75-2901061				Reston Arboretum LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	40.100	MLLIC		
.0000			20-8856877				Somerset Special Opportunities Fund L.P.	DE	NIA	C.M. Life Insurance Company	Ownership	1.900	MLLIC		
.0000			04-1590850				SouthPointe Industrial LLC	DE	NIA	Barings LLC	Ownership	100.000	MLLIC		
.0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	Barings LLC	Management		MLLIC		
.0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	18.600	MLLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership/Influence	100.000	MLLIC		
.0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NIA	Barings LLC	Management		MLLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	59.600	MLLIC		
.0000			04-1590850				Trailside MM Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.400	MLLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	89.300	MLLIC		
.0000			83-1325764				Washington Gateway Two LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.700	MLLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	83.900	MLLIC		
.0000			32-0574045				Washington Gateway Three LLC	DE	NIA	C.M. Life Insurance Company	Ownership	11.400	MLLIC		
.0000			04-1590850				West 46th Street Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							Babson Capital Loan Strategies Master Fund LP	CYV	NIA	Barings LLC	Management		MLLIC		
.0000							Barings China Aggregate Bond Private Securities Investment Fund	CHN	NIA	Barings LLC	Management		MLLIC		

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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			47-3790192				Barings European Growth Trust Fund	GBR	NIA	Barings LLC	Ownership/Influence	21.400	MLLIC		
.0000							Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		MLLIC		
.0000							CCIC Fund	CHN	NIA	Barings LLC	Ownership/Influence	60.100	MLLIC		
.0000			71-1018134				Great Lakes II LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.600	MLLIC		
.0000			71-1018134				Great Lakes III LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.100	MLLIC		
.0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	40.000	MLLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	65.000	MLLIC		
.0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.800	MLLIC		
.0000							Barings California Mortgage Fund IV	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	LUX	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MLLIC		
.0000							Barings Umbrella Fund LUX SCSp SICAV RAIF	LUX	NIA	C.M. Life Insurance Company	Ownership	2.300	MLLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	10.000	MLLIC		
.0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund I LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund II LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			95-4207717				Cornerstone California Mortgage Fund III LLC	CA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.000	MLLIC		
.0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.900	MLLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Barings LLC	Management		MLLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Barings LLC	Management		MLLIC		
.0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MLLIC		
.0000			20-0348173				CREA/PPC Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	31.300	MLLIC		
.0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	94.400	MLLIC		
.0000			04-1590850				Euro Real Estate Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MLLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	67.300	MLLIC		
.0000			20-3347091				Fan Pier Development LLC	DE	NIA	C.M. Life Insurance Company	Ownership	5.900	MLLIC		
.0000			04-1590850				GIA EU Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			81-5360103				Landmark Manchester Holdings LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MLLIC		
.0000			04-1590850				MM Brookhaven Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MLLIC		

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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			04-1590850				MM East South Crossing Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.000	MMLIC		
.0000			04-1590850				MM Horizon Savannah Member LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	88.700	MMLIC		
.0000			04-1590850				MM Horizon Savannah Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	3.700	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	10.800	MMLIC		
.0000			80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.000	MMLIC		
.0000			04-1590850				PACO France Logistics LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			82-3393166				Portland 400 Sixth Manager LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	5.000	MMLIC		
.0000							Salomon Brothers Commercial Mortgage Trust 2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence		MMLIC		
.0000			27-2977720				Savgrass Village Shopping Center LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	84.200	MMLIC		
.0000			27-2977720				Savgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MMLIC		
.0000							STOA Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		
.0000			81-5273574				Three PW Office Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.100	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	35.000	MMLIC		
.0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	35.000	MMLIC		
.0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.700	MMLIC		
.0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
.0000			51-0529328		0000927972	00	MassMutual Premier Main Street Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	90.200	MMLIC		
.0000			26-3229251		0000927972	00	MassMutual Premier Strategic Emerging Markets Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	3.400	MMLIC		
.0000			01-0821120		0000916053	00	MassMutual Select Diversified Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.800	MMLIC		
.0000			04-3512593		0000916053	00	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.100	MMLIC		
.0000			42-1710935		0000916053	00	MassMutual Select Mid-Cap Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	26.000	MMLIC		
.0000			02-0769954		0000916053	00	MassMutual Select Small Capital Value Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			04-3584140		0000916053	00	MassMutual Select Small Company Value Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	9.600	MMLIC		
.0000			82-3347422		0000916053	00	MassMutual Select T. Rowe Price Retirement 2005 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	6.100	MMLIC		
.0000			82-3355639		0000916053	00	MassMutual Select T. Rowe Price Retirement 2010 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3382389		0000916053	00	MassMutual Select T. Rowe Price Retirement 2015 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3396442		0000916053	00	MassMutual Select T. Rowe Price Retirement 2020 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3417420		0000916053	00	MassMutual Select T. Rowe Price Retirement 2025 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		

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PART 1A - DETAIL OF INSURANCE HOLDING COMPANY SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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.0000			82-3430358		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2030 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3439837		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3451779		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2040 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3472295		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3481715		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2050 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3502011		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3525148		0000916053	QO	MassMutual Select T. Rowe Price Retirement 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			82-3533944		0000916053	QO	MassMutual Select T. Rowe Price Retirement Balanced Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			46-4257056				MML Series International Equity Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			47-3517233				MML Series II Asset Momentum Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
.0000			47-3529636				MML Series II Dynamic Bond Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			47-3544629				MML Series II Equity Rotation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	95.200	MMLIC		
.0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	97.100	MMLIC		
.0000			27-1933389		0000916053	QO	MassMutual RetireSMART 2035 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.500	MMLIC		
.0000			27-1932769		0000916053	QO	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	6.400	MMLIC		
.0000			46-3289207		0000916053	QO	MassMutual RetireSMART 2055 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	24.000	MMLIC		
.0000			47-5326235		0000916053	QO	MassMutual RetireSMART 2060 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	52.600	MMLIC		
.0000			45-1618155		0000916053	QO	MassMutual 20/80 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			45-1618222		0000916053	QO	MassMutual 80/20 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			03-0532464		0000916053	QO	MassMutual RetireSMART In Retirement Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	2.100	MMLIC		
.0000			45-1618262		0000916053	QO	MassMutual 40/60 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		
.0000			45-1618046		0000916053	QO	MassMutual 60/40 Allocation Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Influence		MMLIC		

Asterisk	Explanation
1	Massachusetts Mutual Life Insurance Company owns 14.23% of the affiliated debt of Jefferies Finance LLC
2	Debt investors own .6% and includes only Great Lakes III, L.P.
3	Debt investors own 9.6% and includes only Babson Capital Loan Strategies Fund, L.P.
4	Debt investors own .5% and includes only Great Lakes III, L.P.
5	Debt investors own .2% and includes only Great Lakes III, L.P.

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

Asterisk	Explanation

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
65935	04-1590850	Massachusetts Mutual Life Insurance Company (MMLIC)	1,477,406,409	(2,744,902,053)	20,000,000						(1,247,495,644)	(98,811,453)
93432	06-1041383	C.M. Life Insurance Company	(141,134,536)	(10,497,636)							(151,632,172)	71,934,015
70416	43-0581430	MML Bay State Life Insurance Company	(27,000,035)								(27,000,035)	10,555,770
	04-1590850	2160 Grand Manager LLC		5,384,420							5,384,420	
	83-0560183	Aland Royalty Holdings LP	(402,959)	(259,507)							(662,466)	
	37-1506417	Babson Capital Loan Strategies Fund, L.P.										
		Barings Affordable Housing Mortgage Fund I LLC	(1,730,081)								(1,730,081)	
		Barings Affordable Housing Mortgage Fund II LLC	(4,281,158)	34,857,993							30,576,835	
61-1902329		Barings Affordable Housing Mortgage Fund III LLC	(2,314,091)	48,293,619							45,979,528	
85-3036663		Barings Affordable Housing Mortgage Fund IV LLC	(702,122)	4,826,945							4,124,823	
36-4868350		Barings Asset-Based Income Fund (US) LP		14,661,673							14,661,673	
		Barings California Mortgage Fund IV		34,484							34,484	
81-0841854		Barings CLO Investment Partners LP	(11,142,482)	748,242							(10,394,240)	
84-3784245		Barings Emerging Generation Fund LP	(4,152,235)	10,923,511							6,771,276	
		Barings European Core Property Fund SCSp	(494,634)	(1,565)							(496,199)	
46-5001122		Barings European Private Loan Fund III A		45,276,000							45,276,000	
		Barings European Real Estate Debt Income Fund	(6,233,129)	64,265,365							58,032,236	
80-0875475		Barings Finance LLC			(20,000,000)						(20,000,000)	
		Barings Global Private Loan Fund	(4,325,754)	(23,357,606)							(27,683,360)	
82-3867745		Barings Global Real Assets Fund LP		10,210,705							10,210,705	
		Barings Global Special Situations Credit Fund 3	(21,248,892)	(3,916,604)							(25,165,497)	
		Barings Global Special Situations Credit Fund 4 Delaware		13,814,280							13,814,280	
		Barings Global Special Situations Credit Fund 4 LUX	(33,481)	13,682,306							13,648,824	
87-0977058		Barings Hotel Opportunity Venture		7,950,264							7,950,264	
86-3661023		Barings Innovations & Growth Real Estate Fund	(920,114)	70,439,770							69,519,656	
38-4010344		Barings North American Private Loan Fund LP	(1,749,937)	(7,626,660)							(9,376,597)	
98-1332384		Barings RE Credit Strategies VII LP	(9,522,257)	5,607,140							(3,915,117)	
85-3449260		Barings Real Estate Debt Income Fund LP	(5,625,555)	90,614,931							84,989,376	
		Barings Real Estate European Value Add I SCSp	(24,704,713)	(11,585,861)							(36,290,575)	
84-5063008		Barings Small Business Fund LLC		3,723,213							3,723,213	
87-1262754		Barings Transportation Fund LP		36,369,620							36,369,620	
		Barings Umbrella Fund LUX SCSp SICAV RAIF		33,438,743							33,438,743	

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SCHEDULE Y

PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES

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NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
	04-1590850	Berkshire Way LLC		550,000							550,000	
		Braemar Energy Ventures I, L.P.		122,024							122,024	
	06-1041383	CML Mezzanine Investor III, LLC	(830)	(12,237)							(13,067)	
		CML Special Situations Investor LLC	(106,025)	(104,130)							(210,155)	
	82-3307907	Cornbrook PRS Holdings LLC		3,448,455							3,448,455	
	95-4207717	Cornerstone California Mortgage Fund I LLC										
			(3,527,026)	(2,419,174)							(5,946,200)	
	95-4207717	Cornerstone California Mortgage Fund II LLC										
			(2,013,552)	8,925,850							6,912,298	
	95-4207717	Cornerstone California Mortgage Fund III LLC										
			(878,608)	32,872,906							31,994,298	
	56-2630592	Cornerstone Fort Pierce Development LLC		149,863							149,863	
	45-2632610	Cornerstone Permanent Mortgage Fund	(5,815,415)	76,662							(5,738,753)	
	61-1750537	Cornerstone Permanent Mortgage Fund II	(4,881,964)	(267,286)							(5,149,250)	
	35-2531693	Cornerstone Permanent Mortgage Fund III LLC										
			(5,439,657)	10,772,814							5,333,156	
	61-1793735	Cornerstone Permanent Mortgage Fund IV LLC										
			(3,707,628)	25,628,631							21,921,003	
	46-5432619	Cornerstone Real Estate Fund X LP	(13,082,537)	(565,017)							(13,647,553)	
	81-0890084	CREA Madison Member LLC		(21,600,000)							(21,600,000)	
	20-0348173	CREA/PPC Venture LLC	1,650,000	(1,650,000)								
	82-2783393	Danville Riverwalk Venture, LLC		650,526							650,526	
		EM Opportunities LLC		375,000							375,000	
	04-1590850	Euro Real Estate Holdings LLC		10,921,066							10,921,066	
	20-3347091	Fan Pier Development LLC	(260,688)								(260,688)	
	90-0991195	Gateway Mezzanine Partners II LP		(9,842,702)							(9,842,702)	
	04-1590850	GIA EU Holdings LLC		12,702,667							12,702,667	
	71-1018134	Great Lakes II LLC	(850,237)	2,395							(847,842)	
	37-1708623	Great Lakes III, L.P.	(1,362,417)	(1,235,265)							(2,597,683)	
	04-1590850	Insurance Road LLC	(388,769,775)	(22,427,545)							(411,197,320)	
	46-2344300	Intermodal Holdings II LLC	(345,918)	(615,282)							(961,200)	
	82-1512591	KKR-MM Vector LP	(10,596,625)								(10,596,625)	
	81-5360103	Landmark Manchester Holdings LLC		(17,037,155)							(17,037,155)	
	04-2854319	MassMutual Holding LLC	(544,000,000)	63,226,461							(480,773,539)	
	04-3313782	MassMutual International LLC		(186,662,868)							(186,662,868)	
	04-1590850	MassMutual Private Equity Funds LLC		75,572,288							75,572,288	
	42-1710935	MassMutual Select Mid-Cap Value Fund	(11,856)								(11,856)	
	06-1563535	The MassMutual Trust Company, FSB	(5,000,000)								(5,000,000)	
	04-1590850	Miami Douglas Three MM LLC		17,714,932							17,714,932	
	04-1590850	Miami Douglas Two GP LLC		1,265							1,265	
	04-1590850	Miami Douglas Two LP		12,651,363							12,651,363	
		MM/Barings Multifamily TEBS 2020 LLC		(188,306)							(188,306)	
	87-4021641	MM BIG Peninsula Co-Invest Member LLC		77,104,921							77,104,921	
	04-1590850	MM Brookhaven Member LLC		44,893,110							44,893,110	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES

1	2	3	4	5	6	7	8	9	10	11	12	13
NAIC Company Code	ID Number	Names of Insurers and Parent, Subsidiaries or Affiliates	Shareholder Dividends	Capital Contributions	Purchases, Sales or Exchanges of Loans, Securities, Real Estate, Mortgage Loans or Other Investments	Income/ (Disbursements) Incurred in Connection with Guarantees or Undertakings for the Benefit of any Affiliate(s)	Management Agreements and Service Contracts	Income/ (Disbursements) Incurred Under Reinsurance Agreements	*	Any Other Material Activity Not in the Ordinary Course of the Insurer's Business	Totals	Reinsurance Recoverable/ (Payable) on Losses and/or Reserve Credit Taken/(Liability)
		MM CM Holding LLC		44,613,283							44,613,283	
	04-1590850	MM Copper Hill Road LLC		3,457,471							3,457,471	
	81-3000420	MM Debt Participations LLC		110,000							110,000	
	04-1590850	MM East South Crossing Member LLC		16,223,209							16,223,209	
		MM Global Capabilities I LLC		(224,408)							(224,408)	
		MM Global Capabilities III LLC		199,826							199,826	
		MM Global Capabilities II LLC		199,711							199,711	
	04-1590850	MM Horizon Savannah Member LLC		43,417,838							43,417,838	
		MassMutual MCAM Insurance Company, Inc.		15,000,000							15,000,000	
	04-1590850	MM Rothesay Holdco US LLC		1,884,294,587							1,884,294,587	
		MML Investment Advisers, LLC	(90,695,861)	(6)							(90,695,867)	
	04-1590850	MML Mezzanine Investor II, LLC		(828,206)							(828,206)	
	04-1590850	MML Mezzanine Investor III, LLC	(23,358)	(93,913)							(117,271)	
	04-1590850	MML Private Equity Fund Investor LLC	(70,277,135)	60,905,908							(9,371,227)	
	47-3517233	MML Series II Asset Momentum Fund	(13,821,144)								(13,821,144)	
	47-3544629	MML Series II Equity Rotation Fund	(13,915,792)								(13,915,792)	
	47-3559064	MML Series II Special Situations Fund	(9,262,818)								(9,262,818)	
		MML Special Situations Investor LLC	(1,661,064)	(2,352,698)							(4,013,761)	
	04-1590850	New Haven Holdco LLC		76,938,243							76,938,243	
	85-3886824	NYDIG Digital Assets Fund II LP		2,415,693							2,415,693	
	80-0948028	One Harbor Shore LLC		513,000							513,000	
	04-1590850	PACO France Logistics LLC		(545,135)							(545,135)	
	82-3393166	Portland 400 Sixth Manager LLC		5,605,000							5,605,000	
	46-5460309	Red Lake Ventures, LLC		28,364							28,364	
	81-4065378	Remington L & W Holdings LLC	(497,277)	(1,034,336)							(1,531,613)	
		Rothesay Life Plc										16,321,668
	27-2977720	Sawgrass Village Shopping Center LLC	(1,629,133)	(1,345,867)							(2,975,000)	
		STOA Holding LLC		(2,279,679)							(2,279,679)	
		Tamiami Citurus, LLC		607,107							607,107	
	81-5273574	Three PW Office Holding LLC		4,046,308							4,046,308	
	47-5322979	Timberland Forest Holding LLC		(477,755)							(477,755)	
	41-2280129	Tower Square Capital Partners IIIA, L.P.	(14,282,993)	3,417,005							(10,865,988)	
	35-2484550	Twenty Two Liberty LLC	(780,000)								(780,000)	
	82-3250684	Unna, Dortmund Holding LLC		(1,069,321)							(1,069,321)	
	45-5401109	Washington Gateway Apartments Venture LLC										(3,840,910)
			(3,840,910)								(3,840,910)	
	32-0574045	Washington Gateway Three LLC		1,169,210							1,169,210	
	83-1325764	Washington Gateway Two LLC		377,598							377,598	
	9999999	Control Totals							XXX			

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE Y

PART 3 - ULTIMATE CONTROLLING PARTY AND LISTING OF OTHER U.S. INSURANCE GROUPS OR ENTITIES UNDER THAT ULTIMATE CONTROLLING PARTY'S CONTROL

1 Insurers in Holding Company	2 Owners with Greater Than 10% Ownership	3 Ownership Percentage Column 2 of Column 1	4 Granted Disclaimer of Control/ Affiliation of Column 2 Over Column 1 (Yes/No)	5 Ultimate Controlling Party	6 U.S. Insurance Groups or Entities Controlled by Column 5	7 Ownership Percentage (Column 5 of Column 6)	8 Granted Disclaimer of Control/ Affiliation of Column 5 Over Column 6 (Yes/No)
Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO
C.M. Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO
MML Bay State Life Insurance Company	C.M. Life Insurance Company	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO
Great American Life Insurance Company	Glidepath Holdings Inc.	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO
Annuity Investors Life Insurance Company	Great American Life Insurance Company	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO
Manhattan National Life Insurance Company	Manhattan National Holding LLC	100.000	NO	Massachusetts Mutual Life Insurance Company	Massachusetts Mutual Life Insurance Company	100.000	NO

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

The following supplemental reports are required to be filed as part of your statement filing unless specifically waived by the domiciliary state. However, in the event that your domiciliary state waives the filing requirement, your response of WAIVED to the specific interrogatory will be accepted in lieu of filing a "NONE" report and a bar code will be printed below. If the supplement is required of your company but is not being filed for whatever reason enter SEE EXPLANATION and provide an explanation following the interrogatory questions.

	Responses
MARCH FILING	
1. Will the Supplemental Compensation Exhibit be filed with the state of domicile by March 1?	YES
2. Will the confidential Risk-based Capital Report be filed with the NAIC by March 1?	YES
3. Will the confidential Risk-based Capital Report be filed with the state of domicile, if required, by March 1?	YES
4. Will an actuarial opinion be filed by March 1?	YES
APRIL FILING	
5. Will Management's Discussion and Analysis be filed by April 1?	YES
6. Will the Life, Health & Annuity Guaranty Association Assessable Premium Exhibit - Parts 1 and 2 be filed with the state of domicile and the NAIC by April 1? (Not applicable to fraternal benefit societies)	YES
7. Will the Supplemental Investment Risks Interrogatories be filed by April 1?	YES
JUNE FILING	
8. Will an audited financial report be filed by June 1?	YES
9. Will Accountant's Letter of Qualifications be filed with the state of domicile and electronically with the NAIC by June 1?	YES

The following supplemental reports are required to be filed as part of your annual statement filing **if your company is engaged in the type of business covered by the supplement. 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.

MARCH FILING	
10. Will Schedule SIS (Stockholder Information Supplement) be filed with the state of domicile by March 1? (Not applicable to fraternal benefit societies) ...	NO
11. Will the Medicare Supplement Insurance Experience Exhibit be filed with the state of domicile and the NAIC by March 1?	YES
12. Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC by March 1?	NO
13. Will the actuarial opinion on participating and non-participating policies as required in Interrogatories 1 and 2 to Exhibit 5 be filed with the state of domicile and electronically with the NAIC by March 1?	YES
14. Will the actuarial opinion on non-guaranteed elements as required in interrogatory #3 to Exhibit 5 be filed with the state of domicile and electronically with the NAIC by March 1?	YES
15. Will the actuarial opinion on X-Factors be filed with the state of domicile and electronically with the NAIC by March 1?	YES
16. Will the actuarial opinion on Separate Accounts Funding Guaranteed Minimum Benefit be filed with the state of domicile and electronically with the NAIC by March 1?	YES
17. Will the actuarial opinion on Synthetic Guaranteed Investment Contracts be filed with the state of domicile and electronically with the NAIC by March 1?	YES
18. Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC by March 1?	NO
19. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC by March 1?	NO
20. Will the Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI be filed with the state of domicile and electronically with the NAIC by March 1?	NO
21. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Average Market Value) be filed with the state of domicile and electronically with the NAIC by March 1?	NO
22. Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) be filed with the state of domicile and electronically with the NAIC by March 1?	NO
23. Will the C-3 RBC Certifications required under C-3 Phase I be filed with the state of domicile and electronically with the NAIC by March 1?	YES
24. Will the C-3 RBC Certifications required under C-3 Phase II be filed with the state of domicile and electronically with the NAIC by March 1?	YES
25. Will the Actuarial Certifications Related to Annuity Nonforfeiture Ongoing Compliance for Equity Indexed Annuities be filed with the state of domicile and electronically with the NAIC by March 1?	NO

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

- | | | |
|-----|---|-----|
| 26. | Will the actuarial opinion required by the Modified Guaranteed Annuity Model Regulation be filed with the state of domicile and electronically with the NAIC by March 1? | NO |
| 27. | Will the Actuarial Certification regarding the use of 2001 Preferred Class Tables required by the Model Regulation Permitting the Recognition of Preferred Mortality Tables for Use in Determining Minimum Reserve Liabilities be filed with the state of domicile and electronically with the NAIC by March 1? | YES |
| 28. | Will the Worker's Compensation Carve-Out Supplement be filed by March 1? (Not applicable to fraternal benefit societies) | NO |
| 29. | Will Supplemental Schedule O be filed with the state of domicile and the NAIC by March 1? | YES |
| 30. | Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC by March 1? | NO |
| 31. | Will an approval from the reporting entity's state of domicile for relief related to the five-year rotation requirement for lead audit partner be filed electronically with the NAIC by March 1? | NO |
| 32. | Will an approval from the reporting entity's state of domicile for relief related to the one-year cooling off period for independent CPA be filed electronically with the NAIC by March 1? | NO |
| 33. | Will an approval from the reporting entity's state of domicile for relief related to the Requirements for Audit Committees be filed electronically with the NAIC by March 1? | NO |
| 34. | Will the VM-20 Reserves Supplement be filed with the state of domicile and the NAIC by March 1? | YES |
| 35. | Will the Health Care Receivables Supplement be filed with the state of domicile and the NAIC by March 1? | NO |

APRIL FILING

- | | | |
|-----|--|-----|
| 36. | Will the confidential Regulatory Asset Adequacy Issues Summary (RAAIS) required by the Valuation Manual be filed with the state of domicile by April 1? | YES |
| 37. | Will the Long-Term Care Experience Reporting Forms be filed with the state of domicile and the NAIC by April 1? | YES |
| 38. | Will the Credit Insurance Experience Exhibit be filed with the state of domicile and the NAIC by April 1? (Not applicable to fraternal benefit societies) ... | NO |
| 39. | Will the Accident and Health Policy Experience Exhibit be filed by April 1? | YES |
| 40. | Will the Supplemental Health Care Exhibit (Parts 1, 2 and 3) be filed with the state of domicile and the NAIC by April 1? | NO |
| 41. | Will the regulator only (non-public) Supplemental Health Care Exhibit's Expense Allocation Report be filed with the state of domicile and the NAIC by April 1? | NO |
| 42. | Will the confidential Actuarial Memorandum required by Actuarial Guideline XXXVIII 8D be filed with the state of domicile by April 30? | NO |
| 43. | Will the Supplemental Term and Universal Life Insurance Reinsurance Exhibit be filed with the state of domicile and the NAIC by April 1? | YES |
| 44. | Will the Variable Annuities Supplement be filed with the state of domicile and the NAIC by April 1? | YES |
| 45. | Will the confidential Executive Summary of the PBR Actuarial Report be filed with the state of domicile by April 1? | YES |
| 46. | Will the confidential Life Summary of the PBR Actuarial Report be filed with the state of domicile by April 1? | YES |
| 47. | Will the confidential Variable Annuities Summary of the PBR Actuarial Report be filed with the state of domicile by April 1? | YES |













AUGUST FILING

- | | | |
|-----|--|-----|
| 48. | Will Management's Report of Internal Control Over Financial Reporting be filed with the state of domicile by August 1? | YES |
|-----|--|-----|

Explanations:

- | | |
|-----|---|
| 10. | As a mutual company this not required |
| 12. | Not required |
| 18. | Not required |
| 19. | Not required |
| 20. | Not required |
| 21. | Not required |
| 22. | Not required |
| 25. | Not required |
| 26. | Not required |
| 28. | This line of business is not written by the company. |
| 30. | Not required |
| 31. | Not required |
| 32. | Not required |
| 33. | Not required |
| 35. | This line of business is not written by the company. |
| 38. | This line of business is not written by the company. |
| 40. | Not required |
| 41. | No expense were allocated to these lines of business. |
| 42. | This line of business is not written by the company. |

Bar Codes:

- | | | |
|-----|--|--|
| 10. | SIS Stockholder Information Supplement [Document Identifier 420] |  |
| 12. | Trusted Surplus Statement [Document Identifier 490] |  |
| 18. | Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 445] |  |
| 19. | Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 446] |  |
| 20. | Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI [Document Identifier 447] |  |
| 21. | Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI [Document Identifier 448] |  |
| 22. | Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) [Document Identifier 449] |  |
| 25. | Actuarial Certifications Related to Annuity Nonforfeiture Ongoing Compliance for Equity Indexed Annuities [Document Identifier 452] |  |
| 26. | Modified Guaranteed Annuity Model Regulation [Document Identifier 453] |  |
| 28. | Workers' Compensation Carve-Out Supplement [Document Identifier 495] |  |
| 30. | Medicare Part D Coverage Supplement [Document Identifier 365] |  |
| 31. | Relief from the five-year rotation requirement for lead audit partner [Document Identifier 224] |  |

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

32. Relief from the one-year cooling off period for independent CPA
[Document Identifier 225]



33. Relief from the Requirements for Audit Committees [Document Identifier 226]



35. Health Care Receivables Supplement [Document Identifier 470]



38. Credit Insurance Experience Exhibit [Document Identifier 230]



40. Supplemental Health Care Exhibit (Parts 1, 2 and 3) [Document Identifier 216]



41. Supplemental Health Care Exhibit's Expense Allocation Report
[Document Identifier 217]



42. Actuarial Memorandum Required by Actuarial Guideline XXXVIII 8D
[Document Identifier 435]



ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

OVERFLOW PAGE FOR WRITE-INS

Additional Write-ins for Assets Line 25

	Current Year			Prior Year
	1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	4 Net Admitted Assets
2504. Investment in trust	26,075,375		26,075,375	26,583,398
2505. Pension plan asset	636,276,736	636,276,736		
2506. Cash advances to agents	284,529,467	284,529,467		
2507. Commissions and expenses on long-term lease	71,965,385	71,965,385		
2508. Intangible assets	53,808,241	53,808,241		
2509. Bills receivable	(356)	(356)		
2597. Summary of remaining write-ins for Line 25 from overflow page	1,072,654,849	1,046,579,473	26,075,375	26,583,398

Additional Write-ins for Liabilities Line 25

	1 Current Year	2 Prior Year
2504. Funds awaiting escheat and other miscellaneous	479,609,709	281,280,933
2505. Deferred income liability	11,826,045	13,022,833
2597. Summary of remaining write-ins for Line 25 from overflow page	491,435,755	294,303,766

Additional Write-ins for Summary of Operations Line 8.3

	1 Current Year	2 Prior Year
08.304. Revenue sharing	46,257,499	57,107,606
08.305. Miscellaneous	(141,804,556)	49,271,319
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	(95,547,057)	106,378,925

Additional Write-ins for Summary of Operations Line 27

	1 Current Year	2 Prior Year
2704. Reinsurance ceded adjustment	(70,479,015)	1,664,926,416
2705. Change in reserves due reinsurance agreement	(2,616,096)	(1,038,280,566)
2706. Market value adjustment transfer		(490,486,297)
2797. Summary of remaining write-ins for Line 27 from overflow page	(73,095,111)	136,159,553

Additional Write-ins for Exhibit of Nonadmitted Assets Line 25

	1 Current Year Total Nonadmitted Assets	2 Prior Year Total Nonadmitted Assets	3 Change in Total Nonadmitted Assets (Col. 2 - Col. 1)
2504. Intangible assets	53,808,241	65,688,755	11,880,514
2505. Fully refundable deposits, prepayments and miscellaneous assets	40,658,189	51,668,518	11,010,328
2506. Employee insurance plan advances	4,910	6,137	1,227
2507. Bills receivable	(356)	37,958	38,314
2597. Summary of remaining write-ins for Line 25 from overflow page	94,470,984	117,401,368	22,930,384

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
OVERFLOW PAGE FOR WRITE-INS

Additional Write-ins for Analysis of Operations - Summary Line 8.3

	1	2	3	4	5	6	7	8	9
	Total	Individual Life	Group Life	Individual Annuities	Group Annuities	Accident and Health	Fraternal	Other Lines of Business	YRT Mortality Risk Only
08.304. Revenue sharing	46,257,499	2,325,026	218,466	20,648,650	23,065,356				
08.305. Miscellaneous	(141,804,556)	91,618,906	6,967,060	17,254,206	(268,888,298)	11,243,571			
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	(95,547,057)	93,943,932	7,185,526	37,902,856	(245,822,941)	11,243,571			

Additional Write-ins for Analysis of Operations - Summary Line 27

	1	2	3	4	5	6	7	8	9
	Total	Individual Life	Group Life	Individual Annuities	Group Annuities	Accident and Health	Fraternal	Other Lines of Business	YRT Mortality Risk Only
2704. Reinsurance ceded adjustment	(70,479,015)	(13,407,086)			(57,071,929)				
2705. Change in reserves due to reinsurance agreement	(2,616,096)				(2,616,096)				
2797. Summary of remaining write-ins for Line 27 from overflow page	(73,095,111)	(13,407,086)			(59,688,025)				

Additional Write-ins for Analysis of Operations - Individual Life Insurance Line 8.3

	1	2	3	4	5	6	7	8	9	10	11	12
	Total	Industrial Life	Whole Life	Term Life	Indexed Life	Universal Life	Universal Life With Secondary Guarantees	Variable Life	Variable Universal Life	Credit Life (c)	Other Individual Life	YRT Mortality Risk Only
08.304. Management and administrative fees	8,798,960		8,720,819				78,141					
08.305. Revenue sharing	2,325,026		47,629						2,277,398			
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	11,123,986		8,768,447				78,141		2,277,398			

Additional Write-ins for Analysis of Operations - Individual Life Insurance Line 27

	1	2	3	4	5	6	7	8	9	10	11	12
	Total	Industrial Life	Whole Life	Term Life	Indexed Life	Universal Life	Universal Life With Secondary Guarantees	Variable Life	Variable Universal Life	Credit Life (c)	Other Individual Life	YRT Mortality Risk Only
2704. Reinsurance ceded adjustment	(13,407,086)			(7,336,685)			(4,970,579)		(1,099,822)			
2797. Summary of remaining write-ins for Line 27 from overflow page	(13,407,086)			(7,336,685)			(4,970,579)		(1,099,822)			

Additional Write-ins for Analysis of Operations - Group Life Insurance Line 8.3

	1	2	3	4	5	6	7	8	9
	Total	Whole Life	Term Life	Universal Life	Variable Life	Variable Universal Life	Credit Life (d)	Other Group Life (a)	YRT Mortality Risk Only
08.304. Management and administrative fees	(620,498)					(620,498)			
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	(620,498)					(620,498)			

Additional Write-ins for Analysis of Operations - Individual Annuities Line 8.3

	1	Deferred			6	7	
		2	3	4			5
	Total	Fixed Annuities	Indexed Annuities	Variable Annuities with Guarantees	Variable Annuities Without Guarantees	Life Contingent Payout (Immediate and Annuitizations)	Other Annuities
08.304. Management and administrative fees	33,750					33,750	
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	33,750					33,750	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

OVERFLOW PAGE FOR WRITE-INS

Additional Write-ins for Analysis of Operations - Group Annuities Line 8.3

	1	Deferred				6 Life Contingent Payout (Immediate and Annuityizations)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees	5 Variable Annuities Without Guarantees		
	Total						
08.304. Miscellaneous	(268,888,298)	127,208		(122,796,125)	(413,149)	4,042,555	(149,848,787)
08.397. Summary of remaining write-ins for Line 8.3 from overflow page	(268,888,298)	127,208		(122,796,125)	(413,149)	4,042,555	(149,848,787)

Additional Write-ins for Analysis of Operations - Group Annuities Line 27

	1	Deferred				6 Life Contingent Payout (Immediate and Annuityizations)	7 Other Annuities
		2 Fixed Annuities	3 Indexed Annuities	4 Variable Annuities with Guarantees	5 Variable Annuities Without Guarantees		
	Total						
2704. Change in reserves due to reinsurance agreement	(2,616,096)	(3,757,981)			(2,588,672)	3,730,557	
2797. Summary of remaining write-ins for Line 27 from overflow page	(2,616,096)	(3,757,981)			(2,588,672)	3,730,557	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SUMMARY INVESTMENT SCHEDULE

Investment Categories	Gross Investment Holdings		Admitted Assets as Reported in the Annual Statement			
	1 Amount	2 Percentage of Column 1 Line 13	3 Amount	4 Securities Lending Reinvested Collateral Amount	5 Total (Col. 3 + 4) Amount	6 Percentage of Column 5 Line 13
1. Long-Term Bonds (Schedule D, Part 1):						
1.01 U.S. governments	4,125,427,847	1.795	4,125,427,847		4,125,427,847	1.795
1.02 All other governments	1,844,462,301	0.803	1,844,462,301		1,844,462,301	0.803
1.03 U.S. states, territories and possessions, etc. guaranteed	296,938,748	0.129	296,938,748		296,938,748	0.129
1.04 U.S. political subdivisions of states, territories, and possessions, guaranteed	441,543,872	0.192	441,543,872		441,543,872	0.192
1.05 U.S. special revenue and special assessment obligations, etc. non-guaranteed	4,741,359,470	2.063	4,741,359,470		4,741,359,470	2.064
1.06 Industrial and miscellaneous	86,999,877,946	37.854	86,999,877,946		86,999,877,946	37.864
1.07 Hybrid securities	655,366,208	0.285	655,366,208		655,366,208	0.285
1.08 Parent, subsidiaries and affiliates	6,548,332,993	2.849	6,548,332,993		6,548,332,993	2.850
1.09 SVO identified funds	45,481,250	0.020	45,481,250		45,481,250	0.020
1.10 Unaffiliated Bank loans	18,587,811,385	8.088	18,587,811,385		18,587,811,385	8.090
1.11 Total long-term bonds	124,286,602,020	54.078	124,286,602,020		124,286,602,020	54.091
2. Preferred stocks (Schedule D, Part 2, Section 1):						
2.01 Industrial and miscellaneous (Unaffiliated)	554,665,006	0.241	554,665,005		554,665,005	0.241
2.02 Parent, subsidiaries and affiliates		0.000				0.000
2.03 Total preferred stocks	554,665,006	0.241	554,665,005		554,665,005	0.241
3. Common stocks (Schedule D, Part 2, Section 2):						
3.01 Industrial and miscellaneous Publicly traded (Unaffiliated)	662,621,752	0.288	662,437,944		662,437,944	0.288
3.02 Industrial and miscellaneous Other (Unaffiliated)	453,540,565	0.197	453,540,565		453,540,565	0.197
3.03 Parent, subsidiaries and affiliates Publicly traded		0.000				0.000
3.04 Parent, subsidiaries and affiliates Other	24,287,466,580	10.568	24,287,466,580		24,287,466,580	10.570
3.05 Mutual funds	468,031,035	0.204	468,031,035		468,031,035	0.204
3.06 Unit investment trusts		0.000				0.000
3.07 Closed-end funds	45,554,989	0.020	45,554,989		45,554,989	0.020
3.08 Total common stocks	25,917,214,921	11.277	25,917,031,113		25,917,031,113	11.279
4. Mortgage loans (Schedule B):						
4.01 Farm mortgages		0.000				0.000
4.02 Residential mortgages	4,808,507,195	2.092	4,808,507,195		4,808,507,195	2.093
4.03 Commercial mortgages	21,419,320,485	9.320	21,419,320,485		21,419,320,485	9.322
4.04 Mezzanine real estate loans	117,017,883	0.051	117,017,883		117,017,883	0.051
4.05 Total valuation allowance		0.000				0.000
4.06 Total mortgage loans	26,344,845,562	11.463	26,344,845,563		26,344,845,563	11.466
5. Real estate (Schedule A):						
5.01 Properties occupied by company	377,966,253	0.164	377,966,253		377,966,253	0.164
5.02 Properties held for production of income	16,931,490	0.007	16,931,489		16,931,489	0.007
5.03 Properties held for sale		0.000				0.000
5.04 Total real estate	394,897,743	0.172	394,897,743		394,897,743	0.172
6. Cash, cash equivalents and short-term investments:						
6.01 Cash (Schedule E, Part 1)	1,453,239,942	0.632	1,453,239,942		1,453,239,942	0.632
6.02 Cash equivalents (Schedule E, Part 2)	1,774,108,873	0.772	1,774,108,873		1,774,108,873	0.772
6.03 Short-term investments (Schedule DA)	2,715,450,459	1.182	2,715,450,459		2,715,450,459	1.182
6.04 Total cash, cash equivalents and short-term investments	5,942,799,274	2.586	5,942,799,274		5,942,799,274	2.586
7. Contract loans	16,119,931,306	7.014	16,119,781,299		16,119,781,299	7.016
8. Derivatives (Schedule DB)	16,378,561,586	7.126	16,378,561,586		16,378,561,586	7.128
9. Other invested assets (Schedule BA)	12,601,759,357	5.483	12,545,487,974		12,545,487,974	5.460
10. Receivables for securities	1,287,124,292	0.560	1,287,124,292		1,287,124,292	0.560
11. Securities Lending (Schedule DL, Part 1)		0.000		XXX	XXX	XXX
12. Other invested assets (Page 2, Line 11)		0.000				0.000
13. Total invested assets	229,828,401,068	100.000	229,771,795,870		229,771,795,870	100.000

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE A - VERIFICATION BETWEEN YEARS

Real Estate

1.	Book/adjusted carrying value, December 31 of prior year		362,371,153
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition (Part 2, Column 6)		
	2.2 Additional investment made after acquisition (Part 2, Column 9)	173,218,441	173,218,441
3.	Current year change in encumbrances:		
	3.1 Totals, Part 1, Column 13		
	3.2 Totals, Part 3, Column 11	864,000	864,000
4.	Total gain (loss) on disposals, Part 3, Column 18		29,787,026
5.	Deduct amounts received on disposals, Part 3, Column 15		75,387,206
6.	Total foreign exchange change in book/adjusted carrying value:		
	6.1 Totals, Part 1, Column 15		
	6.2 Totals, Part 3, Column 13		
7.	Deduct current year's other than temporary impairment recognized:		
	7.1 Totals, Part 1, Column 12	5,416,511	
	7.2 Totals, Part 3, Column 10		5,416,511
8.	Deduct current year's depreciation:		
	8.1 Totals, Part 1, Column 11	88,807,312	
	8.2 Totals, Part 3, Column 9	1,731,848	90,539,160
9.	Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8)		394,897,743
10.	Deduct total nonadmitted amounts		
11.	Statement value at end of current period (Line 9 minus Line 10)		394,897,743

SCHEDULE B - VERIFICATION BETWEEN YEARS

Mortgage Loans

1.	Book value/recorded investment excluding accrued interest, December 31 of prior year		26,078,333,015
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition (Part 2, Column 7)	4,758,341,329	
	2.2 Additional investment made after acquisition (Part 2, Column 8)	412,065,332	5,170,406,661
3.	Capitalized deferred interest and other:		
	3.1 Totals, Part 1, Column 12	29,186,798	
	3.2 Totals, Part 3, Column 11	18,797,967	47,984,765
4.	Accrual of discount		46,337,557
5.	Unrealized valuation increase (decrease):		
	5.1 Totals, Part 1, Column 9		
	5.2 Totals, Part 3, Column 8		
6.	Total gain (loss) on disposals, Part 3, Column 18		9,889,840
7.	Deduct amounts received on disposals, Part 3, Column 15		4,919,160,141
8.	Deduct amortization of premium and mortgage interest points and commitment fees		(7,437,157)
9.	Total foreign exchange change in book value/recorded investment excluding accrued interest:		
	9.1 Totals, Part 1, Column 13	(68,284,976)	
	9.2 Totals, Part 3, Column 13	(11,261,272)	(79,546,248)
10.	Deduct current year's other than temporary impairment recognized:		
	10.1 Totals, Part 1, Column 11	16,837,043	
	10.2 Totals, Part 3, Column 10		16,837,043
11.	Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)		26,344,845,562
12.	Total valuation allowance		
13.	Subtotal (Line 11 plus 12)		26,344,845,562
14.	Deduct total nonadmitted amounts		
15.	Statement value of mortgages owned at end of current period (Line 13 minus Line 14)		26,344,845,562

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE BA - VERIFICATION BETWEEN YEARS

Other Long-Term Invested Assets

1.	Book/adjusted carrying value, December 31 of prior year	9,586,349,814
2.	Cost of acquired:	
	2.1 Actual cost at time of acquisition (Part 2, Column 8)	1,890,897,016
	2.2 Additional investment made after acquisition (Part 2, Column 9)	2,153,234,112
		4,044,131,127
3.	Capitalized deferred interest and other:	
	3.1 Totals, Part 1, Column 16	
	3.2 Totals, Part 3, Column 12	
4.	Accrual of discount	
5.	Unrealized valuation increase (decrease):	
	5.1 Totals, Part 1, Column 13	1,706,656,275
	5.2 Totals, Part 3, Column 9	18,914,589
		1,725,570,864
6.	Total gain (loss) on disposals, Part 3, Column 19	70,537,450
7.	Deduct amounts received on disposals, Part 3, Column 16	2,773,584,895
8.	Deduct amortization of premium and depreciation	1,137,105
9.	Total foreign exchange change in book/adjusted carrying value:	
	9.1 Totals, Part 1, Column 17	(48,885,395)
	9.2 Totals, Part 3, Column 14	1,335,109
		(47,550,286)
10.	Deduct current year's other than temporary impairment recognized:	
	10.1 Totals, Part 1, Column 15	2,557,612
	10.2 Totals, Part 3, Column 11	
		2,557,612
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	12,601,759,357
12.	Deduct total nonadmitted amounts	56,271,383
13.	Statement value at end of current period (Line 11 minus Line 12)	12,545,487,974

SCHEDULE D - VERIFICATION BETWEEN YEARS

Bonds and Stocks

1.	Book/adjusted carrying value, December 31 of prior year	136,241,389,634
2.	Cost of bonds and stocks acquired, Part 3, Column 7	53,871,504,467
3.	Accrual of discount	331,197,415
4.	Unrealized valuation increase (decrease):	
	4.1. Part 1, Column 12	(6,922,480)
	4.2. Part 2, Section 1, Column 15	826,432
	4.3. Part 2, Section 2, Column 13	965,287,978
	4.4. Part 4, Column 11	(99,064,916)
		860,127,014
5.	Total gain (loss) on disposals, Part 4, Column 19	457,112,821
6.	Deduction consideration for bonds and stocks disposed of, Part 4, Column 7	40,062,121,850
7.	Deduct amortization of premium	184,805,816
8.	Total foreign exchange change in book/adjusted carrying value:	
	8.1. Part 1, Column 15	(670,458,371)
	8.2. Part 2, Section 1, Column 19	
	8.3. Part 2, Section 2, Column 16	3,153,558
	8.4. Part 4, Column 15	(65,378,947)
		(732,683,760)
9.	Deduct current year's other than temporary impairment recognized:	
	9.1. Part 1, Column 14	73,666,401
	9.2. Part 2, Section 1, Column 17	1,422,035
	9.3. Part 2, Section 2, Column 14	8,551,507
	9.4. Part 4, Column 13	8,637,311
		92,277,254
10.	Total investment income recognized as a result of prepayment penalties and/or acceleration fees, Note 5Q, Line 2	69,039,274
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	150,758,481,945
12.	Deduct total nonadmitted amounts	183,808
13.	Statement value at end of current period (Line 11 minus Line 12)	150,758,298,137

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE D - SUMMARY BY COUNTRY

Long-Term Bonds and Stocks OWNED December 31 of Current Year

Description		1 Book/Adjusted Carrying Value	2 Fair Value	3 Actual Cost	4 Par Value of Bonds
BONDS					
Governments (Including all obligations guaranteed by governments)	1. United States	4,125,427,847	4,768,832,650	3,538,640,258	4,555,355,106
	2. Canada	69,429,488	82,628,290	74,687,871	66,344,000
	3. Other Countries	1,775,032,813	1,886,262,888	1,793,897,087	1,724,187,056
	4. Totals	5,969,890,148	6,737,723,828	5,407,225,216	6,345,886,162
U.S. States, Territories and Possessions (Direct and guaranteed)	5. Totals	296,938,748	349,891,507	303,333,743	280,208,088
U.S. Political Subdivisions of States, Territories and Possessions (Direct and guaranteed)	6. Totals	441,543,872	504,438,252	447,542,183	459,926,000
U.S. Special Revenue and Special Assessment Obligations and all Non- Guaranteed Obligations of Agencies and Authorities of Governments and their Political Subdivisions	7. Totals	4,741,359,470	5,581,982,970	4,207,584,328	5,326,987,148
Industrial and Miscellaneous, SVO Identified Funds, Unaffiliated Bank Loans and Hybrid Securities (unaffiliated)	8. United States	64,872,388,443	69,394,980,155	64,806,695,813	64,122,266,340
	9. Canada	1,677,715,738	1,827,578,445	1,684,512,310	1,638,707,678
	10. Other Countries	39,738,432,608	41,405,908,809	39,968,612,417	40,290,456,407
	11. Totals	106,288,536,789	112,628,467,409	106,459,820,540	106,051,430,425
Parent, Subsidiaries and Affiliates	12. Totals	6,548,332,993	6,929,314,909	6,681,860,057	6,891,775,507
	13. Total Bonds	124,286,602,020	132,731,818,875	123,507,366,067	125,356,213,330
PREFERRED STOCKS					
Industrial and Miscellaneous (unaffiliated)	14. United States	544,671,473	659,918,998	553,244,668	
	15. Canada				
	16. Other Countries	9,993,532	9,993,532	9,993,532	
	17. Totals	554,665,005	669,912,530	563,238,200	
Parent, Subsidiaries and Affiliates	18. Totals				
	19. Total Preferred Stocks	554,665,005	669,912,530	563,238,200	
COMMON STOCKS					
Industrial and Miscellaneous (unaffiliated)	20. United States	1,135,141,752	1,135,141,752	933,016,588	
	21. Canada	190,926,248	190,926,248	125,960,109	
	22. Other Countries	303,680,338	303,680,338	218,120,109	
	23. Totals	1,629,748,338	1,629,748,338	1,277,096,806	
Parent, Subsidiaries and Affiliates	24. Totals	24,287,466,580	24,287,466,580	10,392,444,056	
	25. Total Common Stocks	25,917,214,918	25,917,214,918	11,669,540,862	
	26. Total Stocks	26,471,879,923	26,587,127,448	12,232,779,062	
	27. Total Bonds and Stocks	150,758,481,943	159,318,946,323	135,740,145,129	

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE D - PART 1A - SECTION 1

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 11.7	9 Total from Col. 7 Prior Year	10 % From Col. 8 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
1. U.S. Governments												
1.1 NAIC 1	364,488,376	1,509,235,489	462,156,473	720,573,873	1,068,973,629	XXX	4,125,427,840	3.2	4,591,533,313	3.8	4,125,316,872	110,968
1.2 NAIC 2						XXX						
1.3 NAIC 3						XXX			572,107	0.0		
1.4 NAIC 4						XXX						
1.5 NAIC 5						XXX						
1.6 NAIC 6						XXX						
1.7 Totals	364,488,376	1,509,235,489	462,156,473	720,573,873	1,068,973,629	XXX	4,125,427,840	3.2	4,592,105,420	3.8	4,125,316,872	110,968
2. All Other Governments												
2.1 NAIC 1	37,050,000	64,833,755	61,958,496	71,581,575	293,699,685	XXX	529,123,511	0.4	370,837,377	0.3	339,761,124	189,362,387
2.2 NAIC 2		144,233,951	220,906,480	236,700,022	372,442,590	XXX	974,283,043	0.8	1,274,692,134	1.1	651,393,023	322,890,020
2.3 NAIC 3	610,099	135,900,858	38,061,125	5,578,035	101,328,262	XXX	281,478,379	0.2	105,747,474	0.1	160,242,433	121,235,946
2.4 NAIC 4	2,866,299	31,105,063	21,815,054	790,949		XXX	56,577,365	0.0	92,918,474	0.1	11,751,639	44,825,726
2.5 NAIC 5			3,000,000			XXX	3,000,000	0.0	3,000,000	0.0	3,000,000	
2.6 NAIC 6						XXX						
2.7 Totals	40,526,398	376,073,627	345,741,155	314,650,581	767,470,537	XXX	1,844,462,298	1.4	1,847,195,459	1.5	1,166,148,219	678,314,079
3. U.S. States, Territories and Possessions etc., Guaranteed												
3.1 NAIC 1	31,053,315	98,880,774	29,796,363	136,985,794		XXX	296,716,246	0.2	424,082,556	0.4	296,716,246	
3.2 NAIC 2						XXX			118,310	0.0		
3.3 NAIC 3						XXX						
3.4 NAIC 4						XXX						
3.5 NAIC 5						XXX						
3.6 NAIC 6					222,500	XXX	222,500	0.0	222,500	0.0	222,500	
3.7 Totals	31,053,315	98,880,774	29,796,363	136,985,794	222,500	XXX	296,938,746	0.2	424,423,366	0.4	296,938,746	
4. U.S. Political Subdivisions of States, Territories and Possessions , Guaranteed												
4.1 NAIC 1	44,403,535	87,586,638	131,582,241	131,461,316	40,446,076	XXX	435,479,806	0.3	424,931,023	0.4	435,479,806	
4.2 NAIC 2	12,306	59,067	1,590,619	418,394	347,021	XXX	2,427,407	0.0	1,492,667	0.0	2,427,407	
4.3 NAIC 3	126,000	1,188,656	1,222,000			XXX	2,536,656	0.0	3,600,788	0.0	2,536,656	
4.4 NAIC 4						XXX						
4.5 NAIC 5	1,100,000					XXX	1,100,000	0.0	1,250,000	0.0	1,100,000	
4.6 NAIC 6						XXX						
4.7 Totals	45,641,841	88,834,361	134,394,860	131,879,710	40,793,097	XXX	441,543,869	0.3	431,274,478	0.4	441,543,869	
5. U.S. Special Revenue & Special Assessment Obligations, etc., Non-Guaranteed												
5.1 NAIC 1	176,644,474	1,152,827,164	2,067,047,675	696,002,010	256,017,911	XXX	4,348,539,234	3.4	5,898,221,895	4.9	4,345,610,840	2,928,394
5.2 NAIC 2	17,580,091	125,027,166	60,788,050	63,084,602	39,213,855	XXX	305,693,764	0.2	307,802,578	0.3	279,325,060	26,368,704
5.3 NAIC 3	2,495,774	3,891,576	16,386,522	23,726,261	7,037,207	XXX	53,537,340	0.0	48,334,554	0.0	44,359,983	9,177,357
5.4 NAIC 4	928,750	7,515,000	1,882,215	410,000		XXX	10,735,965	0.0	22,107,987	0.0	3,695,965	7,040,000
5.5 NAIC 5	754,700	8,443,464	1,499,878	4,363,187	3,932,695	XXX	18,993,924	0.0	20,435,274	0.0	10,956,164	8,037,760
5.6 NAIC 6		1,253,000	444,075		2,162,175	XXX	3,859,250	0.0	3,899,913	0.0	1,291,950	2,567,300
5.7 Totals	198,403,789	1,298,957,370	2,148,048,415	787,586,060	308,363,843	XXX	4,741,359,477	3.7	6,300,802,201	5.3	4,685,239,962	56,119,515

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE D - PART 1A - SECTION 1 (Continued)

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	Maturity Distribution					6 No Maturity Date	Total Current Year		Prior Year		Total	
	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years		7 Total Current Year	8 Col. 7 as a % of Line 11.7	9 Total from Col. 7 Prior Year	10 % From Col. 8 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
6. Industrial & Miscellaneous (Unaffiliated)												
6.1 NAIC 1	4,222,712,513	10,168,845,422	9,764,426,245	8,874,678,989	10,861,780,047	XXX	43,892,443,216	34.2	42,324,293,059	35.5	15,077,299,618	28,815,143,598
6.2 NAIC 2	3,199,337,751	8,980,516,584	12,110,830,416	7,255,211,147	8,696,354,515	XXX	40,242,250,413	31.4	37,903,415,191	31.8	13,095,307,919	27,146,942,494
6.3 NAIC 3	222,263,705	1,316,902,186	1,731,399,487	414,213,809	302,182,488	XXX	3,986,961,675	3.1	3,590,016,374	3.0	1,242,911,873	2,744,049,802
6.4 NAIC 4	87,429,388	842,219,460	508,835,782	171,032,751	24,539,052	XXX	1,634,056,433	1.3	1,489,879,083	1.2	443,274,443	1,190,781,990
6.5 NAIC 5	94,725,414	114,594,876	184,445,220	51,881,522	161,382,645	XXX	607,029,677	0.5	497,715,771	0.4	163,827,608	443,202,069
6.6 NAIC 6	8,866,557	107,505,760	81,710,155	31,718,964	451,430,757	XXX	681,232,193	0.5	402,082,435	0.3	71,624,707	609,607,486
6.7 Totals	7,835,335,328	21,530,584,288	24,381,647,305	16,798,737,182	20,497,669,504	XXX	91,043,973,607	70.9	86,207,401,913	72.2	30,094,246,168	60,949,727,439
7. Hybrid Securities												
7.1 NAIC 1	404,942	35,487,523		1,356,954	30,695,000	XXX	67,944,419	0.1	19,390,206	0.0	32,051,954	35,892,465
7.2 NAIC 2	3,924,086	83,933,994	74,576,199	36,752,692	51,863,161	XXX	251,050,132	0.2	213,325,854	0.2	157,597,336	93,452,796
7.3 NAIC 3	1,981,714	28,077,303	21,772,181	9,328,000	153,703,443	XXX	214,862,641	0.2	102,684,895	0.1	127,963,681	86,898,960
7.4 NAIC 4		11,261,020	1,200,000	9,500,000	51,227,000	XXX	73,188,020	0.1	25,339,000	0.0	37,699,020	35,489,000
7.5 NAIC 5		11,448,996			36,872,000	XXX	48,320,996	0.0	26,701,000	0.0	42,834,996	5,486,000
7.6 NAIC 6						XXX						
7.7 Totals	6,310,742	170,208,836	97,548,380	56,937,646	324,360,604	XXX	655,366,208	0.5	387,440,955	0.3	398,146,987	257,219,221
8. Parent, Subsidiaries and Affiliates												
8.1 NAIC 1	200,000,000	210,627,932	279,072,645			XXX	689,700,577	0.5	629,935,038	0.5		689,700,577
8.2 NAIC 2	3,891,572,411	1,677,060,026				XXX	5,568,632,437	4.3	5,371,898,909	4.5		5,568,632,437
8.3 NAIC 3		290,000,000				XXX	290,000,000	0.2	310,000,000	0.3		290,000,000
8.4 NAIC 4						XXX						
8.5 NAIC 5						XXX						
8.6 NAIC 6						XXX						
8.7 Totals	4,091,572,411	2,177,687,958	279,072,645			XXX	6,548,333,014	5.1	6,311,833,947	5.3		6,548,333,014
9. SVO Identified Funds												
9.1 NAIC 1	XXX	XXX	XXX	XXX	XXX							
9.2 NAIC 2	XXX	XXX	XXX	XXX	XXX	45,481,250	45,481,250	0.0	109,647,889	0.1	45,481,250	
9.3 NAIC 3	XXX	XXX	XXX	XXX	XXX							
9.4 NAIC 4	XXX	XXX	XXX	XXX	XXX							
9.5 NAIC 5	XXX	XXX	XXX	XXX	XXX							
9.6 NAIC 6	XXX	XXX	XXX	XXX	XXX							
9.7 Totals	XXX	XXX	XXX	XXX	XXX	45,481,250	45,481,250	0.0	109,647,889	0.1	45,481,250	
10. Unaffiliated Bank Loans												
10.1 NAIC 1	1,837,109	1,069,307,166	4,214,574,719	379,713,521	4,674,291,275	XXX	10,339,723,790	8.1	5,957,108,656	5.0		10,339,723,790
10.2 NAIC 2		600,154,644	1,275,783,403	389,782,442	1,772,641,146	XXX	4,038,361,635	3.1	2,503,260,870	2.1		4,038,361,635
10.3 NAIC 3		213,955,594	157,565,523	46,633,475	187,163,544	XXX	605,318,136	0.5	656,029,583	0.5		605,318,136
10.4 NAIC 4	34,038,042	668,421,709	779,702,304	33,151,737	121,825,794	XXX	1,637,139,586	1.3	1,471,950,327	1.2		1,637,139,586
10.5 NAIC 5	25,208,885	952,763,708	694,852,340	31,184,953	130,727,704	XXX	1,834,737,590	1.4	2,008,447,404	1.7		1,834,737,590
10.6 NAIC 6	13,048,810	78,077,738	7,266,667		34,137,441	XXX	132,530,656	0.1	111,446,683	0.1		132,530,656
10.7 Totals	74,132,846	3,582,680,559	7,129,744,956	880,466,128	6,920,786,904	XXX	18,587,811,393	14.5	12,708,243,523	10.7		18,587,811,393

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE D - PART 1A - SECTION 1 (Continued)

Quality and Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Types of Issues and NAIC Designations

NAIC Designation	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 11.7	9 Total from Col. 7 Prior Year	10 % From Col. 8 Prior Year	11 Total Publicly Traded	12 Total Privately Placed (a)
11. Total Bonds Current Year												
11.1 NAIC 1	(d) 5,078,594,264	14,397,631,863	17,010,614,857	11,012,354,032	17,225,903,623		64,725,098,639	50.4	XXX	XXX	24,652,236,460	40,072,862,179
11.2 NAIC 2	(d) 7,112,426,645	11,610,985,432	13,744,475,167	7,981,949,299	10,932,862,288	45,481,250	51,428,180,081	40.1	XXX	XXX	14,231,531,995	37,196,648,086
11.3 NAIC 3	(d) 227,477,292	1,989,916,173	1,966,406,838	499,479,580	751,414,944		5,434,694,827	4.2	XXX	XXX	1,578,014,626	3,856,680,201
11.4 NAIC 4	(d) 125,262,479	1,560,522,252	1,313,435,355	214,885,437	197,591,846		3,411,697,369	2.7	XXX	XXX	496,421,067	2,915,276,302
11.5 NAIC 5	(d) 121,788,999	1,087,251,044	883,797,438	87,429,662	332,915,044		(c) 2,513,182,187	2.0	XXX	XXX	221,718,768	2,291,463,419
11.6 NAIC 6	(d) 21,915,367	186,836,498	89,420,897	31,718,964	487,952,873		(c) 817,844,599	0.6	XXX	XXX	73,139,157	744,705,442
11.7 Totals	12,687,465,046	30,833,143,262	35,008,150,552	19,827,816,974	29,928,640,618	45,481,250	128,330,697,70	100.0			41,253,062,073	87,077,635,629
11.8 Line 11.7 as a % of Col. 7	9.9	24.0	27.3	15.5	23.3	0.0	(b) 2 100.0	XXX	XXX	XXX	32.1	67.9
12. Total Bonds Prior Year												
12.1 NAIC 1	6,899,637,396	12,763,048,260	15,360,901,695	8,801,974,797	16,814,770,975		XXX	XXX	60,640,333,123	50.8	27,236,371,454	33,403,961,669
12.2 NAIC 2	3,855,312,998	14,129,088,613	12,163,930,649	6,947,592,756	10,480,081,497	109,647,889	XXX	XXX	47,685,654,402	40.0	14,568,913,997	33,116,740,405
12.3 NAIC 3	278,763,467	1,826,354,435	1,503,401,336	596,279,862	612,186,675		XXX	XXX	4,816,985,775	4.0	1,506,760,110	3,310,225,665
12.4 NAIC 4	106,278,287	1,313,556,018	1,219,863,434	113,027,611	349,469,521		XXX	XXX	3,102,194,871	2.6	508,071,131	2,594,123,740
12.5 NAIC 5	46,158,545	1,426,059,167	860,189,746	54,945,072	170,196,919		XXX	XXX	(c) 2,557,549,449	2.1	260,323,003	2,297,226,446
12.6 NAIC 6	19,637,567	137,621,445	103,744,084	69,129,643	187,518,792		XXX	XXX	(c) 517,651,531	0.4	71,639,992	446,011,539
12.7 Totals	11,205,788,260	31,595,727,938	31,212,030,944	16,582,949,741	28,614,224,379	109,647,889			119,320,369,15	100.0	44,152,079,687	75,168,289,464
12.8 Line 12.7 as a % of Col. 9	9.4	26.5	26.2	13.9	24.0	0.1	XXX XXX	XXX XXX	(b) 1 100.0	XXX	37.0	63.0
13. Total Publicly Traded Bonds												
13.1 NAIC 1	1,305,987,639	4,461,697,141	4,874,624,662	5,468,722,641	8,541,204,376		24,652,236,459	19.2	27,236,371,454	22.8	24,652,236,459	XXX
13.2 NAIC 2	426,218,960	1,862,289,437	2,625,889,943	3,107,448,337	6,164,204,068	45,481,250	14,231,531,995	11.1	14,568,913,997	12.2	14,231,531,995	XXX
13.3 NAIC 3	73,768,405	469,115,860	550,787,253	167,326,587	317,016,522		1,578,014,627	1.2	1,506,760,110	1.3	1,578,014,627	XXX
13.4 NAIC 4	50,139,242	290,442,953	116,549,780	6,218,482	33,070,609		496,421,066	0.4	508,071,131	0.4	496,421,066	XXX
13.5 NAIC 5	28,818,077	59,799,966	71,885,025	23,280,701	37,934,999		221,718,768	0.2	260,323,003	0.2	221,718,768	XXX
13.6 NAIC 6	275,601	725,176	1,103,780	3,535,319	67,499,281		73,139,157	0.1	71,639,992	0.1	73,139,157	XXX
13.7 Totals	1,885,207,924	7,144,070,533	8,240,840,443	8,776,532,067	15,160,929,855	45,481,250	41,253,062,072	32.1	44,152,079,687	37.0	41,253,062,072	XXX
13.8 Line 13.7 as a % of Col. 7	4.6	17.3	20.0	21.3	36.8	0.1	100.0	XXX	XXX	XXX	100.0	XXX
13.9 Line 13.7 as a % of Line 11.7, Col. 7, Section 11	1.5	5.6	6.4	6.8	11.8	0.0	32.1	XXX	XXX	XXX	32.1	XXX
14. Total Privately Placed Bonds												
14.1 NAIC 1	3,772,606,625	9,935,934,722	12,135,990,195	5,543,631,391	8,684,699,247		40,072,862,180	31.2	33,403,961,669	28.0	XXX	40,072,862,180
14.2 NAIC 2	6,686,207,685	9,748,695,995	11,118,585,224	4,874,500,962	4,768,658,220		37,196,648,086	29.0	33,116,740,405	27.8	XXX	37,196,648,086
14.3 NAIC 3	153,708,887	1,520,800,313	1,415,619,585	332,152,993	434,398,422		3,856,680,200	3.0	3,310,225,665	2.8	XXX	3,856,680,200
14.4 NAIC 4	75,123,237	1,270,079,299	1,196,885,575	208,666,955	164,521,237		2,915,276,303	2.3	2,594,123,740	2.2	XXX	2,915,276,303
14.5 NAIC 5	92,970,922	1,027,451,078	811,912,413	64,148,961	294,980,045		2,291,463,419	1.8	2,297,226,446	1.9	XXX	2,291,463,419
14.6 NAIC 6	21,639,766	186,111,322	88,317,117	28,183,645	420,453,592		744,705,442	0.6	446,011,539	0.4	XXX	744,705,442
14.7 Totals	10,802,257,122	23,689,072,729	26,767,310,109	11,051,284,907	14,767,710,763		87,077,635,630	67.9	75,168,289,464	63.0	XXX	87,077,635,630
14.8 Line 14.7 as a % of Col. 7	12.4	27.2	30.7	12.7	17.0		100.0	XXX	XXX	XXX	XXX	100.0
14.9 Line 14.7 as a % of Line 11.7, Col. 7, Section 11	8.4	18.5	20.9	8.6	11.5		67.9	XXX	XXX	XXX	XXX	67.9

(a) Includes \$ 26,591,313,740 freely tradable under SEC Rule 144 or qualified for resale under SEC Rule 144A.

(b) Includes \$ 5,214,840,471 current year of bonds with Z designations and \$ 8,522,927,287 prior year of bonds with Z designations. The letter "Z" means the NAIC designation was not assigned by the Securities Valuation Office (SVO) at the date of the statement.

(c) Includes \$ 1,308,944,081 current year, \$ 1,077,326,421 prior year of bonds with 5GI designations and \$ 656,339,217 current year, \$ 442,510,384 prior year of bonds with 6* designations. "5GI" means the NAIC designation was assigned by the (SVO) in reliance on the insurer's certification that the issuer is current in all principal and interest payments. "6*" means the NAIC designation was assigned by the SVO due to inadequate certification of principal and interest payments.

(d) Includes the following amount of short-term and cash equivalent bonds by NAIC designation: NAIC 1 \$ 2,008,400,012 ; NAIC 2 \$ 1,998,038,404 ; NAIC 3 \$ 33,889,978 ; NAIC 4 \$ 2,376,993 ; NAIC 5 \$; NAIC 6 \$ 1,390,301

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
SCHEDULE D - PART 1A - SECTION 2

Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Type and Subtype of Issues

	1	2	3	4	5	6	7	8	9	10	11	12
Distribution by Type	1 Year or Less	Over 1 Year Through 5 Years	Over 5 Years Through 10 Years	Over 10 Years Through 20 Years	Over 20 Years	No Maturity Date	Total Current Year	Col. 7 as a % of Line 11.08	Total from Col. 7 Prior Year	% From Col. 8 Prior Year	Total Publicly Traded	Total Privately Placed
1. U.S. Governments												
1.01 Issuer Obligations	353,990,298	1,484,067,965	448,243,032	711,851,994	1,066,962,679	XXX	4,065,115,968	3.2	4,511,607,695	3.8	4,065,115,968	
1.02 Residential Mortgage-Backed Securities	6,084,425	15,353,383	8,458,397	5,300,597	1,586,441	XXX	36,783,243	0.0	49,061,962	0.0	36,672,276	110,967
1.03 Commercial Mortgage-Backed Securities	163,935	561,101	531,335	1,094,962	274,780	XXX	2,626,113	0.0	4,283,809	0.0	2,626,112	1
1.04 Other Loan-Backed and Structured Securities	4,249,718	9,253,039	4,923,709	2,326,321	149,728	XXX	20,902,515	0.0	27,151,950	0.0	20,902,516	(1)
1.05 Totals	364,488,376	1,509,235,488	462,156,473	720,573,874	1,068,973,628	XXX	4,125,427,839	3.2	4,592,105,416	3.8	4,125,316,872	110,967
2. All Other Governments												
2.01 Issuer Obligations	40,526,398	376,073,628	345,741,155	314,650,582	767,470,537	XXX	1,844,462,300	1.4	1,847,195,460	1.5	1,166,148,219	678,314,081
2.02 Residential Mortgage-Backed Securities						XXX						
2.03 Commercial Mortgage-Backed Securities						XXX						
2.04 Other Loan-Backed and Structured Securities						XXX						
2.05 Totals	40,526,398	376,073,628	345,741,155	314,650,582	767,470,537	XXX	1,844,462,300	1.4	1,847,195,460	1.5	1,166,148,219	678,314,081
3. U.S. States, Territories and Possessions, Guaranteed												
3.01 Issuer Obligations	31,053,315	98,880,774	29,796,363	136,985,794	222,500	XXX	296,938,746	0.2	424,423,367	0.4	296,938,746	
3.02 Residential Mortgage-Backed Securities						XXX						
3.03 Commercial Mortgage-Backed Securities						XXX						
3.04 Other Loan-Backed and Structured Securities						XXX						
3.05 Totals	31,053,315	98,880,774	29,796,363	136,985,794	222,500	XXX	296,938,746	0.2	424,423,367	0.4	296,938,746	
4. U.S. Political Subdivisions of States, Territories and Possessions, Guaranteed												
4.01 Issuer Obligations	45,641,841	88,834,362	134,394,860	131,879,709	40,793,097	XXX	441,543,869	0.3	431,274,479	0.4	441,543,869	
4.02 Residential Mortgage-Backed Securities						XXX						
4.03 Commercial Mortgage-Backed Securities						XXX						
4.04 Other Loan-Backed and Structured Securities						XXX						
4.05 Totals	45,641,841	88,834,362	134,394,860	131,879,709	40,793,097	XXX	441,543,869	0.3	431,274,479	0.4	441,543,869	
5. U.S. Special Revenue & Special Assessment Obligations etc., Non-Guaranteed												
5.01 Issuer Obligations	99,434,952	1,075,680,148	2,041,524,762	753,095,457	297,700,232	XXX	4,267,435,551	3.3	5,269,392,613	4.4	4,211,316,036	56,119,515
5.02 Residential Mortgage-Backed Securities	98,763,235	222,844,116	106,484,349	34,490,604	991,681	XXX	463,573,985	0.4	1,030,072,493	0.9	463,573,985	
5.03 Commercial Mortgage-Backed Securities	155,268	387,567	39,303			XXX	582,138	0.0	1,233,915	0.0	582,138	
5.04 Other Loan-Backed and Structured Securities	50,334	45,539			9,671,930	XXX	9,767,803	0.0	103,180	0.0	9,767,803	
5.05 Totals	198,403,789	1,298,957,370	2,148,048,414	787,586,061	308,363,843	XXX	4,741,359,477	3.7	6,300,802,201	5.3	4,685,239,962	56,119,515
6. Industrial and Miscellaneous												
6.01 Issuer Obligations	5,800,441,452	12,966,450,534	18,076,638,080	14,277,802,368	19,451,591,646	XXX	70,572,924,080	55.0	67,970,205,520	57.0	26,997,238,437	43,575,685,643
6.02 Residential Mortgage-Backed Securities	197,107,043	492,359,899	352,778,418	328,927,769	124,098,929	XXX	1,495,272,058	1.2	1,740,213,822	1.5	1,171,182,409	324,089,649
6.03 Commercial Mortgage-Backed Securities	253,954,470	900,557,766	1,388,072,896	103,414,589	27,392,374	XXX	2,673,392,095	2.1	2,663,950,355	2.2	1,169,766,484	1,503,625,611
6.04 Other Loan-Backed and Structured Securities	1,583,832,365	7,171,216,088	4,564,157,910	2,088,592,456	894,586,556	XXX	16,302,385,375	12.7	13,833,032,216	11.6	756,058,838	15,546,326,537
6.05 Totals	7,835,335,330	21,530,584,287	24,381,647,304	16,798,737,182	20,497,669,505	XXX	91,043,973,608	70.9	86,207,401,913	72.2	30,094,246,168	60,949,727,440
7. Hybrid Securities												
7.01 Issuer Obligations	6,310,742	170,208,837	97,548,380	56,937,646	324,360,604	XXX	655,366,209	0.5	387,440,957	0.3	398,146,987	257,219,222
7.02 Residential Mortgage-Backed Securities						XXX						
7.03 Commercial Mortgage-Backed Securities						XXX						
7.04 Other Loan-Backed and Structured Securities						XXX						
7.05 Totals	6,310,742	170,208,837	97,548,380	56,937,646	324,360,604	XXX	655,366,209	0.5	387,440,957	0.3	398,146,987	257,219,222
8. Parent, Subsidiaries and Affiliates												
8.01 Issuer Obligations	257,074,723	1,982,060,026	30,000,000			XXX	2,269,134,749	1.8	2,483,117,973	2.1		2,269,134,749
8.02 Residential Mortgage-Backed Securities						XXX						
8.03 Commercial Mortgage-Backed Securities						XXX						
8.04 Other Loan-Backed and Structured Securities						XXX						
8.05 Affiliated Bank Loans - Issued	3,834,497,688	195,627,932	249,072,645			XXX	4,279,198,265	3.3	3,828,715,973	3.2		4,279,198,265
8.06 Affiliated Bank Loans - Acquired						XXX						
8.07 Totals	4,091,572,411	2,177,687,958	279,072,645			XXX	6,548,333,014	5.1	6,311,833,945	5.3		6,548,333,014

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company
SCHEDULE D - PART 1A - SECTION 2 (Continued)

Maturity Distribution of All Bonds Owned December 31, at Book/Adjusted Carrying Values by Major Type and Subtype of Issues

Distribution by Type	1 1 Year or Less	2 Over 1 Year Through 5 Years	3 Over 5 Years Through 10 Years	4 Over 10 Years Through 20 Years	5 Over 20 Years	6 No Maturity Date	7 Total Current Year	8 Col. 7 as a % of Line 11.08	9 Total from Col. 7 Prior Year	10 % From Col. 8 Prior Year	11 Total Publicly Traded	12 Total Privately Placed
9. SVO Identified Funds												
9.01 Exchange Traded Funds Identified by the SVO	XXX	XXX	XXX	XXX	XXX	45,481,250	45,481,250	0.0	109,647,889	0.1	45,481,250	
10. Unaffiliated Bank Loans												
10.01 Unaffiliated Bank Loans - Issued		645,615,793	4,282,125,512	490,814,667	4,495,288,476	XXX	9,913,844,448	7.7	4,619,193,072	3.9		9,913,844,448
10.02 Unaffiliated Bank Loans - Acquired	74,132,846	2,937,064,766	2,847,619,444	389,651,462	2,425,498,428	XXX	8,673,966,946	6.8	8,089,050,451	6.8		8,673,966,946
10.03 Totals	74,132,846	3,582,680,559	7,129,744,956	880,466,129	6,920,786,904	XXX	18,587,811,394	14.5	12,708,243,523	10.7		18,587,811,394
11. Total Bonds Current Year												
11.01 Issuer Obligations	6,634,473,721	18,242,256,274	21,203,886,632	16,383,203,550	21,949,101,295	XXX	84,412,921,472	65.8	XXX	XXX	37,576,448,262	46,836,473,210
11.02 Residential Mortgage-Backed Securities	301,954,703	730,557,398	467,721,164	368,718,970	126,677,051	XXX	1,995,629,286	1.6	XXX	XXX	1,671,428,670	324,200,616
11.03 Commercial Mortgage-Backed Securities	254,273,673	901,506,434	1,388,643,534	104,509,551	27,667,154	XXX	2,676,600,346	2.1	XXX	XXX	1,172,974,734	1,503,625,612
11.04 Other Loan-Backed and Structured Securities	1,588,132,417	7,180,514,666	4,569,081,619	2,090,918,777	904,408,214	XXX	16,333,055,693	12.7	XXX	XXX	786,729,157	15,546,326,536
11.05 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	45,481,250	45,481,250	0.0	XXX	XXX	45,481,250	
11.06 Affiliated Bank Loans	3,834,497,688	195,627,932	249,072,645			XXX	4,279,198,265	3.3	XXX	XXX		4,279,198,265
11.07 Unaffiliated Bank Loans	74,132,846	3,582,680,559	7,129,744,956	880,466,129	6,920,786,904	XXX	18,587,811,394	14.5	XXX	XXX		18,587,811,394
11.08 Totals	12,687,465,048	30,833,143,263	35,008,150,550	19,827,816,977	29,928,640,618	45,481,250	128,330,697,706	100.0	XXX	XXX	41,253,062,073	87,077,635,633
11.09 Line 11.08 as a % of Col. 7	9.9	24.0	27.3	15.5	23.3	0.0	100.0	XXX	XXX	XXX	32.1	67.9
12. Total Bonds Prior Year												
12.01 Issuer Obligations	8,984,858,853	16,416,157,148	20,945,617,713	14,506,752,294	22,471,272,055	XXX	83,324,658,063	69.8			39,498,228,929	43,826,429,134
12.02 Residential Mortgage-Backed Securities	406,083,816	1,142,735,641	639,374,837	471,859,247	159,294,736	XXX	2,819,348,277	2.4	2,578,744,144	2.4	2,578,744,144	240,604,133
12.03 Commercial Mortgage-Backed Securities	258,610,962	900,775,171	1,407,900,345	78,388,493	23,793,109	XXX	2,669,468,079	2.2	2,669,468,079	2.2	1,320,242,971	1,349,225,108
12.04 Other Loan-Backed and Structured Securities	1,412,411,617	6,878,328,394	4,208,499,811	944,242,885	416,804,640	XXX	13,860,287,346	11.6	13,860,287,346	11.6	643,214,573	13,217,072,773
12.05 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	109,647,889	109,647,889	0.1	109,647,889	0.1	109,647,889	
12.06 Affiliated Bank Loans	21,668,462	3,752,437,511	54,610,000			XXX	3,828,715,973	3.2	3,828,715,973	3.2		3,828,715,973
12.07 Unaffiliated Bank Loans	122,154,549	2,505,294,071	3,956,028,241	581,706,818	5,543,059,843	XXX	12,708,243,523	10.7	12,708,243,523	10.7	2,001,183	12,706,242,339
12.08 Totals	11,205,788,258	31,595,727,936	31,212,030,947	16,582,949,737	28,614,224,383	109,647,889	119,320,369,149	100.0	119,320,369,149	100.0	44,152,079,689	75,168,289,460
12.09 Line 12.08 as a % of Col. 9	9.4	26.5	26.2	13.9	24.0	0.1	XXX	XXX	XXX	XXX	37.0	63.0
13. Total Publicly Traded Bonds												
13.01 Issuer Obligations	1,426,097,585	5,713,076,101	7,146,102,898	8,319,056,719	14,972,114,955	XXX	37,576,448,258	29.3	39,498,228,929	33.1	37,576,448,258	XXX
13.02 Residential Mortgage-Backed Securities	237,139,104	608,973,059	408,892,395	306,970,270	109,453,842	XXX	1,671,428,670	1.3	2,578,744,144	2.2	1,671,428,670	XXX
13.03 Commercial Mortgage-Backed Securities	141,385,000	509,851,193	485,435,877	29,518,197	6,784,468	XXX	1,172,974,735	0.9	1,172,974,735	1.1	1,172,974,735	XXX
13.04 Other Loan-Backed and Structured Securities	80,586,233	312,170,179	200,409,272	120,986,881	72,576,590	XXX	786,729,155	0.6	643,214,573	0.5	786,729,155	XXX
13.05 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX	45,481,250	45,481,250	0.0	109,647,889	0.1	45,481,250	XXX
13.06 Affiliated Bank Loans						XXX						XXX
13.07 Unaffiliated Bank Loans						XXX			2,001,183	0.0		XXX
13.08 Totals	1,885,207,922	7,144,070,532	8,240,840,442	8,776,532,067	15,160,929,855	45,481,250	41,253,062,068	32.1	44,152,079,689	37.0	41,253,062,068	XXX
13.09 Line 13.08 as a % of Col. 7	4.6	17.3	20.0	21.3	36.8	0.1	100.0	XXX	XXX	XXX	100.0	XXX
13.10 Line 13.08 as a % of Line 11.08, Col. 7, Section 11	1.5	5.6	6.4	6.8	11.8	0.0	32.1	XXX	XXX	XXX	32.1	XXX
14. Total Privately Placed Bonds												
14.01 Issuer Obligations	5,208,376,136	12,529,180,173	14,057,783,734	8,064,146,831	6,976,986,340	XXX	46,836,473,214	36.5	43,826,429,134	36.7	XXX	46,836,473,214
14.02 Residential Mortgage-Backed Securities	64,815,599	121,584,339	58,828,769	61,748,700	17,223,209	XXX	324,200,616	0.3	240,604,133	0.2	XXX	324,200,616
14.03 Commercial Mortgage-Backed Securities	112,888,673	391,655,241	903,207,657	74,991,354	20,882,686	XXX	1,503,625,611	1.2	1,349,225,108	1.1	XXX	1,503,625,611
14.04 Other Loan-Backed and Structured Securities	1,507,546,184	6,868,344,487	4,368,672,347	1,969,931,896	831,831,624	XXX	15,546,326,538	12.1	13,217,072,773	11.1	XXX	15,546,326,538
14.05 SVO Identified Funds	XXX	XXX	XXX	XXX	XXX							XXX
14.06 Affiliated Bank Loans	3,834,497,688	195,627,932	249,072,645			XXX	4,279,198,265	3.3	3,828,715,973	3.2	XXX	4,279,198,265
14.07 Unaffiliated Bank Loans	74,132,846	3,582,680,559	7,129,744,956	880,466,129	6,920,786,904	XXX	18,587,811,394	14.5	12,706,242,339	10.6	XXX	18,587,811,394
14.08 Totals	10,802,257,126	23,689,072,731	26,767,310,108	11,051,284,910	14,767,710,763		87,077,635,638	67.9	75,168,289,460	63.0	XXX	87,077,635,638
14.09 Line 14.08 as a % of Col. 7	12.4	27.2	30.7	12.7	17.0		100.0	XXX	XXX	XXX	XXX	100.0
14.10 Line 14.08 as a % of Line 11.08, Col. 7, Section 11	8.4	18.5	20.9	8.6	11.5		67.9	XXX	XXX	XXX	XXX	67.9

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DA - VERIFICATION BETWEEN YEARS

Short-Term Investments

	1	2	3	4	5
	Total	Bonds	Mortgage Loans	Other Short-term Investment Assets (a)	Investments in Parent, Subsidiaries and Affiliates
1. Book/adjusted carrying value, December 31 of prior year	2,213,051,262	2,213,051,262			
2. Cost of short-term investments acquired	6,293,088,230	6,293,088,230			
3. Accrual of discount	6,137,295	6,137,295			
4. Unrealized valuation increase (decrease)					
5. Total gain (loss) on disposals	275,735	275,735			
6. Deduct consideration received on disposals	5,793,438,744	5,793,438,744			
7. Deduct amortization of premium					
8. Total foreign exchange change in book/adjusted carrying value					
9. Deduct current year's other than temporary impairment recognized	3,663,319	3,663,319			
10. Book adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9)	2,715,450,459	2,715,450,459			
11. Deduct total nonadmitted amounts					
12. Statement value at end of current period (Line 10 minus Line 11)	2,715,450,459	2,715,450,459			

(a) Indicate the category of such assets, for example, joint ventures, transportation equipment:

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART A - VERIFICATION BETWEEN YEARS

Options, Caps, Floors, Collars, Swaps and Forwards

1. Book/adjusted carrying value, December 31, prior year (Line 10, prior year)	3,785,478,430
2. Cost paid/(consideration received) on additions:	
2.1 Current year paid/(consideration received) at time of acquisition, still open, Section 1, Column 12	35,184,071
2.2 Current year paid/(consideration received) at time of acquisition, terminated, Section 2, Column 14	30,582,907
	65,766,978
3. Unrealized valuation increase/(decrease):	
3.1 Section 1, Column 17	744,799,969
3.2 Section 2, Column 19	1,097,023,492
	1,841,823,461
4. SSAP No. 108 Adjustments	
5. Total gain (loss) on termination recognized, Section 2, Column 22	(376,945,550)
6. Considerations received/(paid) on terminations, Section 2, Column 15	(152,340,922)
7. Amortization:	
7.1 Section 1, Column 19	58,012
7.2 Section 2, Column 21	123,008
	181,020
8. Adjustment to the book/adjusted carrying value of hedged item:	
8.1 Section 1, Column 20	
8.2 Section 2, Column 23	
9. Total foreign exchange change in book/adjusted carrying value:	
9.1 Section 1, Column 18	
9.2 Section 2, Column 20	
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6+7+8+9)	5,468,645,260
11. Deduct nonadmitted assets	
12. Statement value at end of current period (Line 10 minus Line 11)	5,468,645,260

SCHEDULE DB - PART B - VERIFICATION

Futures Contracts

1. Book/Adjusted carrying value, December 31 of prior year (Line 6, prior year)	(57,823,336)
2. Cumulative cash change (Section 1, Broker Name/Net Cash Deposits Footnote - Cumulative Cash Change Column)	
3.1 Add:	
Change in variation margin on open contracts - Highly effective hedges	
3.11 Section 1, Column 15, current year minus	
3.12 Section 1, Column 15, prior year	
Change in variation margin on open contracts - All other	
3.13 Section 1, Column 18, current year minus	33,162,834
3.14 Section 1, Column 18, prior year	(57,823,336)
	90,986,170
	90,986,170
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	33,162,834
3.24 Section 1, Column 19, prior year plus	(57,823,336)
3.25 SSAP No. 108 Adjustments	90,986,170
	90,986,170
3.3 Subtotal (Line 3.1 minus Line 3.2)	
4.1 Cumulative variation margin on terminated contracts during the year (Section 2, Column 15)	(316,767,513)
4.2 Less:	
4.21 Amount used to adjust basis of hedged item (Section 2, Column 17)	
4.22 Amount recognized (Section 2, Column 16)	(258,944,176)
4.23 SSAP No. 108 Adjustments	(258,944,176)
4.3 Subtotal (Line 4.1 minus Line 4.2)	(57,823,336)
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	(33,162,834)
6. Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)	33,162,834
7. Deduct total nonadmitted amounts	
8. Statement value at end of current period (Line 6 minus Line 7)	33,162,834

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z	50,000,000	13,100,000	17,050,390	06/03/2021	06/03/2051	Interest Rate Swap		3,965,966	42086P-AC-7	Kingsland Ltd-SERIES 18-8A CLASS A	1		13,100,000	13,084,424
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z		11,957,792	12,545,000	06/03/2021	06/03/2051	Interest Rate Swap			320808-AD-0	FIRST MARYLAND CAP I-LIMITED GUARANTEE NOTE	2		11,957,792	12,545,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z		12,000,000	12,000,000	06/03/2021	06/03/2051	Interest Rate Swap			89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1		12,000,000	12,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z		10,000,000	9,977,210	06/03/2021	06/03/2051	Interest Rate Swap			09629L-AE-5	BLUEMOUNTAIN CLO XXIII L-BLUEM 2018-23A B	1		10,000,000	9,977,210
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate Corp Inv Grade Equiv Bonds	1Z		6,195,517	6,146,934	06/03/2021	06/03/2051	Interest Rate Swap			03328Y-AG-9	Anchorage Capital CLO Lt-ANCHC 2018-18A C	1		6,195,517	6,146,934
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	264,000,000	90,000,000	128,852,995	11/29/2012	11/29/2042	Interest Rate Swap		38,852,995	12625Z-MN-9	CRE MMI SUB, LLC - Term Loan Series 2021-2	1		90,000,000	90,000,000
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,056,757	4,092,740	11/29/2012	11/29/2042	Interest Rate Swap			83149F-AD-6	SLM Student Loan Trust 2006-6	1		4,056,757	4,092,740
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,749,179	23,000,299	11/29/2012	11/29/2042	Interest Rate Swap			375415-AA-4	GILBERT PARK CLO LTD-SERIES 17-1A CLASS A	1		22,749,179	23,000,299
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	13,054,373	11/29/2012	11/29/2042	Interest Rate Swap			670970-AC-9	OPC CLO 2017-14 Ltd-SERIES 17-14A CLASS A1B	1		13,100,000	13,054,373
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	7,999,976	11/29/2012	11/29/2042	Interest Rate Swap			38137H-BW-7	Goldentree Loan Opportun-SERIES 2015-11A CLASS BR2	1		8,000,000	7,999,976
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,093,327	9,950,260	11/29/2012	11/29/2042	Interest Rate Swap			56845N-AE-0	Signal Peak CLO 8 Ltd-SPEAK 2020-8A C	1		10,093,327	9,950,260
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,793,300	11/29/2012	11/29/2042	Interest Rate Swap			33833V-AE-5	522 Funding CLO 2019-5 L-MORGN 2021-7A B	1		10,000,000	9,793,300
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,050,000	11,051,724	11/29/2012	11/29/2042	Interest Rate Swap			03331J-AJ-1	Anchorage Capital CLO Lt-ANCHC 2018-10A B	1		11,050,000	11,051,724
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,001,620	11/29/2012	11/29/2042	Interest Rate Swap			38137M-AK-3	Goldentree Loan Opportun-GLD12 2016-12A AJR	1		15,000,000	15,001,620
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,456,508	11/29/2012	11/29/2042	Interest Rate Swap			03767M-AJ-7	Apidos CLO-APID 2018-29A B	1		4,500,000	4,456,508
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,600,000	19,599,980	11/29/2012	11/29/2042	Interest Rate Swap			17181T-AA-9	CIFC Funding 2018-IV Ltd-SERIES 18-4A CLASS A1	1		19,600,000	19,599,980
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	12,001,800	11/29/2012	11/29/2042	Interest Rate Swap			04017J-AE-1	ARES CLO Ltd-ARES 2018-49A B	1		12,000,000	12,001,800
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,000,000	60,021,360	11/29/2012	11/29/2042	Interest Rate Swap			29002H-AL-3	Elmwood CLO III Ltd-ELMW3 2019-3A AR	1		60,000,000	60,021,360
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,425,000	1,418,538	11/29/2012	11/29/2042	Interest Rate Swap			06760E-AG-1	Babson CLO Ltd 2013-I-SERIES 2013-1A CLASS DR	2		1,425,000	1,418,538
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,220,000	1,180,252	11/29/2012	11/29/2042	Interest Rate Swap			056162-AU-4	Babson CLO Ltd 2015-I-SERIES 2015-1A CLASS DR	2		1,220,000	1,180,252
57629*AC5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		196,970	196,381	11/29/2012	11/29/2042	Interest Rate Swap			06759F-AE-6	BARSON CLO LTD 2015-II-SERIES 15-2A CLASS C1R	1		196,970	196,381
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	12,000,000	30,106,031	12/27/2012	12/27/2042	Interest Rate Swap		18,105,887	67112K-AC-3	OPC CLO Ltd-SEREIS 18-15A CLASS A3	1		12,000,000	12,000,144
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,575,000	12,558,401	12/27/2012	12/27/2042	Interest Rate Swap			056162-AN-0	Babson CLO Ltd 2015-I-BABSN 2015-1A AR	1		12,575,000	12,558,401
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,250,000	7,250,348	12/27/2012	12/27/2042	Interest Rate Swap			40439D-AE-8	Highbridge Loan Manage-HLM 15A-19 B	1		7,250,000	7,250,348
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,198,778	12/27/2012	12/27/2042	Interest Rate Swap			03330A-AC-6	Anchorage Capital CLO 3-ANCHC 2014-3RA B	1		3,200,000	3,198,778
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	50,001,850	12/27/2012	12/27/2042	Interest Rate Swap			87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1		50,000,000	50,001,850
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	12/27/2012	12/27/2042	Interest Rate Swap			500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1		10,000,000	10,000,000
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,900,000	5,903,210	12/27/2012	12/27/2042	Interest Rate Swap			87250R-AB-0	TICP CLO XV Ltd-TICP 2020-15A B	1		5,900,000	5,903,210
57629*AE1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,928,459	1,690,346	12/27/2012	12/27/2042	Interest Rate Swap			429827-AR-9	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B1	1		1,928,459	1,690,346
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	8,116,708	25,809,527	12/27/2012	12/27/2042	Interest Rate Swap		18,105,887	92977H-AG-3	WACHOVIA STUDENT LOAN TR-WSLT 2005-1 B	1		8,116,708	7,703,640
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,042,104	19,958,160	12/27/2012	12/27/2042	Interest Rate Swap			94950G-AN-7	Wellfleet CLO 2017-1 Ltd-WELF 2017-1A A2R	1		20,042,104	19,958,160

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	30,053,910	12/27/2012	12/27/2042	Interest Rate Swap				83004L-AC-9	610 Funding QLO-SIX10 2021-2RA A1R2	1	30,000,000	30,053,910
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,000,000	23,000,322	12/27/2012	12/27/2042	Interest Rate Swap				06760P-AE-1	Babson QLO Ltd/Cayman Is-BABSN 2018-3A A2	1	23,000,000	23,000,322
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,499,962	12/27/2012	12/27/2042	Interest Rate Swap				55821A-AE-8	Madison Park Funding Ltd-SERIES 18-28A CLASS B	1	9,500,000	9,499,962
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,966,016	12/27/2012	12/27/2042	Interest Rate Swap				28622J-AB-3	ARROWMARK COLORADO HOLDI-SERIES 17-7A CLASS B	1	4,000,000	3,966,016
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,750,000	4,750,480	12/27/2012	12/27/2042	Interest Rate Swap				55954W-AC-3	Magnetite XXIV Ltd-SERIES 2019-24A CLASS B	1	4,750,000	4,750,480
57629*AD3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,959,591	1,877,515	12/27/2012	12/27/2042	Interest Rate Swap				784424-AE-3	S/LC STUDENT LOAN TRUST 2-SERIES 07-1 CLASS B	1	1,959,591	1,877,515
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	6,000,000	24,562,204	12/28/2012	12/28/2042	Interest Rate Swap		18,562,126		38138B-AG-5	Goldentree Loan Managem-GLM 2018-3A B1	1	6,000,000	6,000,078
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,190,253	20,011,480	12/28/2012	12/28/2042	Interest Rate Swap				56845N-AC-4	Signal Peak QLO 8 Ltd-SPEAK 2020-8A B	1	20,190,253	20,011,480
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,750,000	13,595,739	12/28/2012	12/28/2042	Interest Rate Swap				55954K-AN-5	Magnetite XIX Ltd-SERIES 2017-19A CLASS B1R	1	13,750,000	13,595,739
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		34,745,000	34,757,300	12/28/2012	12/28/2042	Interest Rate Swap				13876N-AL-7	Canyon QLO 2020-2 Ltd-CANYC 2020-2A AR	1	34,745,000	34,757,300
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	12/28/2012	12/28/2042	Interest Rate Swap				500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,017,218	2,208,644	12/28/2012	12/28/2042	Interest Rate Swap				64033T-AB-9	NELNET STUDENT LOAN TRUS-SERIES 2015-3A CLASS B	1	2,017,218	2,208,644
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,000,144	12/28/2012	12/28/2042	Interest Rate Swap				89852T-AN-8	Tryon Park QLO Ltd-TPCLO 2013-1A A1JR	1	8,000,000	8,000,144
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	3,000,306	12/28/2012	12/28/2042	Interest Rate Swap				87248K-AS-3	TICP QLO VI 2016-5 LTD-TICP 2016-5A A2R	1	3,000,000	3,000,306
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	995,908	12/28/2012	12/28/2042	Interest Rate Swap				94950J-AA-9	Wellfleet QLO Ltd-SERIES 18-1A CLASS A	1	1,000,000	995,908
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	4,000,408	12/28/2012	12/28/2042	Interest Rate Swap				40437L-AE-2	HPS LOAN MANAGEMENT 13-2-HLM 13A-18 A2	1	4,000,000	4,000,408
57629*AF8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,060,000	5,005,742	12/28/2012	12/28/2042	Interest Rate Swap				92917A-AE-6	Voya QLO Ltd-SERIES 18-1A CLASS B	1	5,060,000	5,005,742
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	59,000,000	77,320,698	12/28/2012	12/28/2042	Interest Rate Swap		18,562,126		94950J-AA-9	Wellfleet QLO Ltd-SERIES 18-1A CLASS A	1	59,000,000	58,758,572
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,200,000	14,200,043	12/28/2012	12/28/2042	Interest Rate Swap				06759F-AB-2	BABSON QLO LTD 2015-11-SERIES 15-2A CLASS AR	1	14,200,000	14,200,043
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,849,020	12/28/2012	12/28/2042	Interest Rate Swap				04017T-AE-9	Ares XXXIR QLO Ltd-SERIES 14-31RA CLASS B	1	20,000,000	19,849,020
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,599,964	1,591,779	12/28/2012	12/28/2042	Interest Rate Swap				87246M-AW-2	TICP QLO VI 2016-2 Ltd-TICP 2016-6A CR2	1	1,599,964	1,591,779
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,200,000	4,184,296	12/28/2012	12/28/2042	Interest Rate Swap				12551R-AE-8	CIFC Funding 2018-1 Ltd-SERIES 18-1A CLASS C	1	4,200,000	4,184,296
57629*AH4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,100,007	12/28/2012	12/28/2042	Interest Rate Swap				08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,100,007
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	20,000,000	38,510,966	12/28/2012	12/28/2042	Interest Rate Swap		18,562,126		09628N-AQ-5	BlueMountain QLO 2015-4 -SERIES 15-4A CLASS A2R	1	20,000,000	19,948,840
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,050,000	12,001,305	12/28/2012	12/28/2042	Interest Rate Swap				64031D-AB-6	Nelnet Student Loan Trus-SERIES 19-3A CLASS B	1	12,050,000	12,001,305
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,701,912	3,643,024	12/28/2012	12/28/2042	Interest Rate Swap				63939F-AC-4	Nelnet Student Loan Tru-SERIES 15-1 CLASS B	1	3,701,912	3,643,024
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,000,545	12/28/2012	12/28/2042	Interest Rate Swap				12550G-AE-3	CIFC Funding Ltd-CIFC 2018-5A B	1	5,000,000	5,000,545
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		34,170,347	34,689,736	12/28/2012	12/28/2042	Interest Rate Swap				72403Z-NQ-3	PIONEERS GATE LLC 2020-1 USAUT	1	34,170,347	34,689,736
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,197,213	12/28/2012	12/28/2042	Interest Rate Swap				48250R-BN-5	KKR QLO 12 Ltd-KKR 12 BR2	1	3,200,000	3,197,213
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,250,000	4,250,332	12/28/2012	12/28/2042	Interest Rate Swap				75888M-AG-5	Regatta XIV Funding Ltd-SERIES 18-3A CLASS B	1	4,250,000	4,250,332
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,200,000	5,200,499	12/28/2012	12/28/2042	Interest Rate Swap				41154X-AG-0	Harbor Park QLO, Ltd-HAR-HARB 2018-1A B1	1	5,200,000	5,200,499

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*AG6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,600,000	38,606,794	12/28/2012	12/28/2042	Interest Rate Swap				06762L-AM-0	Barings CLO Ltd 2020-I-BABSN 2020-1A AR	1	38,600,000	38,606,794
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	9,550,000	18,769,189	12/28/2012	12/28/2042	Interest Rate Swap		9,281,063		04965F-AG-6	Atrium XV-SERIES 15A CLASS B	1	9,550,000	9,488,126
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	12,000,000	12/28/2012	12/28/2042	Interest Rate Swap				89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	12,000,000	12,000,000
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,683,926	6,683,926	12/28/2012	12/28/2042	Interest Rate Swap				63940A-AD-0	NAVIENT STUDENT LOAN TRU-SERIES 17-4A CLASS B	1	6,600,000	6,683,926
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,000,000	5,977,650	12/28/2012	12/28/2042	Interest Rate Swap				06762L-AN-8	Barings CLO Ltd 2020-I-BABSN 2020-1A BR	1	6,000,000	5,977,650
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,100,007	12/28/2012	12/28/2042	Interest Rate Swap				08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,100,007
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,500,000	2,499,990	12/28/2012	12/28/2042	Interest Rate Swap				13876J-AE-2	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	2,500,000	2,499,990
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,400,685	12/28/2012	12/28/2042	Interest Rate Swap				77342K-AC-4	Rockford Tower CLO 2018-2 Ltd	1	6,400,000	6,400,685
57629*AJ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,050,000	8,050,129	12/28/2012	12/28/2042	Interest Rate Swap				06760G-AC-5	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS B	1	8,050,000	8,050,129
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	10,000,000	19,282,803	12/28/2012	12/28/2042	Interest Rate Swap		9,281,063		24380L-AE-3	DEER CREEK CLO LTD 2017--SERIES 17-1A CLASS B	1	10,000,000	10,001,740
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,500,000	24,499,951	12/28/2012	12/28/2042	Interest Rate Swap				05683E-AN-2	Bain Capital Credit CLO -BCC 2020-2A AR	1	24,500,000	24,499,951
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,570,000	13,569,946	12/28/2012	12/28/2042	Interest Rate Swap				48249V-AQ-4	YKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A2R	1	13,570,000	13,569,946
57629*AK7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	12/28/2012	12/28/2042	Interest Rate Swap				500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	10,000,000	19,281,063	12/28/2012	12/28/2042	Interest Rate Swap		9,281,063		500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,742,471	3,766,458	12/28/2012	12/28/2042	Interest Rate Swap				784170-ZZ-8	SFR FTTH SAS Term Loan	2	3,742,471	3,766,458
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,500,000	24,503,210	12/28/2012	12/28/2042	Interest Rate Swap				06760W-AG-1	Barings Middle Market CL-BMM 2021-1A B	1	24,500,000	24,503,210
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,750,000	9,679,995	12/28/2012	12/28/2042	Interest Rate Swap				92918Q-AE-0	Voya CLO Ltd-VOYA 2021-1A B	1	9,750,000	9,679,995
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,100,000	1,100,007	12/28/2012	12/28/2042	Interest Rate Swap				08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,100,007
57629*AL5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,600,000	4,599,977	12/28/2012	12/28/2042	Interest Rate Swap				05875H-AE-3	Ballyrock CLO 2018-1 Ltd-SERIES 2018-1A CLASS B	1	4,600,000	4,599,977
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	5,400,000	14,681,700	12/28/2012	12/28/2042	Interest Rate Swap		9,281,063		12548J-AE-2	CIFC FUNDING LTD-SERIES 17-3A CLASS A2	1	5,400,000	5,400,637
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,821,877	12/28/2012	12/28/2042	Interest Rate Swap				74988L-AC-8	ALM XIV Ltd-SERIES 14-14A CLASS A2R2	1	11,900,000	11,821,877
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,864,562	5,897,022	12/28/2012	12/28/2042	Interest Rate Swap				66704J-AJ-7	Northstar Education Fina-REVENUE BONDS	1	5,864,562	5,897,022
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,001,128	12/28/2012	12/28/2042	Interest Rate Swap				38808P-AN-6	Greywolf CLO V Ltd-GWOLF 2015-1A A2R	1	8,000,000	8,001,128
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,200,000	11,200,134	12/28/2012	12/28/2042	Interest Rate Swap				08181B-AS-8	Benefit Street Partners -SERIES 16-9A CLASS BR	1	11,200,000	11,200,134
57629*AM3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,000,952	12/28/2012	12/28/2042	Interest Rate Swap				94951D-AC-7	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A1B	1	8,000,000	8,000,952
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	350,000,000	20,000,000	39,011,265	06/10/2021	06/10/2051	Interest Rate Swap		19,008,045		36248M-AJ-6	GT Loan Financing I Ltd -SERIES 2013-1A CLASS AR	1	20,000,000	20,003,220
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		350,000,000	350,000,000	06/10/2021	06/10/2051	Interest Rate Swap				48232F-MM-2	KREOCS LENDING I LLC - Senior Secured Term Facility	1	350,000,000	350,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	225,000,000	75,000,000	86,005,968	06/10/2021	06/10/2051	Interest Rate Swap		11,005,968		88165Z-MM-7	Tetraon Financial Group (Delaware) LLC - Revolver	1	75,000,000	75,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		92,750,000	92,750,000	06/10/2021	06/10/2051	Interest Rate Swap				32008Z-MM-6	Secured Revolving Loan Facility	1	92,750,000	92,750,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		57,270,000	57,270,000	06/10/2021	06/10/2051	Interest Rate Swap				91831Z-MM-3	YPC ASSET BACKED OPPORTUNISTIC CREDIT Holdings Fund, L.P - Secured Revolving Loan Facility	1	57,270,000	57,270,000

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		25,000,000	25,007,375	06/10/2021	06/10/2051	Interest Rate Swap			67104L-AF-4	QHA Loan Funding 2013-2 -QHAF 2013-2A BR	1	25,000,000	25,007,375
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,850,000	13,850,720	06/10/2021	06/10/2051	Interest Rate Swap			38137P-AU-4	Goldentree Loan Opportun-SERIES 2015-10A CLASS BR	1	13,850,000	13,850,720
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,000,000	1,000,000	06/10/2021	06/10/2051	Interest Rate Swap			941848-D8-9	Waters Corporation Gtd Senior Note Series H	2	1,000,000	1,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,800,000	3,773,575	06/10/2021	06/10/2051	Interest Rate Swap			74988L-AJ-3	ALM XIV Ltd-SERIES 14-14A CLASS BR2	1	3,800,000	3,773,575
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	300,000,000	25,000,000	42,155,536	06/10/2021	06/10/2051	Interest Rate Swap		17,155,536	500798-MC-4	KREF Lending VII 2018-3 Term Loan	1	25,000,000	25,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	15,000,165	06/10/2021	06/10/2051	Interest Rate Swap			48250W-AJ-4	KKR CLO 14 Ltd-KKR 14 BR	1	15,000,000	15,000,165
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	5,000,510	06/10/2021	06/10/2051	Interest Rate Swap			87248K-AS-3	TICP CLO VI 2016-5 LTD-TICP 2016-5A A2R	1	5,000,000	5,000,510
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,028,309	1,011,951	06/10/2021	06/10/2051	Interest Rate Swap			63939F-AC-4	Navient Student Loan Tru-SERIES 15-1 CLASS B	1	1,028,309	1,011,951
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,000,000	3,966,016	06/10/2021	06/10/2051	Interest Rate Swap			28622J-AB-3	ARROWMARK COLORADO HOLDI-SERIES 17-7A CLASS B	1	4,000,000	3,966,016
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		252,000,000	252,017,136	06/10/2021	06/10/2051	Interest Rate Swap			06762W-AA-2	BABSN 2020-3A A FLOATING COUPON 1.538220 MATURITY 20340115	1	252,000,000	252,017,136
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	8,800,000	20,993,275	06/11/2021	06/11/2051	Interest Rate Swap		12,192,228	38137P-AS-9	Goldentree Loan Opportun-SERIES 2015-10A CLASS AJR	1	8,800,000	8,801,047
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		97,820,506	97,820,506	06/11/2021	06/11/2051	Interest Rate Swap			96269F-MM-9	X WH REDF2-TSE SELLER, LLC - Term Loan Facility	1	97,820,506	97,820,506
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,500,000	7,491,360	06/11/2021	06/11/2051	Interest Rate Swap			55819T-AU-5	Madison Park Funding XX -SERIES 2016-20A CLASS CR	1	7,500,000	7,491,360
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,900,000	13,727,265	06/11/2021	06/11/2051	Interest Rate Swap			03328Y-AE-4	Anchorage Capital CLO Lt-ANCHC 2018-1RA B	1	13,900,000	13,727,265
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,478,620	7,323,060	06/11/2021	06/11/2051	Interest Rate Swap			64034C-AB-5	Netnet Student Loan Trus-NSLT 2019-1A B	1	7,478,620	7,323,060
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,026,650	06/11/2021	06/11/2051	Interest Rate Swap			278300-AJ-7	Eaton Vance CLO 2020-1 L-EATON 2020-1A AR	1	50,000,000	50,026,650
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,350,000	5,327,364	06/11/2021	06/11/2051	Interest Rate Swap			36320T-AX-1	Galaxy XXII CLO Ltd-GALXY 2016-22A BRR	1	5,350,000	5,327,364
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		60,000,000	60,000,000	06/11/2021	06/11/2051	Interest Rate Swap			69324F-MR-8	PCRED LENDING III LLC, PCRED LENDING III SPE I LLC and PCRED LENDING III OFFSHORE LTD - Term Loan Series 2021-6	1	60,000,000	60,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	325,000,000	8,300,000	22,653,803	06/11/2021	06/11/2051	Interest Rate Swap		14,352,599	05684D-AG-8	Bain Capital Credit CLO-BCC 2020-1A B FLOATING	1	8,300,000	8,301,204
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,000,000	7,974,912	06/11/2021	06/11/2051	Interest Rate Swap			83608G-AQ-9	Sound Point CLO II Ltd-SNDPT 2013-1A A2R	1	8,000,000	7,974,912
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	14,980,770	06/11/2021	06/11/2051	Interest Rate Swap			05682V-AC-9	Bain Capital Credit CLO -SERIES 18-2A CLASS A2	1	15,000,000	14,980,770
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,910,000	6,911,154	06/11/2021	06/11/2051	Interest Rate Swap			50188Q-AE-1	L'OM XIX LTD PARTNERSHIP DEF MEZZ NT CL C	1	6,910,000	6,911,154
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		156,898,847	156,898,847	06/11/2021	06/11/2051	Interest Rate Swap			901399-MQ-5	Twinbrook Capital Funding VII DSPV, LLC - Term Loan	1	156,898,847	156,898,847
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		107,840,663	107,840,663	06/11/2021	06/11/2051	Interest Rate Swap			69324F-MN-7	PCRED LENDING III LLC, PCRED LENDING III SPE I LLC and PCRED LENDING III OFFSHORE LTD.-Term Loan 2020-2	1	107,840,663	107,840,663
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,100,000	1,100,007	06/11/2021	06/11/2051	Interest Rate Swap			08179M-AC-3	Benefit Street Partners -BSP 2018-15A A2A	1	1,100,000	1,100,007
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,800,000	5,672,278	06/11/2021	06/11/2051	Interest Rate Swap			01749B-AC-3	Alligro CLO VI Ltd-ALLEG 2017-2A C	1	5,800,000	5,672,278
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,200,000	3,187,683	06/11/2021	06/11/2051	Interest Rate Swap			06762J-AE-3	Babson CLO Ltd/Cayman Is-BABSN 2021-2A C	1	3,200,000	3,187,683
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	15,000,000	06/11/2021	06/11/2051	Interest Rate Swap			89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	15,000,000	15,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	325,000,000	10,000,000	22,821,803	06/11/2021	06/11/2051	Interest Rate Swap		12,821,803	500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,800,000	5,742,336	06/11/2021	06/11/2051	Interest Rate Swap				675700-AP-6	0CP CLO 2019-16 Ltd-SERIES 19-16A CLASS CR	1	5,800,000	5,742,336
		1Z		12,000,000	11,934,288	06/11/2021	06/11/2051	Interest Rate Swap				92917J-AE-7	Yoya CLO 2018-2 Ltd-VOYA 2018-2A B1	1	12,000,000	11,934,288
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		201,600,000	201,600,000	06/11/2021	06/11/2051	Interest Rate Swap				69324#-MO-5	PCRED LENDING III LLC, PCRED LENDING III SPE I LLC and PCRED LENDING III OFFSHORE LTD - Term Loan Series 2020-3	1	201,600,000	201,600,000
		1Z		98,390,934	98,390,934	06/11/2021	06/11/2051	Interest Rate Swap				69324#-MM-9	Term Loan Series 2019-1	1	98,390,934	98,390,934
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	23,500,000	33,218,237	04/09/2013	04/09/2043	Interest Rate Swap		9,854,701		92558V-AC-8	Vibrant CLO Ltd-SERIES 18-9A CLASS A2	1	23,500,000	23,363,536
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,268,725	6,978,441	04/09/2013	04/09/2043	Interest Rate Swap				78442G-PL-4	SLM STUDENT LOAN TRUST-SERIES 2005-4 CLASS B	1	7,268,725	6,978,441
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,328,576	04/09/2013	04/09/2043	Interest Rate Swap				01749B-AB-5	Allegro CLO VI Ltd-ALLEG 2017-2A B	1	6,400,000	6,328,576
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,182,979	3,550,870	04/09/2013	04/09/2043	Interest Rate Swap				12481X-AS-9	CBAM 2018-6 Ltd-CBAM 2018-6A B1R .. Rockford Tower CLO 2018--SERIES 18-1A CLASS B	1	3,182,979	3,550,870
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,496,468	04/09/2013	04/09/2043	Interest Rate Swap				77342J-AC-7	Newark BSL CLO 1 Ltd-NBCLO 2016-1A	1	7,500,000	7,496,468
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,000	6,900,283	04/09/2013	04/09/2043	Interest Rate Swap				65023T-AK-8	A2R BABSON CLO LTD 2015-11-SERIES 15-2A CLASS B2R	1	6,900,000	6,900,283
57629*AW1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		496,718	494,977	04/09/2013	04/09/2043	Interest Rate Swap				06759F-AD-8		1	496,718	494,977
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	60,000,000	28,116,886	39,047,682	04/09/2013	04/09/2043	Interest Rate Swap		10,750,584		784170-ZZ-8	SFR FTTH SAS Term Loan	2	28,116,886	28,297,098
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,500,000	18,364,414	04/09/2013	04/09/2043	Interest Rate Swap				50188G-AX-1	LOM XVIII LP-LGM 18A A2R Flatiron CLO 17 Ltd-FLAT 2017-1A BR	1	18,500,000	18,364,414
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,476,518	04/09/2013	04/09/2043	Interest Rate Swap				33882G-AG-3	Oak Hill Credit Partners-OAKC 2014-10RA CR	1	7,500,000	7,476,518
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,700,000	4,678,747	04/09/2013	04/09/2043	Interest Rate Swap				67707C-AU-2	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	4,700,000	4,678,747
57629*AV3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,000	2,000,206	04/09/2013	04/09/2043	Interest Rate Swap				62848F-AC-6	Sounds Point CLO IV-R LT-SERIES 13-3RA CLASS A	1	2,000,000	2,000,206
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	26,000,000	36,488,307	04/09/2013	04/09/2043	Interest Rate Swap		10,488,359		83609Y-AC-0	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	26,000,000	25,999,948
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,771,907	2,634,402	04/09/2013	04/09/2043	Interest Rate Swap				78442G-OA-7	Elmwood CLO IV Ltd-ELMW4 2020-1A A	1	2,771,907	2,634,402
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	8,504,675	04/09/2013	04/09/2043	Interest Rate Swap				29002G-AB-7	Elmwood CLO II Ltd-ELMW2 2019-2A BR	1	8,500,000	8,504,675
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,946,930	04/09/2013	04/09/2043	Interest Rate Swap				29001L-AN-1	Bain Capital Credit CLO-BCC 2019-4A C	1	15,000,000	14,946,930
57629*AX9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	3,001,974	04/09/2013	04/09/2043	Interest Rate Swap				05684A-AG-4	ARES XLVII CLO Ltd-SERIES 18-47A CLASS A2	1	3,000,000	3,001,974
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	25,900,000	36,276,031	04/09/2013	04/09/2043	Interest Rate Swap		10,488,359		04016V-AC-9	Halsey Point CLO Ltd-SERIES 20-2A CLASS B	1	25,900,000	25,787,672
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,195,314	3,201,930	04/09/2013	04/09/2043	Interest Rate Swap				40638T-AE-2	ANCHORAGE CAPITAL CLO 20-SERIES 13-1A CLASS A2R	1	3,195,314	3,201,930
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,988,330	04/09/2013	04/09/2043	Interest Rate Swap				033292-AS-2	Goldentree Loan Managem-GLM 2019-5A CR	1	10,000,000	9,988,330
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,900,000	10,899,935	04/09/2013	04/09/2043	Interest Rate Swap				38138D-AS-5	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,900,000	10,899,935
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	04/09/2013	04/09/2043	Interest Rate Swap				50079#-MV-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1,R	1	10,000,000	10,000,000
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	1,000,018	04/09/2013	04/09/2043	Interest Rate Swap				89852T-AN-8	Canyon Capital CLO Ltd-CANVC 2012-1RA B	1	1,000,000	1,000,018
57629*AY7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	999,996	04/09/2013	04/09/2043	Interest Rate Swap				13876J-AE-2		1	1,000,000	999,996
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	10,530,000	20,891,762	04/09/2013	04/09/2043	Interest Rate Swap		10,361,762		50079#-MM-8	KREF Lending VII 2018-1 Term Loan Newark BSL CLO 1 Ltd-NBCLO 2016-1A	1	10,530,000	10,530,000
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,191,181	27,504,263	04/09/2013	04/09/2043	Interest Rate Swap				65023T-AJ-1		1	26,191,181	27,504,263

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,665,021	13,860,913	04/09/2013	04/09/2043	Interest Rate Swap			05875H-AC-7	BALLYROCK CLO 2018-1 LTD-SERIES 2018-1A CLASS A2	1	13,665,021	13,860,913
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,000,000	1,000,103	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	1,000,000	1,000,103
57629*AU5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,501,161	04/09/2013	04/09/2043	Interest Rate Swap			48661N-AE-8	KAYNE CLO-SERIES 19-6A CLASS B1	1	5,500,000	5,501,161
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	60,000,000	21,900,000	33,163,181	04/09/2013	04/09/2043	Interest Rate Swap		11,303,740	56607F-AA-3	Marble Point CLO XI Ltd-1P11 2017-2A A	1	21,900,000	21,859,441
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,685,128	10,939,671	04/09/2013	04/09/2043	Interest Rate Swap			66704J-BD-9	NORTHSTAR EDUCATION FINA-SERIES 04-2 CLASS B	1	12,685,128	10,939,671
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,088,945	10,039,302	04/09/2013	04/09/2043	Interest Rate Swap			66704J-BK-3	NORTHSTAR EDUCATION FINA-SERIES 05-1 CLASS B	1	11,088,945	10,039,302
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,500,000	3,495,153	04/09/2013	04/09/2043	Interest Rate Swap			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	3,500,000	3,495,153
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,113,517	04/09/2013	04/09/2043	Interest Rate Swap			22615E-AE-0	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,200,000	3,113,517
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,000	2,000,206	04/09/2013	04/09/2043	Interest Rate Swap			62848F-AC-6	MYERS PARK CLO LTD-MYERS 2018-1A A2	1	2,000,000	2,000,206
57629*BA8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,851,924	04/09/2013	04/09/2043	Interest Rate Swap			44330G-AE-3	Highbridge Loan Manageme-SERIES 4A-2014 CLASS A2R	1	11,900,000	11,851,924
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	225,000,000	34,500,000	44,154,289	06/11/2021	06/11/2051	Interest Rate Swap		9,696,413	01750C-AA-1	Allegro CLO VII Ltd-ALLEG 2018-1A A	1	34,500,000	34,457,876
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,000,000	999,006	06/11/2021	06/11/2051	Interest Rate Swap			48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	1,000,000	999,006
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,100,000	7,100,000	06/11/2021	06/11/2051	Interest Rate Swap			94184B-D8-9	Waters Corporation Gtd Senior Note Series H	2	7,100,000	7,100,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	4,982,780	06/11/2021	06/11/2051	Interest Rate Swap			14314L-AE-5	Carlyle Global Market St-CGMS 2014-2RA A2	1	5,000,000	4,982,780
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,500,000	2,559,434	06/11/2021	06/11/2051	Interest Rate Swap			64032V-AB-5	Nelnet Student Loan Trus-NSLT 2020-5A B	1	2,500,000	2,559,434
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		118,280,000	118,280,000	06/11/2021	06/11/2051	Interest Rate Swap			91831Z-MM-5	YPC SPECIALTY LENDING INVESTMENTS INTERMEDIATE, L.P. - Secured Revolving Loan Facility	1	118,280,000	118,280,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,790,323	13,999,935	06/11/2021	06/11/2051	Interest Rate Swap			72403Z-NS-9	PIONEERS GATE LLC 2021-1 CFCC PORED LENDING III LLC, PORED LENDING III SPE I LLC and PORED LENDING III OFFSHORE LTD - Term Loan Series 2021-5	1	13,790,323	13,999,935
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		46,500,000	46,500,000	06/11/2021	06/11/2051	Interest Rate Swap			68324F-MQ-0	MADISON PARK FUNDING XXI-MDPK 2018-29A A2	1	46,500,000	46,500,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	14,000,000	25,301,125	06/11/2021	06/11/2051	Interest Rate Swap		11,300,537	55820C-AE-5	DRYDEN 64 CLO LTD-DRSLF 2018-64A A	1	14,000,000	14,000,588
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,850,000	22,850,183	06/11/2021	06/11/2051	Interest Rate Swap			26251L-AC-8	KKRF Lending VII LLC - Term Loan Series 2021-10	1	22,850,000	22,850,183
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,000,000	4,000,000	06/11/2021	06/11/2051	Interest Rate Swap			500798-MV-8	Wellfleet CLO Ltd-WELF 2021-1A C	1	4,000,000	4,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,000,000	6,989,486	06/11/2021	06/11/2051	Interest Rate Swap			94950C-AG-1	Senior Secured Notes - Term Loan Series 2020-1	1	7,000,000	6,989,486
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		174,314,063	174,314,063	06/11/2021	06/11/2051	Interest Rate Swap			46143F-MM-6	Barings Middle Market CL-BMM 2021-1A A2	1	174,314,063	174,314,063
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		31,600,000	31,609,417	06/11/2021	06/11/2051	Interest Rate Swap			06760W-AE-6	Madison Park Funding XIV-MDPK 2014-14A BR	1	31,600,000	31,609,417
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	15,000,000	35,070,595	03/05/2014	03/05/2034	Interest Rate Swap		20,078,110	55818R-BA-3	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS BR	1	15,000,000	14,992,485
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,920,000	4,920,482	03/05/2014	03/05/2034	Interest Rate Swap			48249V-AS-0	KKR FINANCIAL CLO LTD-SERIES 13-1A CLASS A1R	1	4,920,000	4,920,482
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,015,000	21,018,320	03/05/2014	03/05/2034	Interest Rate Swap			48249V-AN-1	Bain Capital Credit CLO -BCC 2019-2A BR	1	21,015,000	21,018,320
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,684,135	03/05/2014	03/05/2034	Interest Rate Swap			05682L-AL-1	KKR CLO 24 Ltd-KKR 24 BR	1	13,700,000	13,684,135
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,050,000	8,049,968	03/05/2014	03/05/2034	Interest Rate Swap			48252R-AQ-7	KKR CLO 14 Ltd-KKR 14 AR	1	8,050,000	8,049,968
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	6,993,042	03/05/2014	03/05/2034	Interest Rate Swap			48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	7,000,000	6,993,042

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		33,000,000	33,000,000	03/05/2014	03/05/2034	Interest Rate Swap			500798-MJ-0	KREF Lending VII LLC - Term Loan Series 2021-9	1	33,000,000	33,000,000
57629*BD2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,650,000	1,591,036	03/05/2014	03/05/2034	Interest Rate Swap			06760G-AD-3	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS C	2	1,650,000	1,591,036
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	20,492,638	40,153,281	03/05/2014	03/05/2034	Interest Rate Swap		20,100,663	346845-AC-4	FORT BENNING FAM-UNSECURED SCL XL I FUND L.P. - Senior Secured Revolving Facility	1	20,492,638	20,052,618
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	55,000,000	03/05/2014	03/05/2034	Interest Rate Swap			78401Z-MM-2	ARES XXXI IR CLO LTD-SERIES 14-32RA CLASS A1B	1	55,000,000	55,000,000
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,625,000	13,563,211	03/05/2014	03/05/2034	Interest Rate Swap			04017E-AE-2	ACCESS GROUP INC-SERIES 2015-1 CLASS B	1	13,625,000	13,563,211
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,938,504	1,940,445	03/05/2014	03/05/2034	Interest Rate Swap			00435T-AB-7	CIFC Funding 2021-I Ltd-CIFC 2021-1A B	1	1,938,504	1,940,445
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,593,846	03/05/2014	03/05/2034	Interest Rate Swap			12563E-AC-7	KAYNE CLO I Ltd-KAYNE 2018-1A CR	1	5,600,000	5,593,846
57629*BC4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,499,978	03/05/2014	03/05/2034	Interest Rate Swap			48661A-AN-6	Rockford Tower CLO 2018--SERIES 18-1A CLASS A	1	5,500,000	5,499,978
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	55,967,513	78,285,687	05/19/2014	05/19/2034	Interest Rate Swap		22,048,595	77342J-AA-1	Neuberger Berman CLO Ltd-NEUB 2018-28A B	1	55,967,513	56,237,092
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	7,000,210	05/19/2014	05/19/2034	Interest Rate Swap			64130P-AE-3	Canyon Capital CLO Ltd-CANVC 2021-1A B	1	7,000,000	7,000,210
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	14,777,925	05/19/2014	05/19/2034	Interest Rate Swap			13877E-AE-2	Greywolf CLO V Ltd-WOLF 2015-1A A1R	1	15,000,000	14,777,925
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,900,000	19,902,706	05/19/2014	05/19/2034	Interest Rate Swap			39808P-AL-0	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	19,900,000	19,902,706
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,000,000	9,000,009	05/19/2014	05/19/2034	Interest Rate Swap			04017G-AE-5	BETHPAGE PARK CLO LTD-BETHP 2021-1A B	1	9,000,000	9,000,009
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,725,261	05/19/2014	05/19/2034	Interest Rate Swap			087598-AC-2	KREF Lending VII LLC - Term Loan Series 2021-10	1	6,750,000	6,725,261
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	05/19/2014	05/19/2034	Interest Rate Swap			500798-MV-8	Kayne CLO 4 Ltd-SERIES 19-4A CLASS B1	1	10,000,000	10,000,000
57629*BF7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,749,979	4,767,219	05/19/2014	05/19/2034	Interest Rate Swap			48661Y-AA-2	CIFC Funding 2018-I Ltd-CIFC 2018-1A A	1	4,749,979	4,767,219
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	85,000,000	23,345,914	39,519,901	05/09/2014	05/09/2034	Interest Rate Swap		16,032,948	12551R-AA-6	Apollo Credit Funding IV-SERIES 4A CLASS A1BR	1	23,345,914	23,486,953
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,001,455	05/09/2014	05/09/2034	Interest Rate Swap			03765W-BC-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	15,000,000	15,001,455
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,000	05/09/2014	05/09/2034	Interest Rate Swap			89532Z-MM-1	KVK CLO 2016-1 Ltd-KVK 2016-1A BR2	1	10,000,000	10,000,000
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,395,174	05/09/2014	05/09/2034	Interest Rate Swap			97314D-AE-8	ROCKFORD TOWER CLO 2018--ROCKT 2018-2A A	1	6,400,000	6,395,174
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	20,001,520	05/09/2014	05/09/2034	Interest Rate Swap			77342K-AA-8	Bain Capital Credit CLO -SERIES 1A CLASS C	1	20,000,000	20,001,520
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,900,000	3,840,673	05/09/2014	05/09/2034	Interest Rate Swap			05683L-AG-1	SFR FTTH SAS Term Loan	2	3,900,000	3,840,673
57629*BP5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,481,001	8,535,359	05/09/2014	05/09/2034	Interest Rate Swap			78417G-ZZ-8	OHA Credit Partners XV L-SERIES 17-15A CLASS B	1	8,481,001	8,535,359
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	13,100,000	49,688,584	07/22/2014	07/22/2044	Interest Rate Swap		36,630,805	67707B-AB-6	Regatta XIII Funding LLC-SERIES 18-2A CLASS A2	1	13,100,000	13,057,779
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,300,000	13,300,479	07/22/2014	07/22/2044	Interest Rate Swap			75888F-AE-5	OHA Credit Funding 1 LTD-SERIES 18-1A CLASS B	1	13,300,000	13,300,479
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,000,368	07/22/2014	07/22/2044	Interest Rate Swap			67115W-AG-5	CIFC Funding 2018-II Ltd-CIFC 2018-2A A2	1	8,000,000	8,000,368
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,000,525	07/22/2014	07/22/2044	Interest Rate Swap			17180W-AC-9	Anchorage Capital CLO Lt-SERIES 2014-SRA CLASS B	1	15,000,000	15,000,525
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,500,000	13,468,572	07/22/2014	07/22/2044	Interest Rate Swap			03329A-AE-5	OPC CLO 2017-14 Ltd-SERIES 17-14A CLASS A2	1	13,500,000	13,468,572
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,400,000	11,389,820	07/22/2014	07/22/2044	Interest Rate Swap			67097Q-AE-5	Benefit Street Partners -SERIES 18-14A CLASS A2	1	11,400,000	11,389,820
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,400,000	13,296,110	07/22/2014	07/22/2044	Interest Rate Swap			08179L-AC-5	Madison Park Funding XIV-MDPK 2014-14A CR	1	13,400,000	13,296,110
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,989,858	12,984,985	07/22/2014	07/22/2044	Interest Rate Swap			55818R-BC-9		1	12,989,858	12,984,985

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,900,000	5,874,937	07/22/2014	07/22/2044	Interest Rate Swap				40436X-AG-2	HIGHBRIDGE LOAN MANAGEMIE-SERIES 2014 CLASS BR	1	5,900,000	5,874,937
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,500,000	14,492,895	07/22/2014	07/22/2044	Interest Rate Swap				553205-AC-9	MP CLO III LTD-IMP3 2013-1A AR	1	14,500,000	14,492,895
57629*BR1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,450,000	4,376,379	07/22/2014	07/22/2044	Interest Rate Swap				04018E-AE-1	Ares LIX CLO Ltd-ARES 2021-594 C1 GT Loan Financing I Ltd -SERIES	1	4,450,000	4,376,379
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	20,000,000	56,646,083	07/22/2014	07/22/2044	Interest Rate Swap		36,642,863		36248M-AJ-6	2013-1A CLASS AR	1	20,000,000	20,003,220
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,000,780	07/22/2014	07/22/2044	Interest Rate Swap				48251M-AS-5	KKR CLO 15 Ltd-KKR 15 A2R	1	15,000,000	15,000,780
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,212,967	29,110,140	07/22/2014	07/22/2044	Interest Rate Swap				06761T-AE-2	BIM 2019-1A A2 FLOATING COUPON 2.975000 MATURITY 20311015	1	28,212,967	29,110,140
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,000,000	17,000,000	07/22/2014	07/22/2044	Interest Rate Swap				50079E-MU-0	KREF Lending VII LLC - Term Loan Series 2021-9	1	17,000,000	17,000,000
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,100,000	5,101,142	07/22/2014	07/22/2044	Interest Rate Swap				06760B-AJ-1	BABSON CLO LTD-SERIES 17-1A CLASS C	1	5,100,000	5,101,142
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,883,704	26,883,704	07/22/2014	07/22/2044	Interest Rate Swap				50079E-MQ-9	KREF Lending VII 2018-5 Term Loan Harbor Park CLO, Ltd-HARB 2018-1A C	1	26,883,704	26,883,704
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	4,000,400	07/22/2014	07/22/2044	Interest Rate Swap				41154X-AL-9	Bain Capital Credit CLO -BCC 2020-4A B	1	4,000,000	4,000,400
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,400,000	6,412,333	07/22/2014	07/22/2044	Interest Rate Swap				05684K-AN-7	Ballyrock CDO Ltd-BALLY 2020-14A A2	1	6,400,000	6,412,333
57629*BT7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	3,986,584	07/22/2014	07/22/2044	Interest Rate Swap				05874X-AC-3	SNDPT 2020-1A AR FLOATING COUPON MATURITY 20340720	1	4,000,000	3,986,584
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	60,000,000	96,642,743	07/22/2014	07/22/2044	Interest Rate Swap		36,642,863		83614X-AQ-4	Steele Creek CLO 2018-2 -SERIES 2018-2A CLASS A	1	60,000,000	59,999,880
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,975,888	07/22/2014	07/22/2044	Interest Rate Swap				85816L-AA-6	BETHPAGE PARK CLO LTD-BETHP 2021-1A C	1	16,000,000	15,975,888
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,250,000	3,237,218	07/22/2014	07/22/2044	Interest Rate Swap				08759B-AE-8	TICP CLO VI 2016-2 Ltd-TICP 2016-6A BR2	1	3,250,000	3,237,218
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,892,400	07/22/2014	07/22/2044	Interest Rate Swap				87246M-AU-6	LOM LTD PARTNERSHIP-SERIES 15A CLASS BR	1	10,000,000	9,892,400
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,649,977	07/22/2014	07/22/2044	Interest Rate Swap				50184N-AN-2	RRPF Engine Leasing Ltd Senior Secured	1	5,650,000	5,649,977
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,000,000	22,531,927	07/22/2014	07/22/2044	Interest Rate Swap				07332F-AG-8	CIFC Funding 2021-11-CIFC 2021-2A B	2	23,000,000	22,531,927
57629*BU4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,910,180	07/22/2014	07/22/2044	Interest Rate Swap				12563Y-AC-3	ARES CLO Ltd-SERIES 18-28RA CLASS B	1	10,000,000	9,910,180
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	7,000,000	43,594,636	07/22/2014	07/22/2044	Interest Rate Swap		36,594,629		04017G-AE-5	REGATTA VIII FUNDING LTD-SERIES 2017-1A CLASS B	1	7,000,000	7,000,007
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,600,000	7,600,509	07/22/2014	07/22/2044	Interest Rate Swap				75888K-AC-8	THL Credit Wind River 20-WINDR	1	7,600,000	7,600,509
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,350,000	8,343,637	07/22/2014	07/22/2044	Interest Rate Swap				97315T-AG-7	2017-1A CR Ares XXXIR CLO Ltd-SERIES 14-31RA CLASS A2	1	8,350,000	8,343,637
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,400,000	28,348,653	07/22/2014	07/22/2044	Interest Rate Swap				04017T-AC-3	Carlyle Global Market St-SERIES 18-4A CLASS A2	1	28,400,000	28,348,653
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	7,000,238	07/22/2014	07/22/2044	Interest Rate Swap				14315R-AE-1	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	7,000,000	7,000,238
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,993,075	07/22/2014	07/22/2044	Interest Rate Swap				94950J-AC-5	Kingsland Ltd-SERIES 18-8A CLASS A	1	5,000,000	4,993,075
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		42,000,000	41,950,062	07/22/2014	07/22/2044	Interest Rate Swap				42086P-AC-7	Bain Capital Credit CLO -BCC 2020-2A BR	1	42,000,000	41,950,062
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,325,000	10,287,851	07/22/2014	07/22/2044	Interest Rate Swap				05683E-AQ-5	Wind River CLO Ltd-SERIES 18-3A CLASS B	1	10,325,000	10,287,851
57629*BV2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,500,228	07/22/2014	07/22/2044	Interest Rate Swap				88432U-AE-6	SLM STUDENT LOAN TRUST 2-SERIES 06-7 CLASS B	1	9,500,000	9,500,228
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	6,930,267	20,455,780	08/27/2014	08/27/2044	Interest Rate Swap		13,754,645		78443G-AJ-4	YOVA CLO 2017-4 LTD-SERIES 17-4A CLASS B	1	6,930,267	6,701,135
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,900,000	7,852,047	08/27/2014	08/27/2044	Interest Rate Swap				92916Q-AC-6	Flatiron CLO 18 Ltd-FLAT 2018-1A A	1	7,900,000	7,852,047
57629*BZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,811,253	26,948,214	08/27/2014	08/27/2044	Interest Rate Swap				33883G-AA-5		1	26,811,253	26,948,214

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*CBZ3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,003,100	08/27/2014	08/27/2044	Interest Rate Swap				13876R-AE-4	Canyon CLO 2020-3 Ltd-CANYC 2020-3A CLASS B	1	10,000,000	10,003,100
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	6,750,000	20,506,234	08/27/2014	08/27/2044	Interest Rate Swap		13,774,013		77341D-AE-7	Rockford Tower CLO 2017--SERIES 17-3A CLASS B	1	6,750,000	6,732,221
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,037,824	1,049,334	08/27/2014	08/27/2044	Interest Rate Swap				83715R-AH-5	SOUTH CAROLINA STUDENT L-SERIES 15-A CLASS A	1	1,037,824	1,049,334
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,000,000	25,000,000	08/27/2014	08/27/2044	Interest Rate Swap				50079E-MM-8	KREF Lending VII 2018-1 Term Loan	1	25,000,000	25,000,000
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,360,056	15,500,791	08/27/2014	08/27/2044	Interest Rate Swap				12550A-AT-3	CIFC Funding 2014-V Ltd-CIFC 2014-5A AIR2	1	15,360,056	15,500,791
57629*CA7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,995,000	1,989,316	08/27/2014	08/27/2044	Interest Rate Swap				06760E-AC-0	Babson CLO Ltd 2013-I-SERIES 2013-IS CLASS BR	1	1,995,000	1,989,316
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	50,000,000	22,500,000	36,194,151	08/27/2014	08/27/2044	Interest Rate Swap		13,691,698		94949J-AA-3	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	1	22,500,000	22,502,453
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,900,000	15,900,366	08/27/2014	08/27/2044	Interest Rate Swap				74988L-AA-2	ALM XIV Ltd-SERIES 14-14A CLASS AIR2	1	15,900,000	15,900,366
57629*CC3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,475,000	16,465,609	08/27/2014	08/27/2044	Interest Rate Swap				06760G-AA-9	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A1	1	16,475,000	16,465,609
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	55,000,000	9,926,816	18,920,907	10/06/2014	10/06/2034	Interest Rate Swap		8,920,597		55819B-AN-0	Madison Park Funding XVI-MDPK 2015-18A BR	1	9,926,816	10,000,310
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,100,000	19,965,290	10/06/2014	10/06/2034	Interest Rate Swap				06760G-AB-7	Barings CLO Ltd 2018-I-SERIES 18-1A CLASS A2	1	20,100,000	19,965,290
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,933,314	24,187,440	10/06/2014	10/06/2034	Interest Rate Swap				77341D-AA-5	Rockford Tower CLO 2017--ROCKT 2017-3A A	1	23,933,314	24,187,440
57629*CG4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,100,000	3,065,764	10/06/2014	10/06/2034	Interest Rate Swap				04943A-AG-4	ATLAS SENIOR LOAN FUND L-SERIES 17-8A CLASS C	1	3,100,000	3,065,764
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	100,000,000	8,208,400	35,192,467	10/06/2014	10/06/2044	Interest Rate Swap		26,946,694		28108R-AA-0	EdLinc Student Loan Fund-ESLFT 2017-A A	1	8,208,400	8,245,773
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,039,344	12,039,344	10/06/2014	10/06/2044	Interest Rate Swap				87289B-AA-2	TCP DLF VIII 2018 CLO, LLC - Class A	1	12,039,344	12,039,344
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,000,000	9,000,000	10/06/2014	10/06/2044	Interest Rate Swap				89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	9,000,000	9,000,000
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,700,000	4,647,008	10/06/2014	10/06/2044	Interest Rate Swap				04942J-AE-1	Atlas Senior Loan Fund X-ATCLO 2018-10A B	1	4,700,000	4,647,008
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	4,981,035	10/06/2014	10/06/2044	Interest Rate Swap				29001L-AQ-4	Elmwood CLO II Ltd-ELMW2 2019-2A CR	1	5,000,000	4,981,035
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,776,440	10/06/2014	10/06/2044	Interest Rate Swap				67707C-AS-7	Oak Hill Credit Partners-OAKC 2014-10RA BR	1	20,000,000	19,776,440
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,000,330	10/06/2014	10/06/2044	Interest Rate Swap				55952Y-AR-8	Magnetite VIII Ltd-MAGNE 2014-8A BR2	1	15,000,000	15,000,330
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,400,000	4,400,119	10/06/2014	10/06/2044	Interest Rate Swap				88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	4,400,000	4,400,119
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,600,000	3,600,083	10/06/2014	10/06/2044	Interest Rate Swap				87249C-AE-1	TICOP CLO X LTD-SERIES 18-10A CLASS C	1	3,600,000	3,600,083
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,700,000	3,700,722	10/06/2014	10/06/2044	Interest Rate Swap				04009G-AE-7	ARES L CLO Ltd-SERIES 19-53A CLASS B	1	3,700,000	3,700,722
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,500,418	10/06/2014	10/06/2044	Interest Rate Swap				08182B-AN-8	Benefit Street Partners-BSP 2019-17A BR	1	5,500,000	5,500,418
57629*CH2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,500,000	10,610,976	10/06/2014	10/06/2044	Interest Rate Swap				64034H-AD-7	Navient Student Loan Tru-NSLT 2019-7A B	1	10,500,000	10,610,976
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	100,000,000	13,228,481	15,916,428	06/16/2021	06/16/2051	Interest Rate Swap		3,192,037		66776M-ZZ-9	ORANGE GROVE ENERGY, L.P DELAYED DRAW TE	2	13,228,481	12,724,391
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,101,841	1,100,382	06/16/2021	06/16/2051	Interest Rate Swap				247358-BB-9	EAIV Delta MSN 15153	1	1,101,841	1,100,382
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,109,595	1,107,529	06/16/2021	06/16/2051	Interest Rate Swap				247358-DD-3	EAIV Delta MSN 15161	1	1,109,595	1,107,529
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		735,267	734,415	06/16/2021	06/16/2051	Interest Rate Swap				247358-PP-3	Delta Air Lines Inc. - MSN 15147	1	735,267	734,415
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		735,316	732,433	06/16/2021	06/16/2051	Interest Rate Swap				247358-RR-7	EAIV 2017 Delta MSN 15146	1	735,316	732,433
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,109,595	1,107,529	06/16/2021	06/16/2051	Interest Rate Swap				247358-RW-6	EAIV Delta MSN 15162	1	1,109,595	1,107,529

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,811,058	4,841,894	06/16/2021	06/16/2051	Interest Rate Swap				784170-ZZ-8	SFR FTTH SAS Term Loan	2	4,811,058	4,841,894
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,015,929	3,863,268	06/16/2021	06/16/2051	Interest Rate Swap				429827-AS-7	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS B2	1	4,015,929	3,863,268
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,200,000	10,140,544	06/16/2021	06/16/2051	Interest Rate Swap				00889B-AB-7	Aimco CDO-AIMCO 2021-15A B	1	10,200,000	10,140,544
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		40,000,000	40,000,000	06/16/2021	06/16/2051	Interest Rate Swap				50079E-MQ-4	KREF Lending VII 2018-3 Term Loan	1	40,000,000	40,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		30,000,000	30,000,000	06/16/2021	06/16/2051	Interest Rate Swap				12503Z-MM-8	CCLF SPV LLC-Revolving Credit Facility	1	30,000,000	30,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	14,700,000	24,602,726	06/16/2021	06/16/2051	Interest Rate Swap		9,958,233		29002H-AN-9	Elmwood CLO III Ltd-ELMW3 2019-3A BR	1	14,700,000	14,644,493
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		28,357,955	28,480,250	06/16/2021	06/16/2051	Interest Rate Swap				05682V-AA-3	BAIN CAPITAL CREDIT CLO -SERIES 18-2A CLASS A1	1	28,357,955	28,480,250
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		150,800,625	150,800,625	06/16/2021	06/16/2051	Interest Rate Swap				50079E-MR-7	KREF Lending VII - Term Loan Series 2019-6	1	150,800,625	150,800,625
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		20,000,000	20,000,000	06/16/2021	06/16/2051	Interest Rate Swap				48939F-MM-0	Kennedy Lewis Investment Management LLC and Kennedy Lewis Investment Holdings II LLC - Delayed Draw Term Loan	1	20,000,000	20,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,650,000	5,630,327	06/16/2021	06/16/2051	Interest Rate Swap				78108Y-AQ-5	RR 1 LLC-RRAM 2017-1A A2B	1	5,650,000	5,630,327
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,500,000	10,475,682	06/16/2021	06/16/2051	Interest Rate Swap				14315L-AC-8	CGMS 2014-3RA A1B FLOATING COUPON 1.481380 MATURITY 20310727	1	10,500,000	10,475,682
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,500,000	10,501,565	06/16/2021	06/16/2051	Interest Rate Swap				12564D-AC-8	CIFC 2021-3A B FLOATING COUPON 1.848090 MATURITY 20360715	1	10,500,000	10,501,565
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,963,970	06/16/2021	06/16/2051	Interest Rate Swap				69701X-AC-8	PLMPS 2021-2A B FLOATING COUPON 1.755760 MATURITY 20340715	1	10,000,000	9,963,970
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	168,908,655	178,896,859	06/16/2021	06/16/2051	Interest Rate Swap		9,988,204		46143F-MQ-2	Senior Secured Notes - Term Loan Series 2021-3	1	168,908,655	168,908,655
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,490,000	10,489,958	06/16/2021	06/16/2051	Interest Rate Swap				40437L-AG-7	HPS Loan Management 13-2-HLM 13A-18 B	1	10,490,000	10,489,958
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,973,390	06/16/2021	06/16/2051	Interest Rate Swap				40436Q-AL-6	HPS Loan Management 9-20-HLM 9A-2016 A1BR	1	10,000,000	9,973,390
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,500,000	7,441,328	06/16/2021	06/16/2051	Interest Rate Swap				64132D-AL-2	Neuberger Berman Loan Ad-NEUB 2019-32A BR	1	7,500,000	7,441,328
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,800,000	4,785,811	06/16/2021	06/16/2051	Interest Rate Swap				64131J-AQ-9	Neuberger Berman Loan Ad-SERIES 17-25A CLASS CR	1	4,800,000	4,785,811
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		48,000,000	48,000,000	06/16/2021	06/16/2051	Interest Rate Swap				69324F-MQ-0	PCRED LENDING III LLC, PCRED LENDING III SPE I LLC and PCRED LENDING III OFFSHORE LTD - Term Loan Series 2021-5	1	48,000,000	48,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z				06/16/2021	06/16/2051	Interest Rate Swap				50079E-MQ-9	KREF Lending VII LLC	1		
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,922,591	4,100,336	06/16/2021	06/16/2051	Interest Rate Swap				55819P-AA-7	Madison Park Funding XXXVI Ltd	1	3,922,591	4,100,336
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	16,600,000	28,275,975	06/17/2021	06/17/2051	Interest Rate Swap		11,819,067		92915P-AK-1	Voya CLO 2014-1 Ltd-INGIN 2014-1A ABR2	1	16,600,000	16,456,908
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,989,670	9,993,206	06/17/2021	06/17/2051	Interest Rate Swap				05363U-AW-3	AVERY POINT IV CLO LTD-SERIES 14-1A CLASS CR	1	9,989,670	9,993,206
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	5,118,868	06/17/2021	06/17/2051	Interest Rate Swap				64032V-AB-5	Netnet Student Loan Trus-NSLT 2020-5A B	1	5,000,000	5,118,868
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,000,000	12,527,216	06/17/2021	06/17/2051	Interest Rate Swap				G7332F-AH-6	RRPF Engine Leasing Ltd Senior Secured	2	13,000,000	12,527,216
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,911,660	06/17/2021	06/17/2051	Interest Rate Swap				04941Y-AJ-8	Atlas Senior Loan Fund X-ATCLO 2018-11A B	1	10,000,000	9,911,660
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		26,815,000	26,785,048	06/17/2021	06/17/2051	Interest Rate Swap				55954Y-AJ-4	Magnetite XXVI Ltd-MAGNE 2020-26A ATR	1	26,815,000	26,785,048
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,900,000	11,876,747	06/17/2021	06/17/2051	Interest Rate Swap				40256G-AC-5	Gulf Stream Meridian-GSM 2021-6A A2	1	11,900,000	11,876,747
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		68,313,143	68,313,143	06/17/2021	06/17/2051	Interest Rate Swap				50079E-MP-1	Term Loan Series 2018-4	1	68,313,143	68,313,143

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		46,825,397	46,825,397	06/17/2021	06/17/2051	Interest Rate Swap				59576#-MM-5	Class A-1 Senior Secured Notes (Carlyle BDC Direct Lending)	1	46,825,397	46,825,397
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,500,000	7,500,593	06/17/2021	06/17/2051	Interest Rate Swap				94951D-AJ-2	Wellfleet CLO 2018-3 Ltd-SERIES 18-3A CLASS A2	1	7,500,000	7,500,593
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		39,000,000	39,000,000	06/17/2021	06/17/2051	Interest Rate Swap				46143#-MQ-7	Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2021-5	1	39,000,000	39,000,000
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	25,000,000	57,409,220	05/04/2017	11/04/2044	Interest Rate Swap		32,391,445		48253H-AN-5	KKR CLO 26 Ltd-KKR 26 AR	1	25,000,000	25,017,775
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	50,031,100	05/04/2017	11/04/2044	Interest Rate Swap				05683H-AN-5	BCC 2017-2A AP2 FLOATING COUPON MATURITY 20340725	1	50,000,000	50,031,100
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,980,000	11,980,084	05/04/2017	11/04/2044	Interest Rate Swap				149420-AE-1	CATSKILL PARK CLO LTD.-SERIES 17-1A CLASS A2	1	11,980,000	11,980,084
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,000,135	05/04/2017	11/04/2044	Interest Rate Swap				88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	5,000,000	5,000,135
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,069,941	22,965,365	05/04/2017	11/04/2044	Interest Rate Swap				24824T-AQ-3	Denali Capital CLO XII L-DEN12 2016-1A A1R	1	23,069,941	22,965,365
57629*CS8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,250,000	10,221,228	05/04/2017	11/04/2044	Interest Rate Swap				44330Q-AB-7	Highbridge Loan Manage-SERIES 12A-18 CLASS A1B	1	10,250,000	10,221,228
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	8,630,003	38,115,540	12/16/2014	12/16/2044	Interest Rate Swap		29,318,388		39808C-ZZ-1	GRIDIRON FDG LLC Term Facility	2	8,630,003	8,797,152
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,362,610	15,622,016	12/16/2014	12/16/2044	Interest Rate Swap				66704J-CB-2	NORTHSTAR EDUCATION FINA-SERIES 07-1 CLASS B	1	18,362,610	15,622,016
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,471,347	17,565,170	12/16/2014	12/16/2044	Interest Rate Swap				55955A-AA-4	Magnetite XX Ltd-MAGNE 2018-20A A Anchorage Capital CLO Lt-ANCHC	1	17,471,347	17,565,170
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	20,002,260	12/16/2014	12/16/2044	Interest Rate Swap				03331J-AA-0	2018-10A A1A	1	20,000,000	20,002,260
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,200,000	16,174,031	12/16/2014	12/16/2044	Interest Rate Swap				06760J-AE-5	Barings CLO Ltd 2018-II-SERIES 2018-2A CLAS A1B	1	16,200,000	16,174,031
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,700,181	12/16/2014	12/16/2044	Interest Rate Swap				06760B-AC-6	BABSON CLO LTD-SERIES 17-1A CLASS A2	1	6,700,000	6,700,181
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,939,860	12/16/2014	12/16/2044	Interest Rate Swap				69703P-AC-3	PLMPS 2018-1A A2 FLOATING COUPON 1.639750 MATURITY 20310418	1	10,000,000	9,939,860
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,575,000	2,560,716	12/16/2014	12/16/2044	Interest Rate Swap				08179H-AC-4	Benefit Street Partners -BSP 2017-12A B	1	2,575,000	2,560,716
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	9,992,850	12/16/2014	12/16/2044	Interest Rate Swap				13876X-AG-6	CANYC 2021-2A B1 FLOATING COUPON 1.905420 MATURITY 20340415	1	10,000,000	9,992,850
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,425,000	6,401,060	12/16/2014	12/16/2044	Interest Rate Swap				08180X-AQ-5	Benefit Street Partners -BSP 2015-8A A1BR	1	6,425,000	6,401,060
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,700,000	13,649,077	12/16/2014	12/16/2044	Interest Rate Swap				48255A-AC-2	KKR CLO 36 Ltd-KKR 36A B	1	13,700,000	13,649,077
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,100,000	6,054,781	12/16/2014	12/16/2044	Interest Rate Swap				05682E-AE-3	Bain Capital Credit CLO -BCC 2021-5A B	1	6,100,000	6,054,781
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	4,000,000	12/16/2014	12/16/2044	Interest Rate Swap				50079#-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	4,000,000	4,000,000
57629*CX7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	13,068,796	12/16/2014	12/16/2044	Interest Rate Swap				75884B-AC-2	Regatta X Funding Ltd-SERIES 2017-3A CLASS B	1	13,100,000	13,068,796
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	25,000,000	54,024,728	12/16/2014	12/16/2044	Interest Rate Swap		29,024,728		50079#-MO-4	KREF Lending VII 2018-3 Term Loan COLLEGE LOAN CORPORATION-SERIES	1	25,000,000	25,000,000
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,979,826	3,216,648	12/16/2014	12/16/2044	Interest Rate Swap				194267-AM-2	2007-1 CLASS B2	1	2,979,826	3,216,648
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,000,000	35,000,910	12/16/2014	12/16/2044	Interest Rate Swap				04941Y-AC-3	Atlas Senior Loan Fund X-SERIES 18-11A CLASS A1L	1	35,000,000	35,000,910
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		60,020,000	60,028,703	12/16/2014	12/16/2044	Interest Rate Swap				03768M-AJ-6	Apidos CLO XXXIII-APID 2020-33A AR	1	60,020,000	60,028,703
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,125,000	5,113,259	12/16/2014	12/16/2044	Interest Rate Swap				05683H-AS-4	Bain Capital Credit CLO -BCC 2017-2A CR2	1	5,125,000	5,113,259
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,437,243	12/16/2014	12/16/2044	Interest Rate Swap				48252W-AC-7	KKR CLO LTD 22-SERIES 22A CLASS B	1	9,500,000	9,437,243
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,528,924	1,529,494	12/16/2014	12/16/2044	Interest Rate Swap				05618D-AN-4	BABSON CLO LTD-BABSON 2014-IA BR	1	1,528,924	1,529,494
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,045,000	2,028,323	12/16/2014	12/16/2044	Interest Rate Swap				056162-AQ-3	Babson CLO Ltd 2015-I-BABSON 2015-IA BR	1	2,045,000	2,028,323

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,900,000	3,885,137	12/16/2014	12/16/2044	Interest Rate Swap			69703P-AE-9	Palmer Square CLO 2018-1-PLMRS 2018-1A B	1	3,900,000	3,885,137
57629*CT6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,000,000	6,000,000	12/16/2014	12/16/2044	Interest Rate Swap			500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	6,000,000	6,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	36,000,000	50,237,086	06/17/2021	06/17/2051	Interest Rate Swap		11,789,086	39808C-AA-3	Gridiron Fdg LLC Sr Secd Nt	2	36,000,000	38,448,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		25,900,000	25,867,029	06/17/2021	06/17/2051	Interest Rate Swap			14307P-AE-5	Carlyle Global Market St-SERIES C17A CLASS A1BR	1	25,900,000	25,867,029
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		39,000,000	39,000,000	06/17/2021	06/17/2051	Interest Rate Swap			12625Z-MM-1	CRE MMI SUB, LLC - Term Loan Series 2021-1	1	39,000,000	39,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	14,939,040	06/17/2021	06/17/2051	Interest Rate Swap			05875M-AQ-5	Ballyrock CLO 2019-2 Ltd-SERIES 19-2A CLASS A2R	1	15,000,000	14,939,040
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		59,558,148	59,558,148	06/17/2021	06/17/2051	Interest Rate Swap			500798-MQ-9	KREF Lending VII 2018-5 Term Loan	1	59,558,148	59,558,148
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		23,831,431	23,993,328	06/17/2021	06/17/2051	Interest Rate Swap			92917A-AA-4	VOYA 2018-1A A1	1	23,831,431	23,993,328
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	4,989,679	06/17/2021	06/17/2051	Interest Rate Swap			64034B-AB-7	Nelnet Student Loan Trus-NSLT 2018-5A B	1	5,000,000	4,989,679
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,500,000	22,502,453	06/17/2021	06/17/2051	Interest Rate Swap			94949J-AA-3	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A1	1	22,500,000	22,502,453
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,125,000	6,039,777	06/17/2021	06/17/2051	Interest Rate Swap			94950C-AE-6	Wellfleet CLO Ltd-WELF 2021-1A B	1	6,125,000	6,039,777
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,790,000	8,718,529	06/17/2021	06/17/2051	Interest Rate Swap			55951P-BC-0	Magnetite VII Ltd-MAGNE 2012-7A A2R2	1	8,790,000	8,718,529
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,100,000	11,045,488	06/17/2021	06/17/2051	Interest Rate Swap			12481Q-AE-5	Obam 2018-5 Ltd-SERIES 18-5A CLASS B1	1	11,100,000	11,045,488
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,700,000	2,689,511	06/17/2021	06/17/2051	Interest Rate Swap			14316W-AE-9	Carlyle Global Market St-CGMS 2021-7A B	1	2,700,000	2,689,511
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	250,000,000	246,683,400	257,365,435	06/18/2021	06/18/2051	Interest Rate Swap		10,682,035	57542Z-A7-2	MM Investment Holding Revolver Floating Line	2	246,683,400	246,683,400
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		3,600,000	3,582,958	06/18/2021	06/18/2051	Interest Rate Swap			61773K-AE-2	Morgan Stanley Eaton Van-MSEV 2021-1A C	1	3,600,000	3,582,958
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	350,000,000	250,000,000	264,786,956	06/18/2021	06/18/2051	Interest Rate Swap		14,786,956	67098#-MM-7	OHA Credit Solutions Master Fund I SPV, L.P. - Fund I Revolver	2	250,000,000	250,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	4,993,075	06/18/2021	06/18/2051	Interest Rate Swap			94950J-AC-5	Wellfleet CLO Ltd-SERIES 18-1A CLASS B	1	5,000,000	4,993,075
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,150,000	9,987,823	06/18/2021	06/18/2051	Interest Rate Swap			48662N-AC-1	KAYNE CLO-KAYNE 2021-11A B	1	10,150,000	9,987,823
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,400,000	10,400,832	06/18/2021	06/18/2051	Interest Rate Swap			67115W-AE-0	OHA Credit Funding 1 LTD-SERIES 18-1A CLASS A2	1	10,400,000	10,400,832
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		21,857,495	22,000,396	06/18/2021	06/18/2051	Interest Rate Swap			26245R-AA-8	Dryden 58 Clo Ltd-DRSLF 2018-58A A1	1	21,857,495	22,000,396
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		65,000,000	65,052,585	06/18/2021	06/18/2051	Interest Rate Swap			48661W-AA-6	KAYNE CLO-SERIES 19-3A CLASS A	1	65,000,000	65,052,585
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,982,290	06/18/2021	06/18/2051	Interest Rate Swap			55817A-AU-8	Madison Park Funding XXX-MDPK 2018-32A CR	1	10,000,000	9,982,290
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,750,000	2,710,551	06/18/2021	06/18/2051	Interest Rate Swap			04015U-AK-4	Ares XXXVIII CLO Ltd-SERIES 2015-38A CLASS CR	1	2,750,000	2,710,551
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	400,000,000	171,978,857	188,974,174	06/18/2021	06/18/2051	Interest Rate Swap		16,995,317	46143#-MM-4	Senior Secured Notes - Term Loan Series 2020-2	1	171,978,857	171,978,857
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		109,993,090	109,993,090	06/18/2021	06/18/2051	Interest Rate Swap			901399-MR-3	Twinbrook Capital Funding VIII DSPV, LLC - Term Loan	1	109,993,090	109,993,090
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	15,000,855	06/18/2021	06/18/2051	Interest Rate Swap			77341E-AC-9	Rockford Tower CLO 2020-ROCKT 2020-1A B	1	15,000,000	15,000,855
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,500,000	13,501,566	06/18/2021	06/18/2051	Interest Rate Swap			06760B-AE-2	BABSON CLO LTD-SERIES 17-1A CLASS B1	1	13,500,000	13,501,566
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,600,000	9,619,181	06/18/2021	06/18/2051	Interest Rate Swap			63941R-AC-4	NAVSL 2019-2A B	1	9,600,000	9,619,181
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		12,700,000	12,674,181	06/18/2021	06/18/2051	Interest Rate Swap			40436#-AE-7	HIGHBRIDGE LOAN MANAGEME-SERIES 2014 CLAS A2R	1	12,700,000	12,674,181
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,900,000	13,802,088	06/18/2021	06/18/2051	Interest Rate Swap			09628J-AN-1	Bluemountain CLO 2015-3 -BLUEM 2015-3A A2R	1	13,900,000	13,802,088

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,902,559	9,966,029	06/18/2021	06/18/2051	Interest Rate Swap				784170-ZZ-8	SFR FTTH SAS Term Loan	2	9,902,559	9,966,029
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,400,000	7,399,985	06/18/2021	06/18/2051	Interest Rate Swap				58821T-AC-1	Madison Park Funding Ltd-SERIES 18-30A CLASS B	1	7,400,000	7,399,985
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,085,000	1,085,020	06/18/2021	06/18/2051	Interest Rate Swap				89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1LR	1	1,085,000	1,085,020
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		12,649,264	12,744,084	06/18/2021	06/18/2051	Interest Rate Swap				67706X-AG-8	QHA Credit Partners XIV -OAKC 2017-14A B FLOATING COUP	1	12,649,264	12,744,084
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	15,000,000	06/18/2021	06/18/2051	Interest Rate Swap				89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	15,000,000	15,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,999,680	06/18/2021	06/18/2051	Interest Rate Swap				86271P-AE-5	Strata CLO II Ltd-STRTA 2021-1A B PRM 2020-12A A2R2 FLOATING COUPON	1	10,000,000	9,999,680
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	200,000,000	9,470,000	18,072,480	06/18/2021	06/18/2051	Interest Rate Swap		8,593,597		74989H-AE-2	1.883750 MATURITY 20360115 SYMP 2019-21A BR FLOATING COUPON	1	9,470,000	9,478,883
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,350,000	9,349,963	06/18/2021	06/18/2051	Interest Rate Swap				87166R-DG-9	MATURITY 20320715 NIAPK 2019-1A BR FLOATING COUPON	1	9,350,000	9,349,963
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,199,963	06/18/2021	06/18/2051	Interest Rate Swap				65357L-AL-9	MATURITY 20320717 C1FC 2017-4A BR FLOATING COUPON	1	9,200,000	9,199,963
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,100,000	9,100,191	06/18/2021	06/18/2051	Interest Rate Swap				12551J-AQ-9	2.08930 MATURITY 20301024 HAYFN 2020-12A B1 FLOATING COUPON	1	9,100,000	9,100,191
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,100,000	9,094,021	06/18/2021	06/18/2051	Interest Rate Swap				42087D-AC-3	2.148550 MATURITY 20340120 GLM 2020-7A BR FLOATING COUPON	1	9,100,000	9,094,021
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,000,000	8,993,601	06/18/2021	06/18/2051	Interest Rate Swap				38138L-AN-8	1.888250 MATURITY 20340420 FIDUS RE LTD FLOATING COUPON	1	9,000,000	8,993,601
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		65,300,000	65,643,543	06/18/2021	06/18/2051	Interest Rate Swap				316502-AA-1	2.918024 MATURITY 20300331 TOP DLF VIII 2018 CLO, LLC - Class	1	65,300,000	65,643,543
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,209,836	6,209,836	06/18/2021	06/18/2051	Interest Rate Swap				87289B-AA-2	A NORTHSTAR EDUCATION FINA-SERIES 2004-1 CLASS B1	1	6,209,836	6,209,836
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,796,284	15,224,075	06/18/2021	06/18/2051	Interest Rate Swap				66704J-AY-4	Regatta Funding Ltd.-REG11 2018-1A	1	16,796,284	15,224,075
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		27,000,000	27,000,081	06/18/2021	06/18/2051	Interest Rate Swap				75887X-AA-5	A ICG US CLO 2018-1 LTD-SERIES 2018-1A CLASS A1	1	27,000,000	27,000,081
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,900,000	11,859,992	06/18/2021	06/18/2051	Interest Rate Swap				449258-AA-0	Navient Student Loan Tru-NAVSL 2021-1A B	1	11,900,000	11,859,992
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,200,000	3,220,700	06/18/2021	06/18/2051	Interest Rate Swap				63942N-AC-2	C1FC Funding 2018-IV Ltd-SERIES 18-4A CLASS A2	1	3,200,000	3,220,700
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,200,000	11,200,739	06/18/2021	06/18/2051	Interest Rate Swap				17181T-AC-5	CHENANGO PARK CLO LTD-SERIES 18-1A CLASS A1B	1	11,200,000	11,200,739
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,200,000	16,200,518	06/18/2021	06/18/2051	Interest Rate Swap				16409T-AC-3	OAKC 2021-9A B FLOATING COUPON MATURITY 20350719	1	16,200,000	16,200,518
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	13,600,000	26,752,465	02/05/2015	02/05/2045	Interest Rate Swap		13,150,520		67690A-AG-6	HPS Loan Management 9-20-HLM 9A-2016 A2R	1	13,600,000	13,601,945
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,750,000	12,750,089	02/05/2015	02/05/2045	Interest Rate Swap				404360-AN-2	TICP CLO Ltd-TICP 2018-11A A Babson CLO Ltd 2013-I-SERIES 2013-1A CLASS AR	1	12,750,000	12,750,089
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,000,000	25,000,500	02/05/2015	02/05/2045	Interest Rate Swap				872490-AA-8	TICP CLO VI 2016-5 Ltd-TICP 2016-5A BR	1	25,000,000	25,000,500
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,133,902	16,132,888	02/05/2015	02/05/2045	Interest Rate Swap				06760E-AA-4	AGL CLO 6 LTD-AGL 2020-6A AR Goldentree Loan Managem-GLM 2019-5A BR	1	16,133,902	16,132,888
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,200,000	15,201,459	02/05/2015	02/05/2045	Interest Rate Swap				87248K-AL-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	15,200,000	15,201,459
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	30,013,860	02/05/2015	02/05/2045	Interest Rate Swap				00119V-AN-9	SMB PRIVATE ED LN TR 2016-A NT	1	30,000,000	30,013,860
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,400,000	11,393,251	02/05/2015	02/05/2045	Interest Rate Swap				38138D-AQ-9	NAVIENT STUDENT LOAN TRU-SERIES 16-2 CLASS A3	1	11,400,000	11,393,251
57629*DB4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,000,000	4,000,000	02/05/2015	02/05/2045	Interest Rate Swap				50079E-MV-8	REVOLVING PROM NT - ISSUED SEPT 2019	1	4,000,000	4,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	300,000,000	9,560,613	16,580,050	06/21/2021	06/21/2051	Interest Rate Swap		6,924,839		78449F-AC-5	NAVIENT STUDENT LOAN TRU-SERIES 16-2 CLASS A3	1	9,560,613	9,655,211
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,420,000	23,164,313	06/21/2021	06/21/2051	Interest Rate Swap				63940F-AC-1	NAVIENT STUDENT LOAN TRU-SERIES 16-2 CLASS A3	1	22,420,000	23,164,313
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		203,080,050	203,080,050	06/21/2021	06/21/2051	Interest Rate Swap				14308E-MM-7	REVOLVING PROM NT - ISSUED SEPT 2019	1	203,080,050	203,080,050

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		42,343,910	42,356,613	06/21/2021	06/21/2051	Interest Rate Swap				72403Z-NT-7	PIONEERS GATE LLC 2021-2 OPTN	1	42,343,910	42,356,613
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,982,430	06/21/2021	06/21/2051	Interest Rate Swap				67109Y-AN-4	Oak Hill Credit Partners-SERIES 15-12A CLASS A2R	1	10,000,000	9,982,430
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,200,000	4,165,098	06/21/2021	06/21/2051	Interest Rate Swap				08180X-AU-6	Benefit Street Partners -BSP 2015-8A BR	1	4,200,000	4,165,098
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	10,000,570	06/21/2021	06/21/2051	Interest Rate Swap				04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	10,000,570
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,050,000	9,036,859	06/21/2021	06/21/2051	Interest Rate Swap				06760E-AE-6	Babson CLO Ltd 2013-1-SERIES 2013-1A CLASS CR	1	9,050,000	9,036,859
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	250,000,000	39,750,000	41,263,556	06/22/2021	06/22/2051	Interest Rate Swap		1,513,556		70163F-AA-0	Parliament Funding I LLC-Variable Funding Notes	2	39,750,000	39,750,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,600,000	5,601,922	06/22/2021	06/22/2051	Interest Rate Swap				64034N-AB-1	NSLT 2019-2A B	1	5,600,000	5,601,922
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		30,000,000	30,000,000	06/22/2021	06/22/2051	Interest Rate Swap				50079E-MN-6	KREF Lending VII 2018-2 Term Loan	1	30,000,000	30,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,831,192	11,893,536	06/22/2021	06/22/2051	Interest Rate Swap				78448Q-AD-0	SMB PRIVATE EDUCATION LO-SMB 2015-B A3	1	11,831,192	11,893,536
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,000,000	13,001,521	06/22/2021	06/22/2051	Interest Rate Swap				75887X-AC-1	Regatta Funding Ltd.-REG11 2018-1A B	1	13,000,000	13,001,521
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,100,000	7,090,145	06/22/2021	06/22/2051	Interest Rate Swap				25255D-AE-0	DOLO 2021-1A A2 FLOATING COUPON MATURITY 20360715	1	7,100,000	7,090,145
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,050,000	7,051,029	06/22/2021	06/22/2051	Interest Rate Swap				04016P-AN-8	ARES 2017-43A CR FLOATING COUPON MATURITY 20340715	1	7,050,000	7,051,029
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		124,000,000	124,000,000	06/22/2021	06/22/2051	Interest Rate Swap				12499F-MM-8	COOF Onshore Co-Borrower Revolving Loan	1	124,000,000	124,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,999,887	4,974,310	06/22/2021	06/22/2051	Interest Rate Swap				87246M-AW-2	TICP CLO VI 2016-2 Ltd-TICP 2016-6A CR2	1	4,999,887	4,974,310
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,350,000	7,226,248	06/22/2021	06/22/2051	Interest Rate Swap				12551R-AC-2	CIFC Funding 2018-1 Ltd-SERIES 18-1A CLASS B	1	7,350,000	7,226,248
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	5,000,135	06/22/2021	06/22/2051	Interest Rate Swap				88434H-AE-3	THL Credit Wind River 20-SERIES 18-2A CLASS A2	1	5,000,000	5,000,135
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	200,000,000	8,460,178	9,718,765	06/22/2021	06/22/2051	Interest Rate Swap		1,906,507		MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN NAVIENT STUDENT LOAN TRU-SERIES	2	8,460,178	7,812,258
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		25,000,000	25,291,010	06/22/2021	06/22/2051	Interest Rate Swap				63940L-AC-8	2016-6A CLASS A3	1	25,000,000	25,291,010
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,000,000	7,994,384	06/22/2021	06/22/2051	Interest Rate Swap				87250A-AL-5	TICP 2019-13A BR FLOATING COUPON 1.819390 MATURITY 20340415	1	8,000,000	7,994,384
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,000,000	7,935,488	06/22/2021	06/22/2051	Interest Rate Swap				09628F-AE-9	BLUEM 2017-3A B FLOATING COUPON 1.558750 MATURITY 20300115	1	8,000,000	7,935,488
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		67,200,000	66,791,558	06/22/2021	06/22/2051	Interest Rate Swap				85810Z-AX-4	Steele Creek CLO 2016-1 -SERIES	1	67,200,000	66,791,558
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		20,000,000	20,000,080	06/22/2021	06/22/2051	Interest Rate Swap				85816W-AC-8	Steele Creek CLO 2014-1 -SERIES 14-18A CLASS A	1	20,000,000	20,000,080
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	10,000,570	06/22/2021	06/22/2051	Interest Rate Swap				04965L-AE-8	ATRIUM XIV LLC-ATRM 14A A2A	1	10,000,000	10,000,570
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,890,340	06/22/2021	06/22/2051	Interest Rate Swap				87232A-AN-4	TCI-Flatiron Clo 2018-1 -TFLAT 2018-1A BR	1	10,000,000	9,890,340
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,000,000	9,896,060	06/22/2021	06/22/2051	Interest Rate Swap				77342M-AQ-9	Rockford Tower CLO 2019--SERIES 2019-1A CLASS B1R	1	10,000,000	9,896,060
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,624,778	1,698,090	06/22/2021	06/22/2051	Interest Rate Swap				429827-AK-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A10	1	1,624,778	1,698,090
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,229,973	1,279,720	06/22/2021	06/22/2051	Interest Rate Swap				429827-AP-3	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A14	1	1,229,973	1,279,720
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,156,496	1,176,358	06/22/2021	06/22/2051	Interest Rate Swap				429827-AB-4	HIGHER EDUCATION FUNDING-SERIES 2004-1 CLASS A2	1	1,156,496	1,176,358
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,552,371	1,563,284	06/22/2021	06/22/2051	Interest Rate Swap				83715A-AJ-8	SOUTH CAROLINA STUDENT L-SR UNSECURED	1	1,552,371	1,563,284
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,769,790	1,836,933	06/22/2021	06/22/2051	Interest Rate Swap				64033Q-AC-3	NELNET STUDENT LOAN TRUS-SERIES 2015-2A CLASS B	1	1,769,790	1,836,933
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		619,822	624,405	06/22/2021	06/22/2051	Interest Rate Swap				709163-GJ-2	PENNSYLVANIA ST HGR EDU -SERIES 2006 CL B	1	619,822	624,405

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		824,609	810,147	06/22/2021	06/22/2051	Interest Rate Swap			17284L-AB-0	CIT EDUCATION LOAN TRUST-SERIES 2007-1 CLASS B	1	824,609	810,147
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,275,000	8,215,155	06/22/2021	06/22/2051	Interest Rate Swap			056162-AS-9	Babson CLO Ltd 2015-1-BABSN 2015-1A CR	1	8,275,000	8,215,155
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,344,287	24,221,500	06/22/2021	06/22/2051	Interest Rate Swap			230000-AB-7	CULLEN/FROST CAP TR II-SUBORDINATED NOTE	2	22,344,287	24,221,500
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	300,000,000	13,651,047	19,793,240	06/28/2021	06/28/2051	Interest Rate Swap		7,187,652	MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN	2	13,651,047	12,605,588
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,837,170	1,858,383	06/28/2021	06/28/2051	Interest Rate Swap			78448R-AD-8	SMB PRIVATE ED LN TR 2015-C LN BOK NT CL A-3	1	1,837,170	1,858,383
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,580,629	5,629,968	06/28/2021	06/28/2051	Interest Rate Swap			78448P-AD-2	SMB PRIVATE ED LOAN TR 2015-A LN BACKED NT A-3	1	5,580,629	5,629,968
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		31,052,260	31,052,260	06/28/2021	06/28/2051	Interest Rate Swap			50079E-MM-6	KREF Lending VII 2018-2 Term Loan	1	31,052,260	31,052,260
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,600,000	11,556,129	06/28/2021	06/28/2051	Interest Rate Swap			08179C-AQ-4	Benefit Street Partners -BSP 2017-11A A2R FLOATING	1	11,600,000	11,556,129
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,145,061	2,134,447	06/28/2021	06/28/2051	Interest Rate Swap			00432C-CW-9	ACCESS GROUP INC-SERIES 2005-B CLASS A3	1	2,145,061	2,134,447
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,870,425	9,183,645	06/28/2021	06/28/2051	Interest Rate Swap			28148W-AC-7	EDUCATIONAL FUNDING OF T-SERIES 2011-1 CLASS B	1	8,870,425	9,183,645
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		185,000,000	185,000,000	06/28/2021	06/28/2051	Interest Rate Swap			12503Z-MM-8	COLF SPV LLC-Revolving Credit Facility	1	185,000,000	185,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,295,136	9,295,136	06/28/2021	06/28/2051	Interest Rate Swap			03113F-MM-3	AMF Levered II, LLC - Revolver	1	9,295,136	9,295,136
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,114,278	4,860,575	06/28/2021	06/28/2051	Interest Rate Swap			78442G-OA-7	SLM STUDENT LOAN TRUST-SERIES 2005-6 CLASS B	1	5,114,278	4,860,575
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,714,647	1,823,948	06/28/2021	06/28/2051	Interest Rate Swap			38021F-AB-7	GOAL CAPITAL FUNDING TRU-SERIES 2015-1 CLASS B	2	1,714,647	1,823,948
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,721,069	1,744,746	06/28/2021	06/28/2051	Interest Rate Swap			28138J-AB-0	EDUCATIONAL SERVICES OF -SERIES 15-2 CLASS B	1	1,721,069	1,744,746
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,716,216	1,648,557	06/28/2021	06/28/2051	Interest Rate Swap			78442G-GM-2	SLM STUDENT LOAN TRUST 2003-4 LN BKD CTF CL B	2	1,716,216	1,648,557
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,390,591	1,453,221	06/28/2021	06/28/2051	Interest Rate Swap			28090A-AB-5	EDUCATIONAL SERVICES OF -2014-4 SERIES B	1	1,390,591	1,453,221
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,200,000	7,200,281	06/28/2021	06/28/2051	Interest Rate Swap			03767M-AE-8	Apidos CLO-SERIES 18-29A CLASS A1B	1	7,200,000	7,200,281
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,800,000	8,758,165	06/28/2021	06/28/2051	Interest Rate Swap			39729R-AC-2	Greenwood Park CLO Ltd-SERIES 18-1A CLASS B	1	8,800,000	8,758,165
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,500,000	10,499,958	06/28/2021	06/28/2051	Interest Rate Swap			13876J-AE-2	Canyon Capital CLO Ltd-CANYC 2012-1RA B	1	10,500,000	10,499,958
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,000,000	5,000,710	06/28/2021	06/28/2051	Interest Rate Swap			03768R-AG-1	Apidos CLO Series 19-32A-APID 2019-32A B1	1	5,000,000	5,000,710
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	200,000,000	7,646,872	12,302,395	06/28/2021	06/28/2051	Interest Rate Swap		4,815,767	281397-AP-4	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A1	1	7,646,872	7,486,628
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,913,641	11,001,240	06/28/2021	06/28/2051	Interest Rate Swap			MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN	2	11,913,641	11,001,240
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,324,344	4,257,102	06/28/2021	06/28/2051	Interest Rate Swap			281397-AB-5	EDUCATION LOAN ASSET-BAC-SERIES 2003-1 CLASS A2	1	4,324,344	4,257,102
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,831,738	3,893,570	06/28/2021	06/28/2051	Interest Rate Swap			64031Q-CK-5	NELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R1	2	3,831,738	3,893,570
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,408,609	5,502,858	06/28/2021	06/28/2051	Interest Rate Swap			281080-AB-0	EDLINC STUDENT LOAN FUND-SERIES 2012-1 CLASS B	1	5,408,609	5,502,858
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,950,000	2,887,000	06/28/2021	06/28/2051	Interest Rate Swap			281397-AQ-2	EDUCATION LOAN ASSET-BAC-SERIES 2003-2 CLASS 2A2	1	2,950,000	2,887,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,483,837	1,485,998	06/28/2021	06/28/2051	Interest Rate Swap			38021E-AA-2	GOAL CAPITAL FUNDING TR 2010-1 STUDENT LN BKO NT	1	1,483,837	1,485,998
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,472,349	2,957,141	06/28/2021	06/28/2051	Interest Rate Swap			64031Q-OM-1	NELNET STUDENT LOAN TRUS-SERIES 2005-4 CLASS A4R2	2	2,472,349	2,957,141
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,776,793	9,930,145	06/28/2021	06/28/2051	Interest Rate Swap			83149E-AG-2	SLM STUDENT LN TR 2006-5-NOTE CL B	1	9,776,793	9,930,145
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,900,000	13,899,958	06/28/2021	06/28/2051	Interest Rate Swap			26251L-AE-4	Dryden 64 CLO Ltd-DRSLF 2018-64A B	1	13,900,000	13,899,958

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		28,000,000	27,919,760	06/28/2021	06/28/2051	Interest Rate Swap			64033E-AB-2	NSLT 2013-2A B FLOATING COUPON 1.591500 MATURITY 20520826	1	28,000,000	27,919,760
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		21,965,395	21,707,700	06/28/2021	06/28/2051	Interest Rate Swap			66704J-AF-5	NORTHSTAR LN-TXB-A-3 ADJUSTABLE COUPON .52500 MATURITY 20420401	1	21,965,395	21,707,700
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,358,543	13,914,166	06/28/2021	06/28/2051	Interest Rate Swap			78442G-KP-0	SLMA 2003-14 B FLOATING COUPON 0.725750 MATURITY 20651025	1	14,358,543	13,914,166
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,600,000	13,370,102	06/28/2021	06/28/2051	Interest Rate Swap			64034X-AB-9	NSLT 2021-1A B FLOATING COUPON MATURITY 20690725	1	13,600,000	13,370,102
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		10,100,000	10,484,998	06/28/2021	06/28/2051	Interest Rate Swap			64034G-AB-6	NSLT 2020-1A B FLOATING COUPON 1.841500 MATURITY 20680326	1	10,100,000	10,484,998
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,532,444	6,283,659	06/28/2021	06/28/2051	Interest Rate Swap			64031C-AB-8	NELNET STUDENT LOAN TRUS-SERIES 2012-2A CLASS B	1	6,532,444	6,283,659
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,285,833	4,219,304	06/28/2021	06/28/2051	Interest Rate Swap			78442G-PS-9	SLM STUDENT LOAN TRUST-SERIES 2005-5 CLASS B	1	4,285,833	4,219,304
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,275,000	16,276,237	06/28/2021	06/28/2051	Interest Rate Swap			04623T-AA-3	ASSURANT CLO I LTD-ASRNT 2018-1A A	1	16,275,000	16,276,237
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		3,000,000	3,000,054	06/28/2021	06/28/2051	Interest Rate Swap			89852T-AN-8	Tryon Park CLO Ltd-TPCLO 2013-1A A1JR	1	3,000,000	3,000,054
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,000,000	13,000,234	06/28/2021	06/28/2051	Interest Rate Swap			21623P-AC-1	COOK PARK CLO LTD-COOK 2018-1A A2	1	13,000,000	13,000,234
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		2,000,000	2,012,937	06/28/2021	06/28/2051	Interest Rate Swap			63942N-AC-2	Navient Student Loan Tru-NAVSL 2021-1A B	1	2,000,000	2,012,937
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,400,000	8,400,008	06/28/2021	06/28/2051	Interest Rate Swap			48252Y-AE-9	KKR CLO 23 Ltd-KKR 23 B	1	8,400,000	8,400,008
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	10,920,838	31,816,536	12/06/2016	12/06/2046	Interest Rate Swap		21,732,066	MXP001-TT-1	AEROVIAS DE MEXICO SA USD TERM LN SOUTH CAROLINA STUDENT L-SERIES 2014-1 CLASS B	2	10,920,838	10,084,470
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,701,622	12,820,557	12/06/2016	12/06/2046	Interest Rate Swap			83715R-AG-7	SLC STUDENT LOAN TRUST-SERIES 2005-1 CLASS B	1	12,701,622	12,820,557
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,819,008	4,920,824	12/06/2016	12/06/2046	Interest Rate Swap			784420-AE-1	SLM STUDENT LOAN TRUST-SERIES 2005-8 CLASS B	1	4,819,008	4,920,824
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,082,577	3,023,621	12/06/2016	12/06/2046	Interest Rate Swap			78442G-OT-6	Cedar Funding IX CLO Ltd-SERIES 18-9A CLASS A2	1	3,082,577	3,023,621
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,300,000	19,198,405	12/06/2016	12/06/2046	Interest Rate Swap			15033E-AC-2	NAVIENT STUDENT LOAN TRU-SERIES 2014-1 CLASS B	1	19,300,000	19,198,405
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,645,000	2,679,625	12/06/2016	12/06/2046	Interest Rate Swap			63938E-AE-4	NELNET STUDENT LOAN TRUS-SERIES 2006-3 CLASS B	1	2,645,000	2,679,625
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,215,145	2,093,974	12/06/2016	12/06/2046	Interest Rate Swap			64031A-AJ-5	NAVIENT STUDENT LOAN TRU-SERIES 2015-3 CLASS B	1	2,215,145	2,093,974
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,371,748	6,819,196	12/06/2016	12/06/2046	Interest Rate Swap			63939L-AC-1	NELNET STUDENT LOAN TRUS-SERIES 2014-1A CLASS B	1	6,371,748	6,819,196
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,358,724	3,414,080	12/06/2016	12/06/2046	Interest Rate Swap			64033J-AB-1	COLLEGE LOAN CORPORATION-SERIES 2005-2 CLASS B	1	3,358,724	3,414,080
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,468,968	2,261,481	12/06/2016	12/06/2046	Interest Rate Swap			194266-AE-2	NELNET STUDENT LOAN TRUS-SERIES 2014-5A CLASS B	1	2,468,968	2,261,481
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,216,516	3,306,879	12/06/2016	12/06/2046	Interest Rate Swap			64033N-AB-2	SLM STUDENT LOAN TRUST-SERIES 2004-3 CLASS B	1	3,216,516	3,306,879
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,866,702	1,842,895	12/06/2016	12/06/2046	Interest Rate Swap			78442G-LJ-3	NELNET STUDENT LOAN TRUS-SERIES 2012-1A CLASS B	1	1,866,702	1,842,895
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,250,000	3,147,590	12/06/2016	12/06/2046	Interest Rate Swap			64032A-AB-1	NELNET STUDENT LOAN TRUS-SERIES 2014-2A CLASS B	1	3,250,000	3,147,590
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,004,762	3,036,787	12/06/2016	12/06/2046	Interest Rate Swap			64033L-AD-2	NELNET STUDENT LOAN TRUS-SERIES 2014-3A CLASS B	1	3,004,762	3,036,787
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,240,000	3,213,117	12/06/2016	12/06/2046	Interest Rate Swap			64033K-AB-8	Apidos CLO-SERIES 18-29A CLASS A2	1	3,240,000	3,213,117
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,750,000	14,750,148	12/06/2016	12/06/2046	Interest Rate Swap			03767M-AG-3	Magnetite VIII Ltd-MAGNE 2014-8A	1	14,750,000	14,750,148
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,483,400	12/06/2016	12/06/2046	Interest Rate Swap			55952Y-AT-4	Ares XXXVIII CLO Ltd-SERIES 15-38A CLASS BR	1	4,500,000	4,483,400
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,617,382	12/06/2016	12/06/2046	Interest Rate Swap			04015U-AJ-7	KKR CLO 12 Ltd-KKR 12 BR2	1	6,700,000	6,617,382
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	2,997,387	12/06/2016	12/06/2046	Interest Rate Swap			48250R-BN-5		1	3,000,000	2,997,387

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*DE8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,250,000	14,218,337	12/06/2016	12/06/2046	Interest Rate Swap			67112K-AB-5	OCP CLO Ltd-SERIES 18-15A CLASS A2	1	14,250,000	14,218,337
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	7,633,571	46,224,911	09/15/2017	09/15/2047	Interest Rate Swap	38,199,266		03073E-AM-7	AmerisourceBergen Corp--SENIOR UNSECURED	2	7,633,571	8,025,645
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,648,310	18,606,757	09/15/2017	09/15/2047	Interest Rate Swap			28364N-AS-7	ENTERGY MISSISSIPPI INC--SECURED NOTE	1	17,648,310	18,606,757
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,815,000	9,741,868	09/15/2017	09/15/2047	Interest Rate Swap			05684L-AG-0	Bain Capital Credit CLO-BCC 2021-1A C	1	9,815,000	9,741,868
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,154,900	27,828,619	09/15/2017	09/15/2047	Interest Rate Swap			75972Y-AA-9	RENAISSANCE FINANCE--SR UNSECURED	1	26,154,900	27,828,619
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,482,625	09/15/2017	09/15/2047	Interest Rate Swap			33882G-AJ-7	Flatiron Clo 17 Ltd-FLAT 2017-1A CR	1	9,500,000	9,482,625
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,200,000	3,113,517	09/15/2017	09/15/2047	Interest Rate Swap			22615E-AE-0	Crestline Denali CLO Ltd-SERIES 2018-1A CLASS C	1	3,200,000	3,113,517
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,006,064	09/15/2017	09/15/2047	Interest Rate Swap			67104L-AG-2	QHA Loan Funding 2013-2 -QHOLF 2013-2A CR	1	8,000,000	8,006,064
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,000,000	14,000,952	09/15/2017	09/15/2047	Interest Rate Swap			38862E-AB-0	GRIFFEN PARK CLO LTD-SERIES 17-1A CLASS B	1	14,000,000	14,000,952
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		52,951,816	52,951,816	09/15/2017	09/15/2047	Interest Rate Swap			500798-MO-4	KREF Lending VII 2018-3 Term Loan - FS CREIT FINANCE MM-1 LLC - Secured	1	52,951,816	52,951,816
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	30,000,000	09/15/2017	09/15/2047	Interest Rate Swap			30300Z-MM-5	Term Loan Facility	1	30,000,000	30,000,000
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,400,000	5,396,560	09/15/2017	09/15/2047	Interest Rate Swap			64130H-AQ-4	Neuberger Berman Loan Ad-SERIES 2017-24A CLASS CR	1	5,400,000	5,396,560
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,331,660	11,719,661	09/15/2017	09/15/2047	Interest Rate Swap			00206R-GL-0	AT&T Inc--SENIOR UNSECURED	2	10,331,660	11,719,661
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,138,193	22,275,506	09/15/2017	09/15/2047	Interest Rate Swap			00928Q-AQ-4	AIRCATTLE LTD--SENIOR UNSECURED	2	21,138,193	22,275,506
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,663,859	22,881,485	09/15/2017	09/15/2047	Interest Rate Swap			29365T-AF-1	Entergy Texas Inc--SECURED	2	21,663,859	22,881,485
57629*DMO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		14,674,409	14,568,222	09/15/2017	09/15/2047	Interest Rate Swap			90933J-AA-9	UNITED AIRLINES 2016-2 C-FIRST LIEN	3	14,674,409	14,568,222
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	1,508,355	40,244,065	09/15/2017	09/15/2047	Interest Rate Swap	38,602,124		031162-CJ-7	AMGEN INC--SENIOR UNSECURED	2	1,508,355	1,641,941
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		175,825	183,353	09/15/2017	09/15/2047	Interest Rate Swap			445658-CD-7	UB HUNT TRANSPRT SVCS--SENIOR UNSECURED NOTE	2	175,825	183,353
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,081,444	25,049,695	09/15/2017	09/15/2047	Interest Rate Swap			456866-AM-4	INGERSOLL-RAND CO--DEBTURE	2	22,081,444	25,049,695
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,132,162	16,084,427	09/15/2017	09/15/2047	Interest Rate Swap			664397-AK-2	EVERSOURCE ENERGY--UNSECURED NOTE Kingsland Ltd-SERIES 18-8A CLASS A	2	16,132,162	16,084,427
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		164,900,000	164,703,934	09/15/2017	09/15/2047	Interest Rate Swap			42086P-AC-7	Ballyrock CLO 2019-2 Ltd-SERIES 19-2A CLASS BR	1	164,900,000	164,703,934
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,900,000	5,859,544	09/15/2017	09/15/2047	Interest Rate Swap			05875M-AS-1	DIGITAL REALTY TRUST LP--SENIOR UNSECURED	2	5,900,000	5,859,544
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		17,838,612	19,735,819	09/15/2017	09/15/2047	Interest Rate Swap			25389J-AQ-9	VALLEY NATIONAL BANCORP--SUBORDINATED NOTE	2	17,838,612	19,735,819
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		6,466,352	6,861,031	09/15/2017	09/15/2047	Interest Rate Swap			919794-AB-3	Arrow Electronics Inc--DEBTURE	2	6,466,352	6,861,031
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,891,032	16,618,529	09/15/2017	09/15/2047	Interest Rate Swap			042735-AK-6	Sixth Street CLO-SIXST 2021-20A C	1	13,891,032	16,618,529
57629*DL2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		3,000,000	2,988,048	09/15/2017	09/15/2047	Interest Rate Swap			83012Q-AE-4	AbbVie Inc--SENIOR UNSECURED NOTE	2	3,000,000	2,988,048
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	9,434,192	48,390,525	09/15/2017	09/15/2047	Interest Rate Swap	38,816,982		00287Y-AL-3	Ascension Health--SENIOR UNSECURED	1	9,434,192	9,573,543
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		3,397,286	3,435,946	09/15/2017	09/15/2047	Interest Rate Swap			04352E-AA-3	COLONIAL PIPELINE CO--SR UNSECURED	1	3,397,286	3,435,946
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,173,851	5,516,749	09/15/2017	09/15/2047	Interest Rate Swap			195869-AP-7	DISCOVER FINANCIAL SVS--SENIOR UNSECURED	2	5,173,851	5,516,749
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,725,323	52,433,916	09/15/2017	09/15/2047	Interest Rate Swap			254709-AM-0	Humana Inc--SENIOR UNSECURED NOTE	2	47,725,323	52,433,916
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		9,533,033	9,710,468	09/15/2017	09/15/2047	Interest Rate Swap			444859-BA-9	Humana Inc--SENIOR UNSECURED NOTE	2	9,533,033	9,710,468

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,500,000	2,482,245	09/15/2017	09/15/2047	Interest Rate Swap			50189P-AN-2	LOW LTD PARTNERSHIP-SERIES 25A CLASS C2	1	2,500,000	2,482,245
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,308,723	5,357,151	09/15/2017	09/15/2047	Interest Rate Swap			09247X-AJ-0	BlackRock Inc-SENIOR UNSECURED NOTE	1	5,308,723	5,357,151
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		66,300,000	65,897,029	09/15/2017	09/15/2047	Interest Rate Swap			858102-AX-4	Steele Creek CLO 2016-1-SERIES 2016-1A CLASS AR	1	66,300,000	65,897,029
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		47,047,891	55,336,183	09/15/2017	09/15/2047	Interest Rate Swap			341081-FG-7	FLORIDA POWER & LIGHT CO-SECURED BOND	1	47,047,891	55,336,183
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		8,800,000	8,744,542	09/15/2017	09/15/2047	Interest Rate Swap			05683L-AC-0	Bain Capital Credit CLO-BCC 2018-1A A2	1	8,800,000	8,744,542
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		11,648,775	12,407,437	09/15/2017	09/15/2047	Interest Rate Swap			224044-CG-0	COX COMMUNICATIONS INC-SENIOR UNSECURED	2	11,648,775	12,407,437
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,280,771	16,365,065	09/15/2017	09/15/2047	Interest Rate Swap			709599-AZ-7	Penske Truck Leasing Co-SENIOR UNSECURED	2	15,280,771	16,365,065
57629*DP3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,366,896	22,564,382	09/15/2017	09/15/2047	Interest Rate Swap			98389B-AV-2	Xcel Energy Inc-SENIOR UNSECURED	2	20,366,896	22,564,382
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	250,000,000	16,898,214	56,202,054	09/15/2017	09/15/2047	Interest Rate Swap		38,333,552	00774M-AB-1	AERCAP IRELAND CAPITAL D-SENIOR UNSECURED	2	16,898,214	17,868,502
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,416,909	19,670,088	09/15/2017	09/15/2047	Interest Rate Swap			378272-AL-2	GLENORE FUNDING LLC-SR UNSECURED	2	18,416,909	19,670,088
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		50,424,960	50,653,800	09/15/2017	09/15/2047	Interest Rate Swap			191216-CY-4	Coca-Cola Co/The-SENIOR UNSECURED	1	50,424,960	50,653,800
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		16,478,365	17,684,789	09/15/2017	09/15/2047	Interest Rate Swap			09778P-AA-3	Bon Secours Mercy Health-SECURED	1	16,478,365	17,684,789
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,296,666	19,890,557	09/15/2017	09/15/2047	Interest Rate Swap			67103H-AF-4	O'REILLY AUTOMOTIVE INC-SENIOR UNSECURED	2	18,296,666	19,890,557
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		1,617,385	1,742,645	09/15/2017	09/15/2047	Interest Rate Swap			806851-AG-6	SCHLUMBERGER HLDGS CORP-SR UNSECURED	2	1,617,385	1,742,645
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,466,537	5,797,531	09/15/2017	09/15/2047	Interest Rate Swap			756250-AD-1	Reckitt Benckiser Treasu-SENIOR UNSECURED	1	5,466,537	5,797,531
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		21,026,821	22,781,697	09/15/2017	09/15/2047	Interest Rate Swap			465077-AK-1	ISRAEL ELECTRIC CORP LTD-SECURED NOTE	2	21,026,821	22,781,697
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,788,928	18,283,484	09/15/2017	09/15/2047	Interest Rate Swap			23338V-AE-6	DTE Electric Co-SECURED	1	15,788,928	18,283,484
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		70,960,545	86,089,629	09/15/2017	09/15/2047	Interest Rate Swap			458140-AK-6	INTEL CORP-SENIOR UNSECURED NOTE	1	70,960,545	86,089,629
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		13,696,667	15,338,820	09/15/2017	09/15/2047	Interest Rate Swap			11271L-AC-6	Brookfield Finance Inc-SENIOR UNSECURED	1	13,696,667	15,338,820
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		889,872	903,980	09/15/2017	09/15/2047	Interest Rate Swap			20162R-AB-8	Marine Corps Community S-UNSECURED BOND	1	889,872	903,980
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		682,224	977,099	09/15/2017	09/15/2047	Interest Rate Swap			40728T-AA-1	HAMILTON COLLEGE-UNSECURED	1	682,224	977,099
57629*DN8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		1,915,850	2,118,253	09/15/2017	09/15/2047	Interest Rate Swap			756250-AE-9	Reckitt Benckiser Treasu-SENIOR UNSECURED	1	1,915,850	2,118,253
Awaiting PPN	Sovereign Bond of Brazil	2Z	5,000,000	10,752,381	11,784,950	06/21/2021	12/20/2026	5 Yr Credit Default Swap	(205,254)	(240,050)	912810-RP-5	US TREAS N/B-NOTE	1	10,957,635	12,025,000
Awaiting PPN	Sovereign Bond of Mexico	2Z	20,000,000	24,637,947	25,961,232	06/21/2021	12/20/2026	5 Yr Credit Default Swap	66,740	85,512	912833-LL-2	US TREASURY-STRIP COUPON RECEIPT	1	24,571,207	25,875,720
Awaiting PPN	Sovereign Bond of Columbia	2Z	30,000,000	34,367,184	40,964,378	06/21/2021	12/20/2026	5 Yr Credit Default Swap	(613,351)	(1,440,310)	912810-RV-2	US TREASURY N/B-UNSECURED	1	34,980,535	42,404,688
Awaiting PPN	Sovereign Bond of India	2Z	40,000,000	31,383,944	38,030,256	09/20/2021	12/20/2026	5 Yr Credit Default Swap	401,184	471,818	912810-RV-2	US TREASURY N/B-UNSECURED	1	30,982,760	37,558,438
Awaiting PPN	Sovereign Bond of India	2Z		14,892,857	17,764,454	09/20/2021	12/20/2026	5 Yr Credit Default Swap			912810-RU-4	US TREASURY N/B-UNSECURED	1	14,892,857	17,764,454
57629*DX6	Evergreen Basket of Floating Rate Corporate Bonds	1	200,000,000	55,864,680	(4,688,576)	11/07/2018	11/07/2048	Interest Rate Swap		(72,796,102)	882508-BD-5	Texas Instruments Inc-SENIOR UNSECURED	1	55,864,680	68,107,526
57629*DX6	Evergreen Basket of Floating Rate Corporate Bonds	1		48,994,458	58,718,854	11/07/2018	11/07/2048	Interest Rate Swap			745332-CG-9	PUGET SOUND ENERGY INC-SECURED	1	48,994,458	58,718,854
57629*DX6	Evergreen Basket of Floating Rate Corporate Bonds	1		48,661,153	60,440,361	11/07/2018	11/07/2048	Interest Rate Swap			81373P-AA-1	Securian Financial Group-SENIOR UNSECURED	1	48,661,153	60,440,361
57629*DX6	Evergreen Basket of Floating Rate Corporate Bonds	1		54,546,009	64,077,072	11/07/2018	11/07/2048	Interest Rate Swap			92826C-AF-9	VISA INC-SR UNSECURED	1	54,546,009	64,077,072
57629*DX6	Evergreen Basket of Floating Rate Corporate Bonds	1		37,201,895	48,803,337	11/07/2018	11/07/2048	Interest Rate Swap			670346-AH-8	NUCOR CORP-SENIOR UNSECURED NOTE	1	37,201,895	48,803,337
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1	300,000,000	57,240,026	(34,710,841)	11/08/2018	11/08/2048	Interest Rate Swap		(108,261,962)	125720-AH-8	OME Group Inc-SENIOR UNSECURED	1	57,240,026	73,551,121
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		51,180,724	59,241,958	11/08/2018	11/08/2048	Interest Rate Swap			00440E-AW-7	ACE INA HOLDINGS-SR UNSECURED	1	51,180,724	59,241,958

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		1,013,077	1,161,157	11/08/2018	11/08/2048	Interest Rate Swap				30231G-AW-2	EXXON MOBIL CORPORATION-SR UNSECURED	1	1,013,077	1,161,157
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		58,049,013	69,589,522	11/08/2018	11/08/2048	Interest Rate Swap				037833-BX-7	APPLE INC-SENIOR UNSECURED	1	58,049,013	69,589,522
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		56,280,250	64,168,196	11/08/2018	11/08/2048	Interest Rate Swap				91324P-CR-1	UNITEDHEALTH GROUP INC-SR UNSECURED	1	56,280,250	64,168,196
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		76,712,057	86,742,827	11/08/2018	11/08/2048	Interest Rate Swap				023135-AQ-9	AMAZON.COM INC-SR UNSECURED	1	76,712,057	86,742,827
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		11,321,837	13,690,480	11/08/2018	11/08/2048	Interest Rate Swap				438516-BS-4	Honeywell International -SENIOR UNSECURED	1	11,321,837	13,690,480
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		10,000,000	9,999,950	11/08/2018	11/08/2048	Interest Rate Swap				12511A-AC-8	CBAM Ltd-CBAM 2020-13A B1	1	10,000,000	9,999,950
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		6,700,000	6,700,375	11/08/2018	11/08/2048	Interest Rate Swap				09630Q-AC-5	BlueMountain CLO XXX Ltd-SERIES 20-30A CLASS B	1	6,700,000	6,700,375
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		18,145,724	18,119,590	11/08/2018	11/08/2048	Interest Rate Swap				037833-DI-7	APPLE INC FIXED COUPON 2.650000 MATURITY 20500511	1	18,145,724	18,119,590
57629*DIW8	Evergreen Basket of Floating Rate Corporate Bonds	1		10,000,000	10,000,000	11/08/2018	11/08/2048	Interest Rate Swap				50079B-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1	160,000,000	37,921,146	(16,118,667)	11/08/2018	11/08/2048	Interest Rate Swap		(57,953,417)		575634-AT-7	MASSACHUSETTS ELECTRIC-SENIOR UNSECURED	2	37,921,146	41,834,750
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		35,421,386	41,296,358	11/08/2018	11/08/2048	Interest Rate Swap				45138L-BD-4	IDaho POWER CORP-SECURED NOTE	1	35,421,386	41,296,358
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		29,324,166	34,335,078	11/08/2018	11/08/2048	Interest Rate Swap				29246Q-AB-1	Empresa de Transporte de-SENIOR UNSECURED	1	29,324,166	34,335,078
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		27,758,414	33,758,370	11/08/2018	11/08/2048	Interest Rate Swap				771196-BH-4	ROCHE HOLDING INC-SENIOR UNSECURED NOTE	1	27,758,414	33,758,370
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		30,730,361	36,281,415	11/08/2018	11/08/2048	Interest Rate Swap				437076-BH-4	Home Depot Inc/The-SENIOR UNSECURED	1	30,730,361	36,281,415
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		24,641,807	30,909,941	11/08/2018	11/08/2048	Interest Rate Swap				578454-AD-2	MAYO CLINIC-UNSECURED	1	24,641,807	30,909,941
57629*DU1	Evergreen Basket of Floating Rate Corporate Bonds	1		17,583,338	19,830,817	11/08/2018	11/08/2048	Interest Rate Swap				571676-AH-8	Mars Inc-SENIOR UNSECURED	1	17,583,338	19,830,817
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1	160,000,000	36,934,335	(2,537,478)	12/10/2018	12/10/2048	Interest Rate Swap		(46,430,203)		828807-CZ-8	SIMON PROPERTY GROUP LP-SENIOR UNSECURED	1	36,934,335	43,892,725
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		32,889,470	40,315,021	12/10/2018	12/10/2048	Interest Rate Swap				12189L-BB-6	BURLINGTN NORTH SANTA FE-SENIOR UNSECURED	1	32,889,470	40,315,021
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		34,002,764	41,143,641	12/10/2018	12/10/2048	Interest Rate Swap				391382-AB-4	GREAT-WEST LIFE CO FINANC-SENIOR UNSECURED	1	34,002,764	41,143,641
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		30,538,666	36,237,614	12/10/2018	12/10/2048	Interest Rate Swap				455434-BR-0	INDIANAPOLIS PWR & LIGHT-SECURED BOND	1	30,538,666	36,237,614
57629*DU2	Evergreen Basket of Floating Rate Corporate Bonds	1		54,296,489	68,081,196	12/10/2018	12/10/2048	Interest Rate Swap				002824-BH-2	ABBOTT LABORATORIES-SENIOR UNSECURED	1	54,296,489	68,081,196
57629*EP2	Evergreen Basket of Floating Rate Corporate Bonds	1	165,000,000	60,454,222	25,679,584	02/04/2019	02/04/2049	Interest Rate Swap		(42,345,195)		68389X-AW-7	ORACLE CORP-SENIOR UNSECURED NOTE	2	60,454,222	68,024,779
57629*EP2	Evergreen Basket of Floating Rate Corporate Bonds	1		63,288,439	74,806,064	02/04/2019	02/04/2049	Interest Rate Swap				149123-CB-5	Caterpillar Inc-SENIOR UNSECURED BOND	1	63,288,439	74,806,064
57629*EP2	Evergreen Basket of Floating Rate Corporate Bonds	1		72,329,439	87,425,299	02/04/2019	02/04/2049	Interest Rate Swap				377372-AE-7	GLAXOSMITHKLINE CAP INC-SR UNSECURED	1	72,329,439	87,425,299
57629*EP2	Evergreen Basket of Floating Rate Corporate Bonds	1		43,114,369	47,166,368	02/04/2019	02/04/2049	Interest Rate Swap				983024-AN-0	Wyeth LLC-NOTE	1	43,114,369	47,166,368
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	255,154,891	56,963,493	76,765,087	07/29/2021	07/29/2022	TRS Bond Index		2,345,246		539830-AW-9	Lockheed Martin Corp-SENIOR UNSECURED NOTE	1	56,963,493	74,419,841
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,052,111	1,051,556	07/29/2021	07/29/2022	TRS Bond Index				89153V-AB-5	Total Capital Internatio-SENIOR UNSECURED NOTE	1	1,052,111	1,051,556
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,494,549	1,530,525	07/29/2021	07/29/2022	TRS Bond Index				485134-BN-9	KANSAS CITY POWER & LT-SENIOR UNSECURED NOTE	1	1,494,549	1,530,525
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,995,614	16,109,947	07/29/2021	07/29/2022	TRS Bond Index				52107Q-AJ-4	Lazard Group LLC-SENIOR UNSECURED	2	13,995,614	16,109,947
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,612,720	16,242,261	07/29/2021	07/29/2022	TRS Bond Index				767201-AD-8	RIO TINTO FIN USA LTD-SENIOR UNSECURED NOTE	1	13,612,720	16,242,261
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		1,377,540	1,684,366	07/29/2021	07/29/2022	TRS Bond Index				12189L-AW-1	BURLINGTN NORTH SANTA FE-SENIOR UNSECURED	1	1,377,540	1,684,366

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,643,002	16,223,122	07/29/2021	07/29/2022	TRS Bond Index			03076C-AH-9	Ameriprise Financial Inc-SENIOR UNSECURED	1	15,643,002	16,223,122
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,468,742	14,605,601	07/29/2021	07/29/2022	TRS Bond Index			92928Q-AE-8	WEA Finance LLC-SENIOR UNSECURED	2	13,468,742	14,605,601
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,877,991	9,364,160	07/29/2021	07/29/2022	TRS Bond Index			373298-CF-3	INTERCONTINENTAL EXCHANGE-SENIOR UNSECURED NOTE	1	8,877,991	9,364,160
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,257,412	8,642,735	07/29/2021	07/29/2022	TRS Bond Index			45866F-AA-2	INTERCONTINENTAL EXCHANGE-SENIOR UNSECURED NOTE	1	8,257,412	8,642,735
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		22,000,000	22,000,000	07/29/2021	07/29/2022	TRS Bond Index			78401Z-MM-2	SCL XL I FUND L.P. - Senior Secured Revolving Facility	1	22,000,000	22,000,000
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,182,794	5,170,501	07/29/2021	07/29/2022	TRS Bond Index			020002-AZ-4	ALLSTATE CORP-SR UNSECURED	1	5,182,794	5,170,501
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		261,267	260,469	07/29/2021	07/29/2022	TRS Bond Index			12189L-AQ-4	Burlington Northern Sant-SENIOR UNSECURED	1	261,267	260,469
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		26,451,479	29,234,990	07/29/2021	07/29/2022	TRS Bond Index			448814-EJ-8	HYDRO-QUEBEC-NOTE	1	26,451,479	29,234,990
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		60,000,000	60,349,440	07/29/2021	07/29/2022	TRS Bond Index			G7332F-AD-5	RRPF Engine Leasing Ltd Senior Secured	2	60,000,000	60,349,440
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		12,500,000	12,408,775	07/29/2021	07/29/2022	TRS Bond Index			67115L-AC-8	Oak Hill Credit Partners-OAKC 2021-16A B	1	12,500,000	12,408,775
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	282,968,750	4,759,692	27,436,664	06/08/2021	06/08/2022	TRS Bond Index		22,297,863	57174B-AZ-5	Marsh & McLennan Cos Inc-SR UNSECURED	2	4,759,692	5,138,801
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		5,533,137	5,954,120	06/08/2021	06/08/2022	TRS Bond Index			69353R-EQ-7	PNC Bank NA-SENIOR UNSECURED	1	5,533,137	5,954,120
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		10,550,000	10,545,105	06/08/2021	06/08/2022	TRS Bond Index			74983A-AC-7	RR 19 Ltd-PRAM 2021-19A A2	1	10,550,000	10,545,105
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		17,354,926	18,605,026	06/08/2021	06/08/2022	TRS Bond Index			52107Q-AG-0	LAZARD GROUP LLC-SENIOR UNSECURED	2	17,354,926	18,605,026
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		17,195,845	18,581,956	06/08/2021	06/08/2022	TRS Bond Index			780082-AD-5	Royal Bank of Canada-SUBORDINATED	1	17,195,845	18,581,956
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		18,734,103	19,928,103	06/08/2021	06/08/2022	TRS Bond Index			00830Y-AB-7	Africa Finance Corp-SENIOR UNSECURED	1	18,734,103	19,928,103
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		13,095,235	14,645,438	06/08/2021	06/08/2022	TRS Bond Index			74340X-BH-3	Prologis LP-SENIOR UNSECURED	1	13,095,235	14,645,438
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		5,704,472	5,928,529	06/08/2021	06/08/2022	TRS Bond Index			845743-BP-7	SOUTHWESTERN PUBLIC SERV-SECURED	1	5,704,472	5,928,529
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		14,000,000	13,844,824	06/08/2021	06/08/2022	TRS Bond Index			67592R-AC-7	Wells Fargo-OCT53 2021-1A B	1	14,000,000	13,844,824
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		29,068,245	34,759,539	06/08/2021	06/08/2022	TRS Bond Index			911312-AJ-5	UNITED PARCEL SERVICE IN-SENIOR UNSECURED NOTE	1	29,068,245	34,759,539
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		7,500,000	7,614,356	06/08/2021	06/08/2022	TRS Bond Index			06654D-AB-3	Banner Health-UNSECURED	1	7,500,000	7,614,356
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		3,047,507	3,252,504	06/08/2021	06/08/2022	TRS Bond Index			06051G-GA-1	BANK OF AMERICA CORP-SENIOR UNSECURED	1	3,047,507	3,252,504
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		96,412,335	96,412,335	06/08/2021	06/08/2022	TRS Bond Index			57542Z-A7-2	MM Investment Holding Revolver Floating Line	2	96,412,335	96,412,335
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		15,000,000	14,732,145	06/08/2021	06/08/2022	TRS Bond Index			67102Q-AZ-1	OHA Credit Partners VII -SERIES 2012-7A CLASS BR3	1	15,000,000	14,732,145
Need to File with the NAIC	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z		28,000,000	28,000,000	06/08/2021	06/08/2022	TRS Bond Index			50079E-MT-3	KREF Lending VII LLC - Term Loan Series 2020-8	1	28,000,000	28,000,000
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	15,563,528	43,656,893	07/31/2019	07/31/2049	Interest Rate Swap		28,093,365	90139P-AB-5	Twin Brook Capital Funding I WSPV, LLC	1	15,563,528	15,563,528
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,154,358	15,154,358	07/31/2019	07/31/2049	Interest Rate Swap			90139Q-AB-3	Twin Brook Capital Funding II WSPV, LLC	1	15,154,358	15,154,358
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		37,000,000	37,140,600	07/31/2019	07/31/2049	Interest Rate Swap			72403Z-NL-4	PIONEERS GATE LLC 2019-6 AXIS Note	1	37,000,000	37,140,600
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	50,046,300	07/31/2019	07/31/2049	Interest Rate Swap			03329F-AN-4	ANCHC 2020-15A AR FLOATING COUPON MATURITY 20340720	1	50,000,000	50,046,300
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,392,843	21,485,101	07/31/2019	07/31/2049	Interest Rate Swap			05682V-AA-3	BAIN CAPITAL CREDIT CLO -SERIES 18-2A CLASS A1	1	21,392,843	21,485,101
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,001,365	07/31/2019	07/31/2049	Interest Rate Swap			88432U-AC-0	WINDR 2018-3A A2 FLOATING COUPON 1.638250 MATURITY 20310120	1	15,000,000	15,001,365

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			15,000,000	15,009,210	07/31/2019	07/31/2049	Interest Rate Swap				04019L-AL-8	ARES LI CLO Ltd-ARES 2019-51A A1R	1	15,000,000	15,009,210
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			14,700,000	14,646,521	07/31/2019	07/31/2049	Interest Rate Swap				5821L-AC-8	Madison Park Funding XXX-MDPK 2021-39A B	1	14,700,000	14,646,521
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			44,036,351	51,670,672	07/31/2019	07/31/2049	Interest Rate Swap				341081-FR-3	Florida Power & Light Co-SECURED FS CREIT FINANCE MM-1 LLC - Secured Term Loan Facility	1	44,036,351	51,670,672
57629*EE7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			23,000,000	23,000,000	07/31/2019	07/31/2049	Interest Rate Swap				30300Z-MM-5		1	23,000,000	23,000,000
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds		250,000,000	84,000,000	112,744,876	07/31/2019	07/31/2049	Interest Rate Swap		28,576,876		72403Z-MX-9	PIONEERS GATE LLC 2017-1 FNBM	1	84,000,000	84,168,000
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			68,000,000	68,055,012	07/31/2019	07/31/2049	Interest Rate Swap				48661W-AA-6	KAYNE CLO-SERIES 19-3A CLASS A	1	68,000,000	68,055,012
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			69,500,000	69,500,000	07/31/2019	07/31/2049	Interest Rate Swap				57888Z-MM-8	MCOF FINANCE, LLC - Senior Secured Revolving Loan Facility	1	69,500,000	69,500,000
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			7,625,000	7,625,000	07/31/2019	07/31/2049	Interest Rate Swap				48250E-AE-5	KKR CLO 30 Ltd-KKR 30A B1	1	7,625,000	7,625,000
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			18,300,000	18,306,368	07/31/2019	07/31/2049	Interest Rate Swap				830120-AA-2	Sixth Street CLO-SIXST 2021-20A A1	1	18,300,000	18,306,368
57629*EF4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			11,900,000	11,821,996	07/31/2019	07/31/2049	Interest Rate Swap				64133V-AC-1	Neuberger Berman CLO Ltd-NEUB 2021-44A B	1	11,900,000	11,821,996
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds		250,000,000	3,417,369	31,769,244	08/01/2019	08/01/2049	Interest Rate Swap		28,034,038		207597-EJ-0	Connecticut Light & Powe-SECURED Goldman Sachs Group Inc/-SENIOR UNSECURED NOTE	1	3,417,369	3,735,206
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			14,028,054	14,041,894	08/01/2019	08/01/2049	Interest Rate Swap				38141G-GS-7		2	14,028,054	14,041,894
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			1,592,639	1,673,804	08/01/2019	08/01/2049	Interest Rate Swap				771196-BK-7	ROCHE HOLDING INC-SR UNSECURED Advocate Health & Hospit-UNSECURED	1	1,592,639	1,673,804
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			11,560,056	12,080,525	08/01/2019	08/01/2049	Interest Rate Swap				007589-AE-4		1	11,560,056	12,080,525
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			3,334,538	3,702,138	08/01/2019	08/01/2049	Interest Rate Swap				78409V-AM-6	S&P Global Inc-SENIOR UNSECURED	1	3,334,538	3,702,138
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,905,260	11,109,281	08/01/2019	08/01/2049	Interest Rate Swap				67080L-AA-3	Nuveen LLC-SENIOR UNSECURED AMER AIRLN 14-1 A PTT-SECURED NOTE	1	10,905,260	11,109,281
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			204,437	205,975	08/01/2019	08/01/2049	Interest Rate Swap				02377A-AA-6		3	204,437	205,975
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,796,910	11,117,803	08/01/2019	08/01/2049	Interest Rate Swap				12572Q-AJ-4	OME Group Inc-SENIOR UNSECURED CAMDEN PROPERTY TRUST-SENIOR UNSECURED NOTE REID	1	10,796,910	11,117,803
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			2,681,099	2,743,266	08/01/2019	08/01/2049	Interest Rate Swap				13131A-AT-9		1	2,681,099	2,743,266
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,378,679	10,701,200	08/01/2019	08/01/2049	Interest Rate Swap				828807-DE-4	Simon Property Group LP-SENIOR UNSECURED	1	10,378,679	10,701,200
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,138,598	12,686,180	08/01/2019	08/01/2049	Interest Rate Swap				039483-AN-2	Archer-Daniels-Midland C-NOTE General Dynamics Corp-SENIOR UNSECURED	1	10,138,598	12,686,180
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			3,593,077	3,851,260	08/01/2019	08/01/2049	Interest Rate Swap				369550-BG-2		1	3,593,077	3,851,260
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,000,000	9,964,080	08/01/2019	08/01/2049	Interest Rate Swap				13876L-AL-1	CANYC 2020-1A BR FLOATING COUPON MATURITY 20340715	1	10,000,000	9,964,080
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			10,000,000	10,023,990	08/01/2019	08/01/2049	Interest Rate Swap				448814-DX-8	HYDRO-QUEBEC-DEBENTURE	1	10,000,000	10,023,990
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			125,059	131,057	08/01/2019	08/01/2049	Interest Rate Swap				46625H-KC-3	JPMorgan Chase & Co-SR UNSECURED	1	125,059	131,057
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			5,689,077	5,990,211	08/01/2019	08/01/2049	Interest Rate Swap				29364W-AM-0	ENTERGY LOUISIANA LLC 1ST MTD BD Baker Hughes a GE Co LLC-SENIOR UNSECURED	1	5,689,077	5,990,211
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			12,196,638	12,217,433	08/01/2019	08/01/2049	Interest Rate Swap				05723K-AD-2		1	12,196,638	12,217,433
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			7,844,208	7,845,012	08/01/2019	08/01/2049	Interest Rate Swap				055451-AQ-1	BHP BILLITON FIN USA LTD-SR UNSECURED	1	7,844,208	7,845,012
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			3,294,065	3,252,547	08/01/2019	08/01/2049	Interest Rate Swap				48730P-AC-4	KEENAN DEV ASSOCS TENN LLC LEASE REV BD 2005	1	3,294,065	3,252,547
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			3,788,773	3,916,394	08/01/2019	08/01/2049	Interest Rate Swap				93114Z-EE-9	WalMart Inc-SENIOR UNSECURED	1	3,788,773	3,916,394
57629*EQ0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds			3,239,342	3,326,418	08/01/2019	08/01/2049	Interest Rate Swap				88579Y-BC-4	3M Co-SENIOR UNSECURED	1	3,239,342	3,326,418

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*E00	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,201,041	25,218,411	08/01/2019	08/01/2049	Interest Rate Swap				00830Y-AC-5	Africa Finance Corp-SENIOR UNSECURED	1	23,201,041	25,218,411
57629*E00	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,215,761	46,422,849	08/01/2019	08/01/2049	Interest Rate Swap				039483-BM-3	ARCHER-DANIELS-MIDLAND C-SENIOR UNSECURED	1	38,215,761	46,422,849
57629*E00	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		54,100,000	54,102,272	08/01/2019	08/01/2049	Interest Rate Swap				67104L-AE-7	OHA Loan Funding 2013-2 -OHALF 2013-2A AR	1	54,100,000	54,102,272
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	5,000,000	21,769,240	08/01/2019	08/01/2049	Interest Rate Swap		16,769,240		500798-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	5,000,000	5,000,000
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,800,000	10,800,367	08/01/2019	08/01/2049	Interest Rate Swap				94949J-AC-9	Wellfleet CLO 2018-2 Ltd-WELF 2018-2A A2	1	10,800,000	10,800,367
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		42,900,000	42,907,121	08/01/2019	08/01/2049	Interest Rate Swap				67115L-AA-2	Oak Hill Credit Partners-OAKC 2021-16A A	1	42,900,000	42,907,121
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,994,780	6,448,177	08/01/2019	08/01/2049	Interest Rate Swap				448814-CP-6	HYDRO-QUEBEC-DEBENTURE	1	4,994,780	6,448,177
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,997,639	5,039,071	08/01/2019	08/01/2049	Interest Rate Swap				751277-AQ-7	NESTLE PURINA PETCARE CO-DEBENTURE	1	4,997,639	5,039,071
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,614,677	3,930,856	08/01/2019	08/01/2049	Interest Rate Swap				002824-BM-1	ABBOTT LABORATORIES-SENIOR UNSECURED	1	3,614,677	3,930,856
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,315,167	4,632,474	08/01/2019	08/01/2049	Interest Rate Swap				44107H-AC-6	NY Society for Relief of-SECURED ONCOR ELECTRIC DELIVERY-SENIOR SECURED NOTE	1	4,315,167	4,632,474
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,849,090	4,867,738	08/01/2019	08/01/2049	Interest Rate Swap				68233J-AR-5	ONCOR ELECTRIC DELIVERY-SENIOR SECURED NOTE	1	4,849,090	4,867,738
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		66,000,000	66,132,000	08/01/2019	08/01/2049	Interest Rate Swap				72403Z-MX-9	PIONEERS GATE LLC 2017-1 FNBM HPS Loan Management 14-2-HLM 14A-19 BR	1	66,000,000	66,132,000
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,600,000	5,493,942	08/01/2019	08/01/2049	Interest Rate Swap				40437W-AS-7	HPS Loan Management 14-2-HLM 14A-19 BR	1	5,600,000	5,493,942
57629*ET4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		255,414	254,670	08/01/2019	08/01/2049	Interest Rate Swap				341081-FJ-1	FLORIDA POWER & LIGHT CO-SECURED INTERCONTINENTAL EXCHANGE-SENIOR UNSECURED	1	255,414	254,670
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	2,121,109	30,300,296	08/01/2019	08/01/2049	Interest Rate Swap		28,034,038		45866F-AD-6	INTERCONTINENTAL EXCHANGE-SENIOR UNSECURED	1	2,121,109	2,266,258
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,534,387	9,469,784	08/01/2019	08/01/2049	Interest Rate Swap				64952W-CX-9	New York Life Global Fun-SECURED Virginia Electric & Powe-SENIOR UNSECURED	1	8,534,387	9,469,784
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,174,366	10,100,067	08/01/2019	08/01/2049	Interest Rate Swap				927804-FZ-2	UNSECURED UNION PACIFIC CORP-SENIOR UNSECURED NOTE	2	9,174,366	10,100,067
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		299,427	315,671	08/01/2019	08/01/2049	Interest Rate Swap				907818-DV-7	NOTE Magna International Inc-SR UNSECURED	2	299,427	315,671
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,547,135	8,219,358	08/01/2019	08/01/2049	Interest Rate Swap				55922Z-AR-5	UNSECURED State Street Corp-SUBORDINATED NOTE	1	7,547,135	8,219,358
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		199,945	206,392	08/01/2019	08/01/2049	Interest Rate Swap				857477-AL-7	UNSECURED STUDENT LOAN MKTG ASSOC-ZERO CPN BND	1	199,945	206,392
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,873,119	11,630,223	08/01/2019	08/01/2049	Interest Rate Swap				863871-AM-1	UNSECURED BND	2	10,873,119	11,630,223
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,168,984	3,443,552	08/01/2019	08/01/2049	Interest Rate Swap				91159H-HR-4	US Bancorp-SENIOR UNSECURED Old National Bancorp/IN-SENIOR UNSECURED NOTE	1	3,168,984	3,443,552
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,375,000	6,761,857	08/01/2019	08/01/2049	Interest Rate Swap				680033-AC-1	UNSECURED NOTE Costco Wholesale Corp-SENIOR UNSECURED	1	6,375,000	6,761,857
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,337,522	2,574,602	08/01/2019	08/01/2049	Interest Rate Swap				22160K-AM-7	UNSECURED	1	2,337,522	2,574,602
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,400,487	27,466,089	08/01/2019	08/01/2049	Interest Rate Swap				594918-BE-3	MICROSOFT CORP-SR UNSECURED	1	24,400,487	27,466,089
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,886,119	11,858,137	08/01/2019	08/01/2049	Interest Rate Swap				594918-CA-0	Microsoft Corp-SENIOR UNSECURED	1	11,886,119	11,858,137
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,463,681	4,536,407	08/01/2019	08/01/2049	Interest Rate Swap				70109H-AK-1	Parker-Hannifin Corp-NOTE	2	4,463,681	4,536,407
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,867,158	8,433,270	08/01/2019	08/01/2049	Interest Rate Swap				0010EP-AN-8	AEP TEXAS CENTRAL CO-SR UNSECURED	2	7,867,158	8,433,270
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,067,656	7,596,430	08/01/2019	08/01/2049	Interest Rate Swap				448814-CS-0	HYDRO-QUEBEC-DEBENTURE	1	7,067,656	7,596,430
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,999,998	60,000,000	08/01/2019	08/01/2049	Interest Rate Swap				57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	59,999,998	60,000,000
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,040,124	1,099,386	08/01/2019	08/01/2049	Interest Rate Swap				92826C-AD-4	VISA INC-SR UNSECURED	1	1,040,124	1,099,386

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,214,138	2,456,226	08/01/2019	08/01/2049	Interest Rate Swap			45866F-AF-1	Intercontinental Exchang-SENIOR UNSECURED	1	2,214,138	2,456,226
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,481,995	7,948,740	08/01/2019	08/01/2049	Interest Rate Swap			94974B-GH-7	Wells Fargo & Co-SR UNSECURED	2	7,481,995	7,948,740
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,294,613	7,350,444	08/01/2019	08/01/2049	Interest Rate Swap			377373-AD-7	GLAXOSMITHKLINE CAP LTD-SR UNSECURED	1	7,294,613	7,350,444
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,890,867	1,947,007	08/01/2019	08/01/2049	Interest Rate Swap			478111-AB-3	JOHNS HOPKINS HEALTH SYS-SENIOR UNSECURED NOTE	1	1,890,867	1,947,007
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,423,309	3,562,551	08/01/2019	08/01/2049	Interest Rate Swap			09681L-AJ-9	BOC Aviation Ltd-SENIOR UNSECURED Camden Property Trust-SENIOR UNSECURED	1	3,423,309	3,562,551
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,896,021	5,539,765	08/01/2019	08/01/2049	Interest Rate Swap			133131-AW-2	USTA National Tennis Cen Senior Secured	1	4,896,021	5,539,765
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,458,078	2,520,675	08/01/2019	08/01/2049	Interest Rate Swap			903630-AA-8	EAIV Delta MSN 15200	1	2,458,078	2,520,675
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,823,958	1,816,516	08/01/2019	08/01/2049	Interest Rate Swap			247358-FG-4	KAYNE ANDERSON MID/ENERGY-SR UNSEC SER C	1	1,823,958	1,816,516
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,440,000	1,448,996	08/01/2019	08/01/2049	Interest Rate Swap			48661E-AA-5	HEB Grocery Co. L.P. Senior Note Ser	1	1,440,000	1,448,996
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,000,000	3,300,111	08/01/2019	08/01/2049	Interest Rate Swap			42251F-AM-6	EAIV Delta MSN 15187	1	3,000,000	3,300,111
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,659,968	1,654,402	08/01/2019	08/01/2049	Interest Rate Swap			247358-EE-0	EAIV Delta MSN 15186	1	1,659,968	1,654,402
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,654,674	1,649,126	08/01/2019	08/01/2049	Interest Rate Swap			247358-MT-8	Children's Hospital Corp-SENIOR UNSECURED	1	1,654,674	1,649,126
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,660,340	16,068,703	08/01/2019	08/01/2049	Interest Rate Swap			16876B-AB-8	ABU DHABI CRUDE OIL PIPE-SECURED Palmer Square CLO 2014-1-SERIES	1	16,660,340	16,068,703
57629*EX5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,242,251	34,015,652	08/01/2019	08/01/2049	Interest Rate Swap		(3,240,911)	00401M-AB-2	EDUCATIONAL SERVICES OF -SERIES 2015-1 CLASS B	1	28,242,251	34,015,652
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	150,000,000	14,812,493	11,526,544	08/30/2019	08/30/2034	Interest Rate Swap			69688X-AU-5	EDUCATIONAL SERVICES OF -SERIES 2014-1A CLASS A2RR	1	14,812,493	14,767,455
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,212,190	2,370,214	08/30/2019	08/30/2034	Interest Rate Swap			281378-AB-5	EDUCATIONAL SERVICES OF -SERIES 2015-1 CLASS B	1	2,212,190	2,370,214
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		2,345,964	2,336,544	08/30/2019	08/30/2034	Interest Rate Swap			281377-AB-9	EDUCATIONAL SERVICES OF -SERIES 2014-2 CLASS B	1	2,345,964	2,336,544
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		1,019,277	953,269	08/30/2019	08/30/2034	Interest Rate Swap			19458L-BD-1	COLLEGIATE FUNDING SERVI-SERIES 2005-A CLASS B	1	1,019,277	953,269
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		24,417,226	25,210,520	08/30/2019	08/30/2034	Interest Rate Swap			03666H-AA-9	Antares Holdings LP-SENIOR UNSECURED	2	24,417,226	25,210,520
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,313,684	12,470,092	08/30/2019	08/30/2034	Interest Rate Swap			445658-CE-5	JB HUNT TRANSPRT SVCS-SR UNSECURED	2	12,313,684	12,470,092
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		12,209,129	13,324,337	08/30/2019	08/30/2034	Interest Rate Swap			708696-BY-4	Pennsylvania Electric Co-SENIOR UNSECURED	2	12,209,129	13,324,337
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		23,925,509	26,703,095	08/30/2019	08/30/2034	Interest Rate Swap			806851-AK-7	Schlumberger Holdings Co-SENIOR UNSECURED	2	23,925,509	26,703,095
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		20,602,668	22,299,924	08/30/2019	08/30/2034	Interest Rate Swap			10510K-AC-1	BRAMBLES USA INC-SR UNSECURED HONEYWELL INTERNATIONAL -	2	20,602,668	22,299,924
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		32,562,485	38,472,610	08/30/2019	08/30/2034	Interest Rate Swap			438516-BB-1	SENIORUNSECURED NOTE HONEYWELL INTERNATIONAL -SENIOR	1	32,562,485	38,472,610
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		4,806,577	5,453,194	08/30/2019	08/30/2034	Interest Rate Swap			438516-AT-3	NOTE	1	4,806,577	5,453,194
57629*ERB	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,331,685	15,433,283	08/30/2019	08/30/2034	Interest Rate Swap			03328Y-AA-2	ANCHORAGE CAPITAL CLO 1-ANCHC 2018-1RA A1	1	15,331,685	15,433,283
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	15,000,000	7,991,230	08/30/2019	08/30/2039	Interest Rate Swap		(7,008,770)	89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	15,000,000	15,000,000
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		19,722,718	19,644,839	08/30/2019	08/30/2039	Interest Rate Swap			693304-AY-3	PECO Energy Co-SECURED	1	19,722,718	19,644,839
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		15,892,476	17,846,908	08/30/2019	08/30/2039	Interest Rate Swap			579780-AN-7	NICORWICK & CO INC/MID-SENIOR UNSECURED	2	15,892,476	17,846,908
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		18,935,061	18,517,798	08/30/2019	08/30/2039	Interest Rate Swap			90932K-AA-7	United Airlines 2019-2 C-FIRST LIEN	3	18,935,061	18,517,798
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		14,329,552	15,625,544	08/30/2019	08/30/2039	Interest Rate Swap			22822V-AE-1	CROWN CASTLE INTL CORP-SENIOR UNSECURED	2	14,329,552	15,625,544

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		29,223,969	30,429,796	08/30/2019	08/30/2039	Interest Rate Swap			378272-AF-5	GLENORE FUNDING LLC-SENIOR UNSECURED NOTE	2	29,223,969	30,429,796
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		26,236,782	28,421,632	08/30/2019	08/30/2039	Interest Rate Swap			05369A-AA-9	Aviation Capital Group L-SENIOR UNSECURED	2	26,236,782	28,421,632
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		45,350,000	48,646,945	08/30/2019	08/30/2039	Interest Rate Swap			592688-B8-3	Mettler-Toledo Internati Senior Note Ser	2	45,350,000	48,646,945
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,000,000	10,018,470	08/30/2019	08/30/2039	Interest Rate Swap			290015-AN-6	Elmwood CLO I Ltd-ELM11 2019-1A BR	1	10,000,000	10,018,470
57629*EY3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		7,850,000	7,887,821	08/30/2019	08/30/2039	Interest Rate Swap			48661Q-AE-1	Kayne CLO 9 Ltd-SERIES 20-9A CLASS B1	1	7,850,000	7,887,821
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2	200,000,000	709,300	(8,383,952)	08/30/2019	08/30/2049	Interest Rate Swap		(9,175,709)	984851-AF-2	Yara International ASA-SENIOR UNSECURED	2	709,300	791,757
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		30,164,486	33,814,656	08/30/2019	08/30/2049	Interest Rate Swap			28176E-AD-0	Edwards Lifesciences Cor-SENIOR UNSECURED	2	30,164,486	33,814,656
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		37,003,732	41,880,135	08/30/2019	08/30/2049	Interest Rate Swap			361448-BC-6	GATX Corp-SENIOR UNSECURED	2	37,003,732	41,880,135
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		17,564,133	19,035,662	08/30/2019	08/30/2049	Interest Rate Swap			120568-AX-8	BUNGE LTD FINANCE CORP-SENIOR UNSECURED	2	17,564,133	19,035,662
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		22,580,121	22,569,580	08/30/2019	08/30/2049	Interest Rate Swap			00908P-AC-1	Air Canada 2017-1 Class -SECURED	3	22,580,121	22,569,580
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		5,139,962	5,726,695	08/30/2019	08/30/2049	Interest Rate Swap			171340-AN-2	CHURCH & DWIGHT CO INC-SENIOR UNSECURED	2	5,139,962	5,726,695
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		10,232,518	10,422,014	08/30/2019	08/30/2049	Interest Rate Swap			80687P-AA-4	Schneider Electric SE-SENIOR UNSECURED NOTE	1	10,232,518	10,422,014
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		45,147,805	52,280,885	08/30/2019	08/30/2049	Interest Rate Swap			23338V-AE-6	DTE Electric Co-SECURED	1	45,147,805	52,280,885
57629*EU1	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2		39,999,998	40,000,000	08/30/2019	08/30/2049	Interest Rate Swap			57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	39,999,998	40,000,000
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	306,000,000	75,000,000	70,416,945	09/03/2019	09/03/2049	Interest Rate Swap		(11,264,355)	30290Y-AC-5	FS Global Credit Opportu-FS GLOBAL CREDIT	1	75,000,000	81,681,300
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,456,864	11,800,044	09/03/2019	09/03/2049	Interest Rate Swap			801060-AD-6	Sanofi-SENIOR UNSECURED	1	10,456,864	11,800,044
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,065,721	7,664,844	09/03/2019	09/03/2049	Interest Rate Swap			00108W-AH-3	AEP Texas Inc-SENIOR UNSECURED	2	7,065,721	7,664,844
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,200,000	23,473,834	09/03/2019	09/03/2049	Interest Rate Swap			892331-AD-1	Toyota Motor Corp-SENIOR UNSECURED	1	21,200,000	23,473,834
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,690,519	22,996,285	09/03/2019	09/03/2049	Interest Rate Swap			79466L-AF-1	salesforce.com Inc-SENIOR UNSECURED	1	20,690,519	22,996,285
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,854,416	30,548,409	09/03/2019	09/03/2049	Interest Rate Swap			369550-BC-1	General Dynamics Corp-SENIOR UNSECURED	1	27,854,416	30,548,409
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,817,748	25,966,426	09/03/2019	09/03/2049	Interest Rate Swap			892330-AC-5	Toyota Industries Corp-SENIOR UNSECURED	1	23,817,748	25,966,426
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		34,777,219	34,897,415	09/03/2019	09/03/2049	Interest Rate Swap			501886-AT-0	LOM XVIII LP-LCM 18A A1R	1	34,777,219	34,897,415
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,000,000	44,989,875	09/03/2019	09/03/2049	Interest Rate Swap			13876J-AC-6	Canyon Capital CLO Ltd-CANYC 2012-1RA A	1	45,000,000	44,989,875
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,309,298	2,409,402	09/03/2019	09/03/2049	Interest Rate Swap			313747-AU-1	Federal Realty Investmen-SENIOR UNSECURED	2	2,309,298	2,409,402
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1				09/03/2019	09/03/2049	Interest Rate Swap			219868-BS-4	CORP ANDINA DE FOMENTO-SENIOR UNSECURED NOTE	1		
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,084,896	5,130,249	09/03/2019	09/03/2049	Interest Rate Swap			879240-AQ-2	COMCAST CABLE HOLDINGS-SENIOR UNSECURED NOTE	1	5,084,896	5,130,249
57629*FB2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		44,999,998	45,000,000	09/03/2019	09/03/2049	Interest Rate Swap			57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	44,999,998	45,000,000
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	255,000,000	79,999,997	71,880,222	09/03/2019	09/03/2049	Interest Rate Swap		(8,119,778)	57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	79,999,997	80,000,000
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,940,239	8,706,017	09/03/2019	09/03/2049	Interest Rate Swap			06406R-AF-4	Bank of New York Mellon -SENIOR UNSECURED	1	7,940,239	8,706,017
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,441,637	2,836,210	09/03/2019	09/03/2049	Interest Rate Swap			90932P-AA-6	UNITED AIR 2014-1 A PTT-SECURED NOTE	2	2,441,637	2,836,210
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,833,161	14,301,434	09/03/2019	09/03/2049	Interest Rate Swap			606822-AV-6	Mitsubishi UFJ Financial-SENIOR UNSECURED	1	12,833,161	14,301,434

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,080,795	3,299,231	09/03/2019	09/03/2049	Interest Rate Swap			857477-AN-3	State Street Corp-SR UNSECURED	1	3,080,795	3,299,231
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,800,000	7,449,405	09/03/2019	09/03/2049	Interest Rate Swap			631005-BH-7	Narragansett Electric Co-SENIOR UNSECURED	2	6,800,000	7,449,405
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,392,753	2,613,275	09/03/2019	09/03/2049	Interest Rate Swap			532457-AZ-1	Eli Lilly & Co-SENIOR UNSECURED	1	2,392,753	2,613,275
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,975,718	2,001,307	09/03/2019	09/03/2049	Interest Rate Swap			06366R-JJ-5	BANK OF MONTREAL-SR UNSECURED	1	1,975,718	2,001,307
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,103,411	13,140,645	09/03/2019	09/03/2049	Interest Rate Swap			09062X-AF-0	BIOMGEN INC-SR UNSECURED	1	12,103,411	13,140,645
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,296,277	7,560,803	09/03/2019	09/03/2049	Interest Rate Swap			46625H-JV-7	JPMorgan Chase & Co-SUBORDINATED NOTE	1	7,296,277	7,560,803
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,683,491	2,932,766	09/03/2019	09/03/2049	Interest Rate Swap			452308-AX-7	Illinois Tool Works Inc-SENIOR UNSECURED	1	2,683,491	2,932,766
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,079,092	30,882,103	09/03/2019	09/03/2049	Interest Rate Swap			254687-CP-9	Walt Disney Co/The-SENIOR UNSECURED	1	30,079,092	30,882,103
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,613,820	8,161,556	09/03/2019	09/03/2049	Interest Rate Swap			313747-AV-3	Federal Realty Investmen-SENIOR UNSECURED	2	7,613,820	8,161,556
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,670,026	7,422,775	09/03/2019	09/03/2049	Interest Rate Swap			477143-AJ-0	JetBlue 2019-1 Class A P-FIRST LIEN	2	7,670,026	7,422,775
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,194,219	6,833,328	09/03/2019	09/03/2049	Interest Rate Swap			670346-AP-0	Nucor Corp-SENIOR UNSECURED	1	6,194,219	6,833,328
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,237,076	2,161,373	09/03/2019	09/03/2049	Interest Rate Swap			78442G-RY-4	SLM STUDENT LOAN TRUST-SERIES 2006-2 CLASS B	1	2,237,076	2,161,373
57629*ES6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		100,000,000	100,007,500	09/03/2019	09/03/2049	Interest Rate Swap			420860-AA-9	Kingsland VI Ltd-KING 2013-6A AR	1	100,000,000	100,007,500
57629*EG2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	89,000,000	16,000,000	13,153,591	09/03/2019	09/03/2049	Interest Rate Swap		(2,847,561)	06760X-AC-8	BARINGS CLO LTD 2018-IV-SERIES 18-4A CLASS A2	1	16,000,000	16,001,152
57629*EG2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		63,000,000	63,002,331	09/03/2019	09/03/2049	Interest Rate Swap			87271L-AJ-1	TIAA CLO I Ltd-TIA 2016-1A AR	1	63,000,000	63,002,331
57629*EG2	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		99,999,996	100,000,000	09/03/2019	09/03/2049	Interest Rate Swap			57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	99,999,996	100,000,000
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	125,000,000	74,999,997	81,211,566	01/08/2020	01/08/2050	Interest Rate Swap		6,211,566	57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	74,999,997	75,000,000
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,971,251	6,973,851	01/08/2020	01/08/2050	Interest Rate Swap			50188Q-AJ-0	LCM XVIII LP-LCM 19A AR	1	6,971,251	6,973,851
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,601,311	01/08/2020	01/08/2050	Interest Rate Swap			64130H-AN-1	Neuberger Berman Loan Ad-NEUB 2017-24A BR FLOATING	1	11,600,000	11,601,311
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	11,600,070	01/08/2020	01/08/2050	Interest Rate Swap			88434H-AG-8	THL Credit Wind River 20-WINDR 2018-2A B	1	11,600,000	11,600,070
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,750,000	11,660,594	01/08/2020	01/08/2050	Interest Rate Swap			50200F-AE-9	LOM 26 Ltd-SERIES 26A CLASS B	1	11,750,000	11,660,594
57629*EA5	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,520,414	13,702,576	01/08/2020	01/08/2050	Interest Rate Swap			92917N-AJ-7	Voya CLO 2019-1 Ltd-VOYA 2019-1A AR	1	12,520,414	13,702,576
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	110,000,000	115,649,497	01/08/2020	01/08/2032	Interest Rate Swap		5,649,057	85816W-AC-8	Steele Creek CLO 2014-1 -SERIES 14-1RA CLASS A	1	110,000,000	110,000,440
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		72,155,000	72,165,968	01/08/2020	01/08/2032	Interest Rate Swap			125550-AN-6	CIFC Funding 2020-I Ltd-CIFC 2020-1A A1R	1	72,155,000	72,165,968
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,670,226	33,010,692	01/08/2020	01/08/2032	Interest Rate Swap			40638T-AA-0	Halsey Point CLO Ltd-SERIES 20-2A CLASS A1	1	32,670,226	33,010,692
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,900,000	11,882,412	01/08/2020	01/08/2032	Interest Rate Swap			00190Y-BF-1	Ares XXVII CLO Ltd-ARES 2013-2A BR2	1	11,900,000	11,882,412
57629*EB3	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,621,025	24,936,450	01/08/2020	01/08/2032	Interest Rate Swap			05875H-AA-1	Ballyrock CLO 2018-1 Ltd	1	24,621,025	24,936,450
57629*EW7	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	206,000,000	211,228,872	01/08/2020	01/08/2035	Interest Rate Swap		5,228,872	12499F-MM-8	CCOF Onshore Co-Borrower Revolving Loan	1	206,000,000	206,000,000
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	21,485,904	28,096,948	01/08/2020	01/08/2040	Interest Rate Swap		4,538,521	06761M-AC-1	BIM 2018-1A B FLOATING COUPON 3.083750 MATURITY 20310115	1	21,485,904	23,558,427
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,850,000	13,763,756	01/08/2020	01/08/2040	Interest Rate Swap			05684R-AE-2	BCC 2021-2A B FLOATING COUPON MATURITY 20340716	1	13,850,000	13,763,756
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,750,000	11,719,427	01/08/2020	01/08/2040	Interest Rate Swap			55821A-AC-2	MDPK 2018-28A A2 FLOATING COUPON 1.463750 MATURITY 20300715	1	11,750,000	11,719,427

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,600,000	23,599,953	01/08/2020	01/08/2040	Interest Rate Swap				542798-AC-7	Long Point Park CLO Ltd-LNGPT 2017- 1A A1B	1	23,600,000	23,599,953
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,025,904	35,100,700	01/08/2020	01/08/2040	Interest Rate Swap				282523-AH-2	1828 CLO Ltd-GUGG4 2016-1A A1S1 Wind River CLO Ltd-WINDR 2021-3A A	1	35,025,904	35,100,700
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,000,000	20,976,186	01/08/2020	01/08/2040	Interest Rate Swap				97316D-AA-4	Babson CLO Ltd/Cayman Is-BABSN 2021-2A B	1	21,000,000	20,976,186
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,025,000	12,016,246	01/08/2020	01/08/2040	Interest Rate Swap				06762J-AC-7	Buttermilk Park CLO Ltd-BMILK 2018- 1A B1	1	12,025,000	12,016,246
57629*ED9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,400,000	12,387,216	01/08/2020	01/08/2040	Interest Rate Swap				124166-AE-9	Hofer Financial Services Senior Note Ser	1	12,400,000	12,387,216
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	400,000,000	74,770,000	81,215,811	02/11/2020	02/11/2050	Interest Rate Swap		3,232,421		A3158#-AC-3	TFP Equity REIT Operatin Gtd Senior Note	1	74,770,000	77,983,390
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		79,100,000	83,965,916	02/11/2020	02/11/2050	Interest Rate Swap				87278*-AD-4	AquaSure Finance Pty Ltd Gtd Senior Secu	1	79,100,000	83,965,916
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		57,050,000	60,497,760	02/11/2020	02/11/2050	Interest Rate Swap				Q0458*-AB-5	Johnson Matthey PLC Senior Note Ser	1	57,050,000	60,497,760
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,800,000	63,762,049	02/11/2020	02/11/2050	Interest Rate Swap				G5147*-AD-8	Safran Senior Note Ser	2	59,800,000	63,762,049
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		62,900,000	66,326,666	02/11/2020	02/11/2050	Interest Rate Swap				786584-A#-9	Australia Pacific Airpor Gtd Senior Note	2	62,900,000	66,326,666
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		62,800,000	69,030,011	02/11/2020	02/11/2050	Interest Rate Swap				Q0832*-AD-8	Anchorage Capital CLO 3-ANCHC 2014-3RA C	1	62,800,000	69,030,011
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,500,000	7,503,698	02/11/2020	02/11/2050	Interest Rate Swap				03330A-AE-2	AGL CLO Ltd-AGL 2021-10A B	1	7,500,000	7,503,698
57629*FA4	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,750,000	6,643,404	02/11/2020	02/11/2050	Interest Rate Swap				00119Y-AC-7	KREF Lending VII LLC - Term Loan Series 2021-9	1	6,750,000	6,643,404
57629*EH0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	25,000,000	17,000,000	16,769,920	02/20/2020	02/20/2050	Interest Rate Swap		(230,080)		50079#-MU-0	KKR CLO 28 LTD-KKR 28A A	1	17,000,000	17,000,000
57629*EH0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,904,232	8,295,410	02/20/2020	02/20/2050	Interest Rate Swap				48253W-AA-0	Navient Student Loan Tru-NAVSL 2021-1A B	1	7,904,232	8,295,410
57629*EH0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,000,000	2,012,937	02/20/2020	02/20/2050	Interest Rate Swap				63942N-AC-2	Barings Middle Market CL-BMM 2018- 1A A2	1	2,000,000	2,012,937
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	185,000,000	22,908,196	23,396,375	02/20/2020	02/20/2050	Interest Rate Swap		(1,659,829)		06761M-AB-3	Madison Park Funding XLV-MDPK 2020- 45A BR	1	22,908,196	25,056,204
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,500,000	5,499,978	02/20/2020	02/20/2050	Interest Rate Swap				55820B-AL-1	Goldentree Loan Managem-GLM 2019- 4A BR	1	5,500,000	5,499,978
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,000,000	15,000,345	02/20/2020	02/20/2050	Interest Rate Swap				38137Y-AS-0	1828 CLO Ltd-GUGG4 2016-1A A1JR CARLYLE US CLO 2018-3 LT-CGMS 2018- 3A A1B	1	15,000,000	15,000,345
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,500,000	11,472,918	02/20/2020	02/20/2050	Interest Rate Swap				282523-AM-1	Oak Hill Credit Partners-OAKC 2020- 5A B	1	11,500,000	11,472,918
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,000,376	02/20/2020	02/20/2050	Interest Rate Swap				14317R-AC-3	Neuberger Berman CLO XIV-NEUB 2013- 14A BR2	1	8,000,000	8,000,376
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,703,196	02/20/2020	02/20/2050	Interest Rate Swap				67113G-AG-2	Eaton Vance CLO 2018-1 L-EATON 2018-1A B	1	7,700,000	7,703,196
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,200,175	02/20/2020	02/20/2050	Interest Rate Swap				64129J-BG-4	KREF Lending VII LLC - Term Loan Series 2021-9	1	9,200,000	9,200,175
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,003,456	02/20/2020	02/20/2050	Interest Rate Swap				27831B-AE-3	BALLYROCK CLO 2018-1 LTD-SERIES 2018-1A CLASS A2	1	8,000,000	8,003,456
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,000,000	17,000,000	02/20/2020	02/20/2050	Interest Rate Swap				50079#-MU-0	Anchorage Capital CLO 7-ANCHC 2015-7A BR2 FLOATING	1	17,000,000	17,000,000
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,145,904	3,191,002	02/20/2020	02/20/2050	Interest Rate Swap				05875H-AC-7	RR Ltd-RRAM 2018-5A A2	1	3,145,904	3,191,002
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,936,744	9,950,876	02/20/2020	02/20/2050	Interest Rate Swap				03328T-BC-8	ALM Ltd/KY-SERIES 21-14A CLASS A2 Wind River CLO Ltd-WINDR 2021-1A B1	1	9,936,744	9,950,876
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,000,000	8,000,448	02/20/2020	02/20/2050	Interest Rate Swap				74979V-AE-3	Madison Park Funding XXI-MDPK 2018- 29A B	1	8,000,000	8,000,448
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	19,761,100	02/20/2020	02/20/2050	Interest Rate Swap				74980P-AC-7		1	20,000,000	19,761,100
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,532,502	02/20/2020	02/20/2050	Interest Rate Swap				97314H-AC-3		1	7,700,000	7,532,502
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,000,610	02/20/2020	02/20/2050	Interest Rate Swap				55820C-AG-0		1	10,000,000	10,000,610

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	7,001,197	02/20/2020	02/20/2050	Interest Rate Swap			501880-AL-5	LCM XVIII LP-LCM 19A BR	1	7,000,000	7,001,197
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,000,000	7,001,491	02/20/2020	02/20/2050	Interest Rate Swap			36248M-AL-1	GT Loan Financing I Ltd -SERIES 2013-1A CLASS BR	1	7,000,000	7,001,491
57629*EJ6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,100,000	10,036,017	02/20/2020	02/20/2050	Interest Rate Swap			83615P-AC-1	Sound Point Clo XXXI Ltd-SNDPT 2021-3A B	1	10,100,000	10,036,017
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	215,000,000	51,250,853	49,023,671	02/20/2020	02/20/2050	Interest Rate Swap		(2,227,182)	500798-MS-5	KREF Lending VII LLC - Term Loan Series 2019-7	1	51,250,853	51,250,853
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,300,000	24,299,927	02/20/2020	02/20/2050	Interest Rate Swap			70470M-AC-9	Peace Park CLO Ltd-POEPK 2021-1A A	1	24,300,000	24,299,927
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,000,000	21,687,952	02/20/2020	02/20/2050	Interest Rate Swap			97315T-AE-2	THL Credit Wind River 20-WINDR 2017-1A BR	1	22,000,000	21,687,952
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,250,000	21,238,993	02/20/2020	02/20/2050	Interest Rate Swap			87246M-AS-1	TICP CLO VI 2016-2 Ltd-TICP 2016-6A AR2	1	21,250,000	21,238,993
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,000,000	20,974,842	02/20/2020	02/20/2050	Interest Rate Swap			55821C-AC-8	Atrium IX-ATRM 9A BR2 GLM 2019-4A AJR FLOATING COUPON	1	21,000,000	20,974,842
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,000,000	24,000,888	02/20/2020	02/20/2050	Interest Rate Swap			38137Y-AQ-4	1.537820 MATURITY 20310424	1	24,000,000	24,000,888
57629*FC0	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	55,000,000	02/20/2020	02/20/2050	Interest Rate Swap			651234-MM-5	NCL II PE-D, LLC	1	55,000,000	55,000,000
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	51,500,000	46,406,152	02/25/2020	02/25/2050	Interest Rate Swap		(9,299,802)	65791#-AA-9	Manchester United Football Club, Ltd Senior Secu	1	51,500,000	55,705,954
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		59,999,998	60,000,000	02/25/2020	02/25/2050	Interest Rate Swap			57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	59,999,998	60,000,000
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,500,000	47,852,851	02/25/2020	02/25/2050	Interest Rate Swap			15678#-AJ-4	Cerner Corporation Senior Note Ser	1	45,500,000	47,852,851
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,500,000	40,656,165	02/25/2020	02/25/2050	Interest Rate Swap			Q8396#-AK-7	Victoria Power Networks Gtd Senior Note	1	39,500,000	40,656,165
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,241,113	34,879,027	02/25/2020	02/25/2050	Interest Rate Swap			04351L-AA-8	ASCENSION HEALTH-UNSECURED BOND Iowa Interstate Railroad Senior	1	24,241,113	34,879,027
57629*EV9	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,267,709	35,243,566	02/25/2020	02/25/2050	Interest Rate Swap			46247#-AA-2	Secured Fonterra Co-operative Gr Senior	1	32,267,709	35,243,566
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	37,900,000	33,550,460	02/25/2020	02/25/2050	Interest Rate Swap		(8,606,165)	Q3920#-AL-3	Unsecured Notes South Jersey Gas Co. First Mortgage	1	37,900,000	42,156,625
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		42,700,000	45,980,513	02/25/2020	02/25/2050	Interest Rate Swap			838515-G*-9	DNP Select Income Fund I Senior	1	42,700,000	45,980,513
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,200,000	30,822,633	02/25/2020	02/25/2050	Interest Rate Swap			23325P-A*-5	Secured Envestra Victoria Pty Lt Senior	1	30,200,000	30,822,633
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,150,000	44,041,979	02/25/2020	02/25/2050	Interest Rate Swap			Q3535#-AD-8	Secured RREEF AMERICA REIT II INC SR UNSECD	1	36,150,000	44,041,979
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		39,000,000	41,756,130	02/25/2020	02/25/2050	Interest Rate Swap			74986#-AV-3	NT SER D Fonterra Co-operative Gr Senior	1	39,000,000	41,756,130
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,250,000	40,455,954	02/25/2020	02/25/2050	Interest Rate Swap			Q3920#-AG-4	Note	1	38,250,000	40,455,954
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,985,114	30,644,863	02/25/2020	02/25/2050	Interest Rate Swap			873050-CM-1	TTX CO-SENIOR UNSECURED KEYCORP STUDENT LOAN TRU-SERIES	1	24,985,114	30,644,863
57629*EZO	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,078,849	956,568	02/25/2020	02/25/2050	Interest Rate Swap			493268-BW-5	2004-A CLASS 1B Mirvac Group Finance Ltd Senior	1	1,078,849	956,568
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	38,900,000	26,659,489	02/26/2020	02/26/2050	Interest Rate Swap		(15,431,711)	Q8235#-AN-2	Note RS 2018 Private, LLC Senior Secured	1	38,900,000	42,091,200
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,145,000	37,516,725	02/26/2020	02/26/2050	Interest Rate Swap			74979U-AA-3	BMW U.S. Capital LLC Gtd Senior Note	1	35,145,000	37,516,725
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,600,000	37,286,728	02/26/2020	02/26/2050	Interest Rate Swap			05565E-G8-8	DEXUS Funds Management L Senior Note Ser	1	35,600,000	37,286,728
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		38,150,000	41,529,213	02/26/2020	02/26/2050	Interest Rate Swap			Q3189#-AC-3	Note Ser A&E Television Networks, Senior	1	38,150,000	41,529,213
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		37,600,000	38,226,378	02/26/2020	02/26/2050	Interest Rate Swap			00003#-AB-9	Note Ser	1	37,600,000	38,226,378
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,100,000	33,249,445	02/26/2020	02/26/2050	Interest Rate Swap			74264*-AC-0	PRISA LHC Senior Note Ser	1	31,100,000	33,249,445
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		32,900,000	33,629,196	02/26/2020	02/26/2050	Interest Rate Swap			48661E-B*-8	KAYNE ANDERSON MID/ENERGY-SR UNSECD SER D	1	32,900,000	33,629,196

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,000,000	15,967,136	02/26/2020	02/26/2050	Interest Rate Swap			65023P-AQ-3	Newark BSL CLO 2 Ltd-NBCLO 2017-1A A2R	1	16,000,000	15,967,136
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,850,000	9,850,059	02/26/2020	02/26/2050	Interest Rate Swap			48254H-AC-8	KKR CLO 32 Ltd-KKR 32A B	1	9,850,000	9,850,059
57629*FD8	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,300,000	8,299,967	02/26/2020	02/26/2050	Interest Rate Swap			29002Q-AC-3	Elmwood CLO VII Ltd-ELMW7 2020-4A B	1	8,300,000	8,299,967
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	50,000,000	5,340,356	06/15/2020	06/15/2050	Interest Rate Swap	(44,677,594)		143133-AA-4	CGMS 2021-6A A1 FLOATING COUPON MATURITY 20340715	1	50,000,000	50,017,950
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	50,035,850	06/15/2020	06/15/2050	Interest Rate Swap			82670Q-AA-7	Signal Peak CLO 9 Ltd-SPEAK 2021-9A A1	1	50,000,000	50,035,850
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,100,000	13,099,961	06/15/2020	06/15/2050	Interest Rate Swap			03766G-AQ-5	Apidos CLO XXVI-APID 2017-26A A2R DCLC 2021-1A A1A FLOATING COUPON	1	13,100,000	13,099,961
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		45,875,000	45,907,617	06/15/2020	06/15/2050	Interest Rate Swap			25255D-AA-8	MATURITY 20360715	1	45,875,000	45,907,617
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,600,000	13,561,471	06/15/2020	06/15/2050	Interest Rate Swap			97316L-AC-2	WINDR 2017-3A BR FLOATING COUPON MATURITY 20350415	1	13,600,000	13,561,471
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,525,000	11,535,545	06/15/2020	06/15/2050	Interest Rate Swap			48252U-AJ-6	KKR 25 BR FLOATING COUPON 1.929960 MATURITY 20340715	1	11,525,000	11,535,545
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	11,005,621	06/15/2020	06/15/2050	Interest Rate Swap			06759J-AS-7	BABSN 2019-1A BR FLOATING COUPON 1.926430 MATURITY 20360415	1	11,000,000	11,005,621
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,175,408	06/15/2020	06/15/2050	Interest Rate Swap			39809G-AC-9	GREYWOLF CLO VI Ltd-GWOLF 2018-1A A2	1	9,200,000	9,175,408
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,650,000	8,617,848	06/15/2020	06/15/2050	Interest Rate Swap			67400F-AE-1	OAKTREE CLO 2018-1 LTD SR SEC2 NT CL A-2	1	8,650,000	8,617,848
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,033,047	8,296,713	06/15/2020	06/15/2050	Interest Rate Swap			124166-AA-7	Buttermilk Park CLO Ltd-BMILK 2018-1A A1	1	8,033,047	8,296,713
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,000,000	10,968,771	06/15/2020	06/15/2050	Interest Rate Swap			13875M-AC-0	CANYC 2021-3A B FLOATING COUPON MATURITY 20340715	1	11,000,000	10,968,771
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,200,000	7,200,886	06/15/2020	06/15/2050	Interest Rate Swap			06759M-AE-1	Babson CLO Ltd 2016-1-BABSN 2016-1A A2R	1	7,200,000	7,200,886
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,900,000	6,900,704	06/15/2020	06/15/2050	Interest Rate Swap			67110U-AN-9	OHA Loan Funding 2016-1 -OHALF 2016-1A B1R	1	6,900,000	6,900,704
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,699,980	06/15/2020	06/15/2050	Interest Rate Swap			87249C-AC-5	TICP CLO X LTD-SERIES 18-10A CLASS B	1	6,700,000	6,699,980
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,600,000	6,602,284	06/15/2020	06/15/2050	Interest Rate Swap			38137W-AE-5	Goldentree Loan Managem-SERIES 19-6A CLASS B1	1	6,600,000	6,602,284
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,963,304	6,204,898	06/15/2020	06/15/2050	Interest Rate Swap			87250R-AA-2	TICP CLO XV Ltd-TICP 2020-15A A Elmwood CLO IV Ltd-ELMW4 2020-1A B	1	5,963,304	6,204,898
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,800,000	5,804,019	06/15/2020	06/15/2050	Interest Rate Swap			29002G-AC-5		1	5,800,000	5,804,019
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,750,000	5,750,242	06/15/2020	06/15/2050	Interest Rate Swap			77340G-AL-5	Rockford Tower CLO 2017-2 Ltd	1	5,750,000	5,750,242
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,650,000	5,585,737	06/15/2020	06/15/2050	Interest Rate Swap			50200F-AG-4	LCM 26 Ltd-SERIES 26A CLASS C	1	5,650,000	5,585,737
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,250,000	5,250,929	06/15/2020	06/15/2050	Interest Rate Swap			12555X-AG-6	CIFC Funding Ltd-CIFC 2019-6A C	1	5,250,000	5,250,929
57629*FF3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,900,000	10,900,000	06/15/2020	06/15/2050	Interest Rate Swap			87241F-AA-0	TOW Direct Lending Structured Solutions 2019 LLC - Class A Note	1	10,900,000	10,900,000
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	300,000,000	56,449,344	6,403,276	06/29/2020	06/29/2050	Interest Rate Swap	(55,809,160)		149123-CJ-8	Caterpillar Inc-SENIOR UNSECURED	1	56,449,344	62,212,436
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,527,965	51,830,359	06/29/2020	06/29/2050	Interest Rate Swap			91324P-EA-6	UnitedHealth Group Inc-SENIOR UNSECURED	1	50,527,965	51,830,359
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		46,542,408	49,227,532	06/29/2020	06/29/2050	Interest Rate Swap			143499-AB-7	Carnegie Institution of -UNSECURED	1	46,542,408	49,227,532
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,143,037	45,734,097	06/29/2020	06/29/2050	Interest Rate Swap			355611-AA-2	Fred Hutchinson Cancer R-UNSECURED	1	41,143,037	45,734,097
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,893,300	13,048,571	06/29/2020	06/29/2050	Interest Rate Swap			29157T-AD-8	Emory University-UNSECURED	1	12,893,300	13,048,571
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		90,872,727	91,172,607	06/29/2020	06/29/2050	Interest Rate Swap			72403Z-NR-1	PIONEERS GATE LLC 2020-2 CERB	1	90,872,727	91,172,607
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		50,000,000	50,545,000	06/29/2020	06/29/2050	Interest Rate Swap			72403Z-MZ-4	PIONEERS GATE LLC 2017-7 FNBM	1	50,000,000	50,545,000

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	6,606,890	06/29/2020	06/29/2050	Interest Rate Swap				14315D-AC-6	Carlyle Global Market St-CGMS 2021-3SA A2	1	6,700,000	6,606,890
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,904,146	26,837,264	06/29/2020	06/29/2050	Interest Rate Swap				26442T-AH-0	Duke University-SECURED	1	25,904,146	26,837,264
57629*FE6	Evergreen Basket of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,635,263	27,370,521	06/29/2020	06/29/2050	Interest Rate Swap				06654D-AC-1	Banner Health-UNSECURED	1	25,635,263	27,370,521
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	161,034,783	16,600,000	22,110,280	07/13/2021	07/13/2022	TRS Bond Index		3,900,512		12656*-AD-4	CSLB Holdings, Inc. Gtd Senior Note	1	16,600,000	18,209,768
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,500,000	17,247,104	07/13/2021	07/13/2022	TRS Bond Index				12656*-AC-6	CSLB Holdings, Inc. Gtd Senior Note	1	16,500,000	17,247,104
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,500,000	17,849,106	07/13/2021	07/13/2022	TRS Bond Index				091948-AC-1	Transpower New Zealand L Senior Note Ser	1	16,500,000	17,849,106
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		16,450,000	17,387,305	07/13/2021	07/13/2022	TRS Bond Index				674003-A*-9	Oaktree Capital Managem Senior Note Ser	1	16,450,000	17,387,305
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,465,625	9,568,488	07/13/2021	07/13/2022	TRS Bond Index				02379*-AA-7	American Airlines Group Senior Secured Notes Class A	1	9,465,625	9,568,488
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		37,500,000	39,325,695	07/13/2021	07/13/2022	TRS Bond Index				91412N-AK-6	UNIVERSITY OF CHICAGO-UNSECURED BOND	1	37,500,000	39,325,695
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,250,000	14,886,719	07/13/2021	07/13/2022	TRS Bond Index				486606-K#-2	KAYNE ANDERSON MLP INVT CO-SR UNSECD SER KK	1	14,250,000	14,886,719
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		15,000,000	15,691,530	07/13/2021	07/13/2022	TRS Bond Index				05616B-A*-1	BABSON CAPITAL PARTN INVS TR-SR CONW NT	1	15,000,000	15,691,530
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,500,000	14,137,700	07/13/2021	07/13/2022	TRS Bond Index				74170*-AN-9	Prime Property Fund LLC Senior Note Ser	1	13,500,000	14,137,700
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		11,900,000	12,567,519	07/13/2021	07/13/2022	TRS Bond Index				73020*-AK-9	PNG Companies LLC Senior Secured ...	1	11,900,000	12,567,519
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,730,000	15,133,316	07/13/2021	07/13/2022	TRS Bond Index				05237*-AH-7	Austin Powder Holdings C Senior Note Ser	1	13,730,000	15,133,316
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,325,000	15,527,899	07/13/2021	07/13/2022	TRS Bond Index				674003-A#-7	Oaktree Capital Managem Senior Note Ser	1	14,325,000	15,527,899
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,175,000	7,175,890	07/13/2021	07/13/2022	TRS Bond Index				033291-AN-5	Anchorage Capital Clo 13-ANCHC 2019-13A B1R	1	7,175,000	7,175,890
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	23,000,000	(3,897,319)	09/02/2020	09/02/2050	Interest Rate Swap		(28,117,331)		41242*-AY-8	Hardwood Funding LLC Senior Secured	1	23,000,000	24,220,012
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		22,190,000	24,090,751	09/02/2020	09/02/2050	Interest Rate Swap				07795#-AA-0	QIC Finance (Shopping Ce Gtd Senior Note	1	22,190,000	24,090,751
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	7,645,361	09/02/2020	09/02/2050	Interest Rate Swap				949723-AC-4	Wellman Park CLO Ltd-SERIES 21-1A CLASS B	1	7,700,000	7,645,361
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,036,447	11,024,561	09/02/2020	09/02/2050	Interest Rate Swap				02376*-AA-0	American Airlines Group Senior Secured	1	11,036,447	11,024,561
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,600,000	23,560,416	09/02/2020	09/02/2050	Interest Rate Swap				05237*-AF-1	Austin Powder Holdings C Senior Note Ser	1	21,600,000	23,560,416
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,600,000	19,824,754	09/02/2020	09/02/2050	Interest Rate Swap				62044#-BA-2	Compass Group PLC Senior Note Ser	1	18,600,000	19,824,754
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,728,285	18,953,292	09/02/2020	09/02/2050	Interest Rate Swap				929287-ZZ-6	WINGS Aviation 62696 USD Tranche A-1 Ln	1	17,728,285	18,953,292
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,400,000	21,096,782	09/02/2020	09/02/2050	Interest Rate Swap				12656*-AK-8	CSLB Holdings, Inc. Gtd Senior Note	1	20,400,000	21,096,782
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,100,000	22,035,405	09/02/2020	09/02/2050	Interest Rate Swap				69850#-AC-7	YORKSHIRE WTR SERV BRADFORD-GTD SR SEC CL A	1	21,100,000	22,035,405
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,950,000	8,941,623	09/02/2020	09/02/2050	Interest Rate Swap				50184N-AP-7	LDM LTD PARTNERSHIP-SERIES 15A CLASS CR	1	8,950,000	8,941,623
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		28,002,463	34,353,779	09/02/2020	09/02/2050	Interest Rate Swap				141781-BJ-2	Cargill Inc-SENIOR UNSECURED	1	28,002,463	34,353,779
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	8,366,142	09/02/2020	09/02/2050	Interest Rate Swap				38136F-BJ-1	Goldentree Loan Managem-GLM 2017-1A B1R2	1	8,500,000	8,366,142
57629*FJ5	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,550,000	7,545,870	09/02/2020	09/02/2050	Interest Rate Swap				92917W-AY-4	Voya CLO 2018-4 Ltd-SERIES 18-4A CLASS BR	1	7,550,000	7,545,870
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	18,750,000	(7,470,027)	09/02/2020	09/02/2050	Interest Rate Swap		(27,953,090)		74170*-AC-3	Prime Property Fund LLC Senior Note Ser	1	18,750,000	20,483,063
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,100,000	20,891,538	09/02/2020	09/02/2050	Interest Rate Swap				56081#-CA-6	Major League Baseball Tr Series 44 Term Note	1	20,100,000	20,891,538

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		16,797,871	17,152,558	09/02/2020	09/02/2050	Interest Rate Swap				47715*-AA-5	JetBlue Airways Corporat Pass Thru Certi	1	16,797,871	17,152,558
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,450,000	21,376,630	09/02/2020	09/02/2050	Interest Rate Swap				G2044#-AY-1	Compass Group PLC Senior Note Ser	1	20,450,000	21,376,630
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,700,000	20,366,675	09/02/2020	09/02/2050	Interest Rate Swap				41242*-AU-6	Hardwood Funding LLC Senior Note Ser	1	18,700,000	20,366,675
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		19,315,000	19,851,165	09/02/2020	09/02/2050	Interest Rate Swap				36198*-AA-4	GI Manager L.P. Senior Secured Notes	1	19,315,000	19,851,165
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		17,700,000	18,413,434	09/02/2020	09/02/2050	Interest Rate Swap				41242*-AX-0	Hardwood Funding LLC Senior Secured	1	17,700,000	18,413,434
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,213,229	9,358,176	09/02/2020	09/02/2050	Interest Rate Swap				00114*-AA-1	AEP TRANSMISSION CO LLC SR NT SER A	1	9,213,229	9,358,176
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		15,900,000	17,033,384	09/02/2020	09/02/2050	Interest Rate Swap				68233J-A#-3	Oncor Electric Delivery SR SECD NT SER B	1	15,900,000	17,033,384
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,488,057	43,798,192	09/02/2020	09/02/2050	Interest Rate Swap				931142-CS-0	WAL-MART STORES INC-SENIOR NOTE	1	31,488,057	43,798,192
57629*FLO	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		27,700,000	27,443,360	09/02/2020	09/02/2050	Interest Rate Swap				38176D-AJ-8	Golub Capital Partners C-GOCAP 2015-26A A2R	1	27,700,000	27,443,360
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	200,000,000	24,000,000	(2,791,086)	09/02/2020	09/02/2050	Interest Rate Swap		(28,258,110)		00114*-AR-4	AEP Transmission Company Senior Note Ser	1	24,000,000	25,467,024
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,000,000	12,000,000	09/02/2020	09/02/2050	Interest Rate Swap				89532Z-MM-1	TREZ CAPITAL MANHATTAN BRIDGE LP - Secured Term Loan Facility - Series 2021-1	1	12,000,000	12,000,000
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,700,000	28,553,368	09/02/2020	09/02/2050	Interest Rate Swap				G4622#-AB-5	Howard De Walden Estates Gtd Senior Note	1	25,700,000	28,553,368
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,750,000	25,994,579	09/02/2020	09/02/2050	Interest Rate Swap				G0646#-AN-9	Associated British Foods Senior Note Ser	1	24,750,000	25,994,579
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		23,900,000	25,852,534	09/02/2020	09/02/2050	Interest Rate Swap				57169*-AU-1	Mars, Inc. Senior Note Ser	1	23,900,000	25,852,534
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,750,000	23,578,196	09/02/2020	09/02/2050	Interest Rate Swap				06235#-AF-9	Mirvac Group Finance Ltd Gtd Senior Note	1	21,750,000	23,578,196
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,150,000	21,097,876	09/02/2020	09/02/2050	Interest Rate Swap				25763#-AE-0	Donaldson Co Inc Senior Note Ser	1	20,150,000	21,097,876
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		54,999,998	55,000,000	09/02/2020	09/02/2050	Interest Rate Swap				57542Z-A#-8	MM Investment Holding Revolver Fixed Line	2	54,999,998	55,000,000
57629*FMB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,000,000	12,987,078	09/02/2020	09/02/2050	Interest Rate Swap				48250W-AG-0	KKR CLO 14 Ltd-KKR 14 AR	1	13,000,000	12,987,078
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	10,000,000	(10,806,441)	09/02/2020	09/02/2050	Interest Rate Swap		(20,806,441)		50079#-MV-8	KREF Lending VII LLC - Term Loan Series 2021-10	1	10,000,000	10,000,000
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	9,077,023	09/02/2020	09/02/2050	Interest Rate Swap				74170*-AR-0	Prime Property Fund LLC Senior Note Ser	1	8,500,000	9,077,023
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,200,000	9,697,196	09/02/2020	09/02/2050	Interest Rate Swap				G1108#-AF-5	British Land Company PLC Senior Note Ser	1	9,200,000	9,697,196
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,500,000	9,050,800	09/02/2020	09/02/2050	Interest Rate Swap				41242*-BF-8	Hardwood Funding LLC Senior Secured	1	8,500,000	9,050,800
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,200,000	8,692,828	09/02/2020	09/02/2050	Interest Rate Swap				479142-E#-6	Johnson Matthey PLC Series A Senior Notes	1	8,200,000	8,692,828
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,750,000	9,051,796	09/02/2020	09/02/2050	Interest Rate Swap				151515-YY-3	Bridge Investment Group Senior Secured Notes	1	8,750,000	9,051,796
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,700,000	8,301,478	09/02/2020	09/02/2050	Interest Rate Swap				838515-F#-8	South Jersey Gas Co. Medium Term Not	1	7,700,000	8,301,478
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,386,855	7,590,961	09/02/2020	09/02/2050	Interest Rate Swap				184692-B#-9	Clearbridge Energy MLP F Senior Secured	1	7,386,855	7,590,961
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		7,386,855	7,733,837	09/02/2020	09/02/2050	Interest Rate Swap				184692-B#-7	Clearbridge Energy MLP Fd Inc-Senior Secured	1	7,386,855	7,733,837
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,555,714	5,660,428	09/02/2020	09/02/2050	Interest Rate Swap				05389L-AK-9	Avolon Aerospace Leasing Secured Note B7	1	5,555,714	5,660,428
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,503,752	6,942,150	09/02/2020	09/02/2050	Interest Rate Swap				C1466#-AA-6	OPR Leasing Ltd Senior Secured	2	6,503,752	6,942,150
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,950,000	7,718,823	09/02/2020	09/02/2050	Interest Rate Swap				92203#-AR-9	Yanguard Group, Inc. Senior Notes Series D	1	6,950,000	7,718,823
57629*FNB	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,600,000	3,623,839	09/02/2020	09/02/2050	Interest Rate Swap				92203#-AQ-1	Yanguard Group, Inc. Senior Notes Series C	1	3,600,000	3,623,839

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Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*FN6	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,214,196	5,324,940	09/02/2020	09/02/2050	Interest Rate Swap				05389L-AH-6	Avolon Aerospace Leasing Secured Note B7	1	5,214,196	5,324,940
57629*FN6	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		58,737,364	67,417,022	09/02/2020	09/02/2050	Interest Rate Swap				055451-AV-0	BHP Billiton Finance USA-SR UNSECURED	1	58,737,364	67,417,022
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	13,864,000	(6,649,241)	09/02/2020	09/02/2050	Interest Rate Swap		(20,331,313)		78403D-AR-1	SBA Tower Trust-ASSET BACKED RREEF America REIT II, I Senior	1	13,864,000	13,682,072
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,700,000	7,067,287	09/02/2020	09/02/2050	Interest Rate Swap				749868-AN-1	Note Ser	1	6,700,000	7,067,287
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,066,248	5,169,731	09/02/2020	09/02/2050	Interest Rate Swap				05389L-AA-1	Avolon Aerospace Leasing Secured Note A3	1	5,066,248	5,169,731
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,440,000	6,792,699	09/02/2020	09/02/2050	Interest Rate Swap				74170*-AD-1	Prime Property Fund LLC Senior Note Ser	1	6,440,000	6,792,699
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,036,978	5,145,681	09/02/2020	09/02/2050	Interest Rate Swap				05389L-AD-5	Avolon Aerospace Leasing Secured Note A3	1	5,036,978	5,145,681
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,044,745	6,362,970	09/02/2020	09/02/2050	Interest Rate Swap				05400F-AE-1	Avolon Aerospace Funding Senior Secured	1	6,044,745	6,362,970
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,023,881	6,361,297	09/02/2020	09/02/2050	Interest Rate Swap				05400F-AG-6	Avolon Aerospace Funding Senior Secured	1	6,023,881	6,361,297
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,500,809	6,831,456	09/02/2020	09/02/2050	Interest Rate Swap				184692-B*-1	Clearbridge Energy MLP Fd Inc-Senior Secured	1	6,500,809	6,831,456
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,630,823	5,930,704	09/02/2020	09/02/2050	Interest Rate Swap				05400F-AC-5	Avolon Aerospace Funding Senior Secured	1	5,630,823	5,930,704
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,200,000	6,567,818	09/02/2020	09/02/2050	Interest Rate Swap				393154-L8-6	Green Mountain Power Cor First Mtg Bond	1	5,200,000	6,567,818
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,079,677	10,068,507	09/02/2020	09/02/2050	Interest Rate Swap				110122-CL-0	Bristol-Myers Squibb Co-SENIOR UNSECURED	1	10,079,677	10,068,507
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		6,648,996	6,663,140	09/02/2020	09/02/2050	Interest Rate Swap				04685A-2E-0	ATHENE GLOBAL FUNDING-SECURED	1	6,648,996	6,663,140
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,637,185	43,188,617	09/02/2020	09/02/2050	Interest Rate Swap				45866F-AH-7	Intercontinental Exchange-SENIOR UNSECURED	1	36,637,185	43,188,617
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		20,000,000	20,001,920	09/02/2020	09/02/2050	Interest Rate Swap				55819D-AE-6	Madison Park Funding XXX-MDPK 2018-31A A2A	1	20,000,000	20,001,920
57629*FP1	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		29,999,999	30,000,000	09/02/2020	09/02/2050	Interest Rate Swap				57542Z-A9-8	MM Investment Holding Revolver Fixed Line	2	29,999,999	30,000,000
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	6,500,000	(12,960,344)	09/02/2020	09/02/2050	Interest Rate Swap		(20,384,105)		90312*-AC-8	UNS Gas, Inc. Gtd Senior Note	1	6,500,000	7,423,761
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,042,699	2,040,453	09/02/2020	09/02/2050	Interest Rate Swap				46625H-JE-1	JPMorgan Chase & Co-SR UNSECURED	1	2,042,699	2,040,453
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,743,343	5,314,171	09/02/2020	09/02/2050	Interest Rate Swap				63080F-AA-5	NARA Caves Lease Trust Lease Backed Ce	1	4,743,343	5,314,171
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,400,000	5,878,564	09/02/2020	09/02/2050	Interest Rate Swap				479142-E#-4	Johnson Matthey PLC Series B Senior Notes	1	5,400,000	5,878,564
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,675,754	4,900,012	09/02/2020	09/02/2050	Interest Rate Swap				05400F-AA-9	Avolon Aerospace Funding Senior Secured	1	4,675,754	4,900,012
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,091,433	8,104,550	09/02/2020	09/02/2050	Interest Rate Swap				064159-SH-0	Bank of Nova Scotia/The-SENIOR UNSECURED	1	8,091,433	8,104,550
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,000,000	26,000,000	09/02/2020	09/02/2050	Interest Rate Swap				30300Z-MM-5	FS CREIT FINANCE MM-1 LLC - Secured Term Loan Facility	1	26,000,000	26,000,000
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		839,545	883,358	09/02/2020	09/02/2050	Interest Rate Swap				05577@-AN-0	BTMU Capital Corp. Equipment Note	1	839,545	883,358
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		808,391	819,090	09/02/2020	09/02/2050	Interest Rate Swap				709068-C*-9	Pennsylvania Power Co. First Mtg Serie	2	808,391	819,090
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,986,029	19,594,714	09/02/2020	09/02/2050	Interest Rate Swap				06761T-AG-7	BIM 2019-1A B FLOATING COUPON 3.975000 MATURITY 20311015	1	18,986,029	19,594,714
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,095,238	4,996,027	09/02/2020	09/02/2050	Interest Rate Swap				589331-AD-9	MERCK SHARP & DOHME CORP-DEBENTURE	1	4,095,238	4,996,027
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		928,671	996,621	09/02/2020	09/02/2050	Interest Rate Swap				05348E-AII-9	AVALONBAY COMMUNITIES IN-SR UNSECURED	1	928,671	996,621
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		4,500,000	4,912,862	09/02/2020	09/02/2050	Interest Rate Swap				74264*-AD-8	PRISA LHC LLC-SENIOR NOTE SER B	1	4,500,000	4,912,862
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,000,000	5,071,310	09/02/2020	09/02/2050	Interest Rate Swap				46513A-NC-0	ISRAEL STATE JUBILEE ISSUE BD 7TH SER	1	5,000,000	5,071,310

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 Number	2 Description	3 NAIC Designation or Other Description	4 Notional Amount	5 Book/Adjusted Carrying Value	6 Fair Value	7 Effective Date	8 Maturity Date	Derivative Instrument(s) Open			Cash Instrument(s) Held					
								9 Description	10 Book/Adjusted Carrying Value	11 Fair Value	12 CUSIP	13 Description	14 NAIC Designation or Other Description	15 Book/Adjusted Carrying Value	16 Fair Value	
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		5,204,017	5,355,414	09/02/2020	09/02/2050	Interest Rate Swap				89236T-DR-3	Toyota Motor Credit Corp-SENIOR UNSECURED	1	5,204,017	5,355,414
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,750,000	4,127,468	09/02/2020	09/02/2050	Interest Rate Swap				018522-D8-8	ALLETE Inc. First Mortgage	1	3,750,000	4,127,468
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,870,527	4,074,771	09/02/2020	09/02/2050	Interest Rate Swap				18469P-A#-7	Clearbridge Energy MLP Op Fd Inc-Senior Secured	1	3,870,527	4,074,771
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,500,000	9,354,289	09/02/2020	09/02/2050	Interest Rate Swap				74980X-AC-0	ALM Ltd/KY-RRAM 2021-15A A2	1	9,500,000	9,354,289
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,767,648	3,979,054	09/02/2020	09/02/2050	Interest Rate Swap				18469Q-A#-5	Clearbridge Energy MLP Fd Inc-Senior Secured	1	3,767,648	3,979,054
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,250,000	9,138,343	09/02/2020	09/02/2050	Interest Rate Swap				64131T-AS-3	Neuberger Berman CLO XVI-SERIES 2017 CALSS 16SA	1	9,250,000	9,138,343
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		3,007,592	3,073,797	09/02/2020	09/02/2050	Interest Rate Swap				486606-J8-6	Kayne Anderson MLP Inves Senior Note Ser	1	3,007,592	3,073,797
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,250,000	2,298,150	09/02/2020	09/02/2050	Interest Rate Swap				84519#-AF-1	Southwest Power Pool, In Senior Note Ser	1	2,250,000	2,298,150
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,180,044	1,176,725	09/02/2020	09/02/2050	Interest Rate Swap				247358-LL-6	EAIV Delta MSN 15176	1	1,180,044	1,176,725
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,101,256	1,098,158	09/02/2020	09/02/2050	Interest Rate Swap				247358-VV-3	EAIV Delta MSN 15170	1	1,101,256	1,098,158
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		898,456	922,756	09/02/2020	09/02/2050	Interest Rate Swap				89838#-AA-5	Dartmouth College Senior Secured	1	898,456	922,756
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		1,960,596	2,015,807	09/02/2020	09/02/2050	Interest Rate Swap				18469Q-A8-7	Clearbridge Energy MLP TR Fd Inc-Senior Secured	1	1,960,596	2,015,807
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		25,244,969	26,157,577	09/02/2020	09/02/2050	Interest Rate Swap				68233J-BB-9	ONCOR ELECTRIC DELIVERY -FIRST LIEN	1	25,244,969	26,157,577
57629*F09	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		2,450,000	2,442,356	09/02/2020	09/02/2050	Interest Rate Swap				04018X-AG-4	ARES CLO-ARES 2021-ALFA C Invesco CMI Investments MM, LLC - Senior Secured Notes - Term Loan Series 2021-4	1	2,450,000	2,442,356
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	300,000,000	126,000,000	61,507,220	07/14/2020	07/14/2050	Interest Rate Swap		(64,492,780)		46143#-MP-9	ACRES Commercial Mortgage LLC - Term Loan	1	126,000,000	126,000,000
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		55,000,000	55,000,000	07/14/2020	07/14/2050	Interest Rate Swap				004901-MM-3	KKR Wolverine I Ltd Class A Senior	1	55,000,000	55,000,000
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		18,015,284	18,486,690	07/14/2020	07/14/2050	Interest Rate Swap				65284F-AA-3	Deere & Co-BOND	1	18,015,284	18,486,690
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,965,767	31,843,698	07/14/2020	07/14/2050	Interest Rate Swap				244199-AW-5	AUST & NZ BANKING GROUP-SUBORDINATED NOTE	1	24,965,767	31,843,698
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		21,465,000	37,496,573	07/14/2020	07/14/2050	Interest Rate Swap				ZZ2066-36-8	TTX CO-UNSECURED NOTE	1	21,465,000	37,496,573
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		41,872,969	55,919,739	07/14/2020	07/14/2050	Interest Rate Swap				87305Q-CB-5	MICROSOFT CORP-SENIOR UNSECURED	1	41,872,969	55,919,739
57629*FT3	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		36,113,573	49,808,006	07/14/2020	07/14/2050	Interest Rate Swap				594918-CB-8	North Shore Gas Co. First Mtg Bond	1	36,113,573	49,808,006
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	150,000,000	13,724,208	(18,052,326)	07/14/2020	07/14/2050	Interest Rate Swap		(32,930,126)		662325-B8-7	British Land Company PLC Senior Note Ser	1	13,724,208	14,877,800
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,300,000	14,986,999	07/14/2020	07/14/2050	Interest Rate Swap				G1108#-AG-3	Piedmont Natural Gas Co. Senior Note Ser	1	13,300,000	14,986,999
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		12,400,000	13,193,786	07/14/2020	07/14/2050	Interest Rate Swap				720186-F*-1	Hardwood Funding LLC Senior Note Ser	2	12,400,000	13,193,786
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,600,000	12,219,069	07/14/2020	07/14/2050	Interest Rate Swap				41242*-AT-9	Kayne Anderson Midstream SER H SR UNSEC NT	1	11,600,000	12,219,069
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,042,308	11,384,465	07/14/2020	07/14/2050	Interest Rate Swap				48661E-C8-5	Kayne Anderson Midstream SER I SR UNSEC NT	1	11,042,308	11,384,465
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,534,615	11,057,322	07/14/2020	07/14/2050	Interest Rate Swap				48661E-C#-3	Bridge Investment Group Senior Secured Notes	1	10,534,615	11,057,322
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		11,250,000	11,576,250	07/14/2020	07/14/2050	Interest Rate Swap				151515-XX-6	Prime Property Fund LLC Senior Note Ser	1	11,250,000	11,576,250
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		9,925,000	10,736,339	07/14/2020	07/14/2050	Interest Rate Swap				74170*-AE-9	Mars, Inc. Senior Note Ser	1	9,925,000	10,736,339
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,472,940	07/14/2020	07/14/2050	Interest Rate Swap				57169*-AT-4	Aberdeen Asia-Pacific In Senior Secured	1	10,000,000	10,472,940
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		10,000,000	10,298,530	07/14/2020	07/14/2050	Interest Rate Swap				003009-A8-6	Aberdeen Asia-Pacific In Senior Secured	1	10,000,000	10,298,530

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SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions								
1 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*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		8,600,000	9,183,278	07/14/2020	07/14/2050	Interest Rate Swap				05237*-AG-9	Austin Powder Holdings C Senior Note Ser	1	8,600,000	9,183,278
57629*FU0	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		54,999,998	55,000,000	07/14/2020	07/14/2050	Interest Rate Swap				57542Z-AG-8	MM Investment Holding Revolver Fixed Line	2	54,999,998	55,000,000
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1	250,000,000	104,585,366	69,673,333	09/02/2020	09/02/2050	Interest Rate Swap		(34,912,033)		11702@-AA-4	Brunswick Asset Financing LLC - Term A Loan	1	104,585,366	104,585,366
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		31,750,000	32,243,427	09/02/2020	09/02/2050	Interest Rate Swap				Q3629#-AG-8	ETSA Utilities Finance P Gtd Senior Note	1	31,750,000	32,243,427
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		24,000,000	24,402,648	09/02/2020	09/02/2050	Interest Rate Swap				910200-A#-4	UNITED ENERGY DISTRIBUTION PTY-GTD SR NT SER A	1	24,000,000	24,402,648
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		30,000,000	31,830,120	09/02/2020	09/02/2050	Interest Rate Swap				576292-YY-6	Barings Corporate Invest Convertible Not	1	30,000,000	31,830,120
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,500,000	28,356,246	09/02/2020	09/02/2050	Interest Rate Swap				68233J-A*-5	ONCOR ELECTRIC DELIVERY-SENIOR SECURED NOTE	1	26,500,000	28,356,246
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		26,600,000	27,218,822	09/02/2020	09/02/2050	Interest Rate Swap				Q9194@-AF-4	Transpower New Zealand L Gtd Senior Note	1	26,600,000	27,218,822
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		13,200,000	13,877,266	09/02/2020	09/02/2050	Interest Rate Swap				Q1297#-AK-4	CSL Finance Pty Ltd Gtd Senior Note	1	13,200,000	13,877,266
57629*FK2	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1		35,557,841	46,569,082	09/02/2020	09/02/2050	Interest Rate Swap				20030N-AM-3	Comcast Corp-NOTE	1	35,557,841	46,569,082
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	200,000,000	209,999,992	211,788,169	07/08/2021	07/08/2051	Interest Rate Swap		1,788,169		57542Z-AG-8	MM Investment Holding Revolver Fixed Line	2	209,999,992	210,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	150,000,000	6,650,000	7,227,180	07/08/2021	07/08/2051	Interest Rate Swap			620,511	55954Y-AL-9	Magnetite XXVI Ltd-MAGNE 2020-26A BR	1	6,650,000	6,606,669
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,550,000	6,549,948	07/08/2021	07/08/2051	Interest Rate Swap				00190Y-BH-7	Ares XXVII CLO Ltd-ARES 2013-2A CR2	1	6,550,000	6,549,948
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,374,758	07/08/2021	07/08/2051	Interest Rate Swap				278300-AM-8	Eaton Vance CLO 2020-1 L-EATON 2020-1A CR	1	6,400,000	6,374,758
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,395,104	07/08/2021	07/08/2051	Interest Rate Swap				143133-AG-1	CGMS 2021-6A C	1	6,400,000	6,395,104
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,396,979	07/08/2021	07/08/2051	Interest Rate Swap				87168B-AG-5	SYMP 2021-28A C-SYMP 2021-28A C	1	6,400,000	6,396,979
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,400,922	07/08/2021	07/08/2051	Interest Rate Swap				12565E-AE-1	CIFC Funding Ltd-CIFC 2021-5A C	1	6,400,000	6,400,922
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,399,955	07/08/2021	07/08/2051	Interest Rate Swap				97316J-AG-8	THL Credit Wind River 20-WINDR 2019-1A CR	1	6,400,000	6,399,955
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,370,886	07/08/2021	07/08/2051	Interest Rate Swap				05685A-AJ-7	Bain Capital Credit CLO-BCC 2021-4A C	1	6,400,000	6,370,886
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,400,000	6,374,701	07/08/2021	07/08/2051	Interest Rate Swap				38136N-AU-0	Goldentree Loan Managem-GLM 2020-8A CR	1	6,400,000	6,374,701
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,100,000	6,071,269	07/08/2021	07/08/2051	Interest Rate Swap				00900L-AS-3	AIMCO CLO Series 2015-A-AIMCO 2015-AA CR2	1	6,100,000	6,071,269
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,050,000	6,028,662	07/08/2021	07/08/2051	Interest Rate Swap				05685A-AG-3	Bain Capital Credit CLO-BCC 2021-4A B	1	6,050,000	6,028,662
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,050,000	6,028,698	07/08/2021	07/08/2051	Interest Rate Swap				00119V-AQ-2	AGL CLO 6 LTD-AGL 2020-6A BR	1	6,050,000	6,028,698
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,700,000	5,693,696	07/08/2021	07/08/2051	Interest Rate Swap				13887T-AN-7	Canyon Capital CLO 2019-CANVC 2019-1A BR	1	5,700,000	5,693,696
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,650,000	5,629,298	07/08/2021	07/08/2051	Interest Rate Swap				670881-AP-6	CCP CLO 2020-19 Ltd-CCP 2020-19A BR	1	5,650,000	5,629,298
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,625,000	5,622,289	07/08/2021	07/08/2051	Interest Rate Swap				03766@-AS-1	Apidos CLO XXVI-APID 2017-26A BR	1	5,625,000	5,622,289
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,300,000	5,296,131	07/08/2021	07/08/2051	Interest Rate Swap				48253U-AC-0	KKR-SERIES 34A CLASS B	1	5,300,000	5,296,131
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,300,000	5,273,039	07/08/2021	07/08/2051	Interest Rate Swap				09627F-AQ-3	BlueMountain CLO XXV Ltd-BLUEM 2019-25A BR	1	5,300,000	5,273,039
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,150,000	5,152,328	07/08/2021	07/08/2051	Interest Rate Swap				95023A-AC-4	Wellfleet CLO Ltd-WELF 2021-2A B	1	5,150,000	5,152,328
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		5,125,000	5,081,889	07/08/2021	07/08/2051	Interest Rate Swap				14317Y-AG-9	Carlyle Global Market St-SERIES 21-5A CLASS C	1	5,125,000	5,081,889
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,650,000	4,650,033	07/08/2021	07/08/2051	Interest Rate Swap				48661A-AL-0	KAYNE CLO I Ltd-KAYNE 2018-1A BR	1	4,650,000	4,650,033

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Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,600,000	4,599,963	07/08/2021	07/08/2051	Interest Rate Swap			29002V-AE-8	ELM10 2021-3A C-ELM10 2021-3A C OHA Credit Partners XI11-OAKC 2016-13A BR	1	4,600,000	4,599,963
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,600,000	4,600,787	07/08/2021	07/08/2051	Interest Rate Swap			67110N-AP-0	Point Au Roche Park CLO -PAPPK 2021-1A C	1	4,600,000	4,600,787
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,500,000	4,451,355	07/08/2021	07/08/2051	Interest Rate Swap			73052V-AG-0	Sound Point Clo XXXI Ltd-SNDPT 2021-3A C	1	4,500,000	4,451,355
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,500,000	4,479,885	07/08/2021	07/08/2051	Interest Rate Swap			83615P-AE-7	Elmwood CLO III Ltd-ELM10 2019-3A CR	1	4,500,000	4,479,885
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,500,000	4,485,623	07/08/2021	07/08/2051	Interest Rate Swap			29002H-AQ-2	Wind River CLO Ltd-WINDR 2021-3A C	1	4,500,000	4,485,623
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,500,000	4,487,180	07/08/2021	07/08/2051	Interest Rate Swap			33835N-AE-1	ASSURANT CLO LTD-MORGN 2018-3A CR	1	4,500,000	4,487,180
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,500,000	4,493,160	07/08/2021	07/08/2051	Interest Rate Swap			97316D-AG-1	Wind River CLO Ltd-WINDR 2021-3A C	1	4,500,000	4,493,160
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,400,000	4,382,536	07/08/2021	07/08/2051	Interest Rate Swap			48255A-AE-8	KKR CLO 36 Ltd-KKR 36A C	1	4,400,000	4,382,536
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		4,300,000	4,283,200	07/08/2021	07/08/2051	Interest Rate Swap			125550-AU-0	CIFC Funding 2020-I Ltd-CIFC 2020-1A CR	1	4,300,000	4,283,200
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	350,000,000	50,000,000	47,412,991	07/09/2021	07/09/2051	Interest Rate Swap	(2,605,859)		14316W-AA-7	Carlyle Global Market St-CGMS 2021-7A A1	1	50,000,000	50,018,850
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		48,500,000	48,526,384	07/09/2021	07/09/2051	Interest Rate Swap			12547L-AL-2	CIFC Funding 2020-II Ltd-CIFC 2020-2A AR	1	48,500,000	48,526,384
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		45,100,000	45,059,816	07/09/2021	07/09/2051	Interest Rate Swap			05876L-AA-1	Ballyrock CDO Ltd-BALLY 2021-17A A1A	1	45,100,000	45,059,816
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,700,000	13,664,668	07/09/2021	07/09/2051	Interest Rate Swap			87168B-AE-0	SYMP-SYMP 2021-28A B	1	13,700,000	13,664,668
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		13,700,000	13,699,890	07/09/2021	07/09/2051	Interest Rate Swap			97316D-AC-0	Wind River CLO Ltd-WINDR 2021-3A B1	1	13,700,000	13,699,890
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,192,244	07/09/2021	07/09/2051	Interest Rate Swap			13876G-AL-2	Canyon Capital CLO 2017-CANVC 2017-1A BR	1	9,200,000	9,192,244
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,200,469	07/09/2021	07/09/2051	Interest Rate Swap			03330N-AK-0	Anchorage Capital Clo 11-ANCHC 2019-11A BR	1	9,200,000	9,200,469
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,194,664	07/09/2021	07/09/2051	Interest Rate Swap			03328W-AU-2	Anchorage Capital CLO 9-ANCHC 2016-9A BR2	1	9,200,000	9,194,664
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,180,266	07/09/2021	07/09/2051	Interest Rate Swap			14316W-AC-3	Carlyle Global Market St-CGMS 2021-7A A2	1	9,200,000	9,180,266
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,131,791	07/09/2021	07/09/2051	Interest Rate Swap			12547L-AQ-1	CIFC Funding 2020-II Ltd-CIFC 2020-2A BR	1	9,200,000	9,131,791
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,193,137	07/09/2021	07/09/2051	Interest Rate Swap			04018X-AE-9	ARES CLO-ARES 2021-ALFA B	1	9,200,000	9,193,137
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,167,506	07/09/2021	07/09/2051	Interest Rate Swap			25255L-AC-6	Diameter Capital Clo 2 L-DCL0 2021-2A A2	1	9,200,000	9,167,506
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,166,356	07/09/2021	07/09/2051	Interest Rate Swap			12555Q-AS-5	CIFC Funding 2020-I Ltd-CIFC 2020-1A BR	1	9,200,000	9,166,356
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,200,000	9,165,868	07/09/2021	07/09/2051	Interest Rate Swap			48253H-AQ-8	KKR CLO 26 Ltd-KKR 26 BR	1	9,200,000	9,165,868
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		9,100,000	9,099,454	07/09/2021	07/09/2051	Interest Rate Swap			86271P-AG-0	Strata CLO II Ltd-STRTA 2021-1A C	1	9,100,000	9,099,454
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,725,000	8,660,697	07/09/2021	07/09/2051	Interest Rate Swap			38136N-AS-5	Goldentree Loan Managem-GLM 2020-8A BR	1	8,725,000	8,660,697
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		8,700,000	8,668,045	07/09/2021	07/09/2051	Interest Rate Swap			13876N-AN-3	Canyon CLO 2020-2 Ltd-CANVC 2020-2A BR	1	8,700,000	8,668,045
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,800,000	7,801,373	07/09/2021	07/09/2051	Interest Rate Swap			143133-AE-6	CGMS 2021-6A B-CGMS 2021-6A B	1	7,800,000	7,801,373
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,375,000	7,353,325	07/09/2021	07/09/2051	Interest Rate Swap			13877P-AC-1	CANVC-2021-4A B	1	7,375,000	7,353,325
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,300,000	7,272,092	07/09/2021	07/09/2051	Interest Rate Swap			13875M-AE-6	Canyon CLO 2021-3 Ltd-CANVC 2021-3A C	1	7,300,000	7,272,092
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,300,000	7,300,066	07/09/2021	07/09/2051	Interest Rate Swap			12551J-AN-6	CIFC Funding 2017-IV Ltd-CIFC 2017-4A A2R	1	7,300,000	7,300,066
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,200,000	7,174,325	07/09/2021	07/09/2051	Interest Rate Swap			97315V-AE-7	Wind River CLO Ltd-WINDR 2021-2A B	1	7,200,000	7,174,325

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ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE DB - PART C - SECTION 1

Replication (Synthetic Asset) Transactions Open as of December 31 of Current Year

Replication (Synthetic Asset) Transactions								Components of the Replication (Synthetic Asset) Transactions							
1	2	3	4	5	6	7	8	Derivative Instrument(s) Open			Cash Instrument(s) Held				
Number	Description	NAIC Designation or Other Description	Notional Amount	Book/Adjusted Carrying Value	Fair Value	Effective Date	Maturity Date	9	10	11	12	13	14	15	16
								Description	Book/Adjusted Carrying Value	Fair Value	CUSIP	Description	NAIC Designation or Other Description	Book/Adjusted Carrying Value	Fair Value
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,100,000	7,104,324	07/09/2021	07/09/2051	Interest Rate Swap			04019L-AN-4	ARES LI CLO Ltd-ARES 2019-51A BR Anchorage Capital CLO 9 -ANCHC	1	7,100,000	7,104,324
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,040,000	7,018,697	07/09/2021	07/09/2051	Interest Rate Swap			03328W-AW-8	2016-9A CR2	1	7,040,000	7,018,697
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,000,000	6,948,592	07/09/2021	07/09/2051	Interest Rate Swap			61773K-AC-6	Morgan Stanley Eaton Van-MSEV 2021-1A B	1	7,000,000	6,948,592
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		7,000,000	6,995,898	07/09/2021	07/09/2051	Interest Rate Swap			00901A-AL-1	AIMCO CLO 10 Ltd-AIMCO 2019-10A BR	1	7,000,000	6,995,898
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,800,000	6,801,836	07/09/2021	07/09/2051	Interest Rate Swap			03762Y-AH-0	Apidos Clo XXV-APID 2016-25A A2R	1	6,800,000	6,801,836
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		6,750,000	6,725,376	07/09/2021	07/09/2051	Interest Rate Swap			50204A-AE-6	LCM LP-LCM 32A B	1	6,750,000	6,725,376
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	200,000,000	214,999,992	210,187,234	07/12/2021	07/12/2051	Interest Rate Swap		(4,812,766)	57542Z-A9-8	MM Investment Holding Revolver	2	214,999,992	215,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	350,000,000	50,000,000	36,970,583	07/21/2021	07/21/2051	Interest Rate Swap		(13,041,667)	83615P-AA-5	Sound Point Clo XXXI Ltd-SNDPT 2021-3A A	1	50,000,000	50,012,250
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,030,600	07/21/2021	07/21/2051	Interest Rate Swap			95023A-AA-8	Wellfleet CLO Ltd-WELF 2021-2A A1 Palmer Square CLO Ltd-PLMRS 2021-4A	1	50,000,000	50,030,600
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,039,650	07/21/2021	07/21/2051	Interest Rate Swap			69702E-AA-3	A Anchorage Capital CLO 19-ANCHC	1	50,000,000	50,039,650
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,061,750	07/21/2021	07/21/2051	Interest Rate Swap			03328J-AA-5	2021-19A A	1	50,000,000	50,061,750
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,046,200	07/21/2021	07/21/2051	Interest Rate Swap			42088A-AA-2	Hayfin US XII Ltd-HAYFN 2021-14A A1	1	50,000,000	50,046,200
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,026,450	07/21/2021	07/21/2051	Interest Rate Swap			87168B-AC-4	SYMP-SYMP 2021-28A A	1	50,000,000	50,026,450
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		50,000,000	50,026,850	07/21/2021	07/21/2051	Interest Rate Swap			67110N-AW-7	OHA Credit Partners XIII-OKC 2016-13A AR	1	50,000,000	50,026,850
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,312,500	14,209,722	07/21/2021	07/21/2051	Interest Rate Swap			70470M-AE-5	Peace Park CLO Ltd-PCEPK 2021-1A B1	1	14,312,500	14,209,722
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z		14,090,000	14,038,684	07/21/2021	07/21/2051	Interest Rate Swap			55822A-AN-7	Madison Park Funding XLV-MDPK 2020-46A B1R	1	14,090,000	14,038,684
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	200,000,000	214,999,992	210,774,554	08/09/2021	08/09/2051	Interest Rate Swap		(4,225,446)	57542Z-A9-8	MM Investment Holding Revolver	2	214,999,992	215,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	300,000,000	319,999,988	313,842,372	08/09/2021	08/09/2051	Interest Rate Swap		(6,157,628)	57542Z-A9-8	MM Investment Holding Revolver	2	319,999,988	320,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	250,000,000	259,999,990	258,750,374	08/10/2021	08/10/2051	Interest Rate Swap		(1,249,626)	57542Z-A9-8	MM Investment Holding Revolver	2	259,999,990	260,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	200,000,000	209,999,992	209,096,595	08/10/2021	08/10/2051	Interest Rate Swap		(903,405)	57542Z-A9-8	MM Investment Holding Revolver	2	209,999,992	210,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	300,000,000	314,999,988	313,356,005	08/10/2021	08/10/2051	Interest Rate Swap		(1,643,995)	57542Z-A9-8	MM Investment Holding Revolver	2	314,999,988	315,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	2Z	250,000,000	264,999,990	262,727,229	08/10/2021	08/10/2051	Interest Rate Swap		(2,272,771)	57542Z-A9-8	MM Investment Holding Revolver	2	264,999,990	265,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	150,000,000	165,000,000	160,823,520	08/23/2021	08/23/2051	Interest Rate Swap		(4,176,480)	12503Z-MM-8	CCLF SPV LLC-Revolving Credit Facility	1	165,000,000	165,000,000
Need to File with the NAIC	Evergreen Basked of Long Fixed Rate ABS Bank Loans and Corporate Bonds	1Z	200,000,000	215,000,000	209,069,897	08/23/2021	08/23/2051	Interest Rate Swap		(5,930,103)	12503Z-MM-8	CCLF SPV LLC-Revolving Credit Facility	1	215,000,000	215,000,000
999999999 - Totals				23,304,021,932	24,416,289,448	XXX	XXX	XXX	(350,681)	395,809,750	XXX	XXX	XXX	23,304,372,613	24,020,479,698

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ANNUAL STATEMENT FOR THE YEAR 2021 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	111	15,988,959,993	111	15,988,959,993	107	19,070,463,417	122	22,515,137,719	111	15,988,959,993
2. Add: Opened or Acquired Transactions	5	100,000,000	25	6,351,972,174	26	4,969,711,923			56	11,421,684,097
3. Add: Increases in Replication (Synthetic Asset) Transactions Statement Value	XXX		XXX		XXX		XXX		XXX	
4. Less: Closed or Disposed of Transactions	5	100,000,000	29	3,270,468,750	11	1,525,037,621	3	641,979,295	48	5,537,485,666
5. Less: Positions Disposed of for Failing Effectiveness Criteria										
6. Less: Decreases in Replication (Synthetic Asset) Transactions Statement Value	XXX		XXX		XXX		XXX		XXX	
7. Ending Inventory	111	15,988,959,993	107	19,070,463,417	122	22,515,137,719	119	21,873,158,424	119	21,873,158,424

ANNUAL STATEMENT FOR THE YEAR 2021 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.....	5,468,645,259
2. Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance .....	.....
3. Total (Line 1 plus Line 2)	5,468,645,259
4. Part D, Section 1, Column 6	16,378,561,586
5. Part D, Section 1, Column 7	(10,876,753,492)
6. Total (Line 3 minus Line 4 minus Line 5)	(33,162,835)
	Fair Value Check
7. Part A, Section 1, Column 16	5,864,805,785
8. Part B, Section 1, Column 13	33,162,834
9. Total (Line 7 plus Line 8)	5,897,968,620
10. Part D, Section 1, Column 9	17,608,174,427
11. Part D, Section 1, Column 10	(11,710,205,807)
12. Total (Line 9 minus Line 10 minus Line 11) .....	.....
	Potential Exposure Check
13. Part A, Section 1, Column 21	4,532,971,735
14. Part B, Section 1, Column 20	121,434,195
15. Part D, Section 1, Column 12	4,654,405,930
16. Total (Line 13 plus Line 14 minus Line 15) .....	.....

ANNUAL STATEMENT FOR THE YEAR 2021 OF THE Massachusetts Mutual Life Insurance Company

SCHEDULE E - PART 2 - VERIFICATION BETWEEN YEARS

(Cash Equivalents)

	1	2	3	4
	Total	Bonds	Money Market Mutual funds	Other (a)
1. Book/adjusted carrying value, December 31 of prior year	3,252,909,998	2,423,373,542	829,536,456	
2. Cost of cash equivalents acquired	187,354,954,014	166,067,781,075	21,287,172,939	
3. Accrual of discount				
4. Unrealized valuation increase (decrease)	5,476,968	5,503,548	(26,580)	
5. Total gain (loss) on disposals	589,492	589,778	(286)	
6. Deduct consideration received on disposals	188,839,821,599	167,168,602,714	21,671,218,885	
7. Deduct amortization of premium				
8. Total foreign exchange change in book/adjusted carrying value				
9. Deduct current year's other than temporary impairment recognized				
10. Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9)	1,774,108,873	1,328,645,229	445,463,644	
11. Deduct total nonadmitted amounts				
12. Statement value at end of current period (Line 10 minus Line 11)	1,774,108,873	1,328,645,229	445,463,644	

(a) Indicate the category of such investments, for example, joint ventures, transportation equipment: