

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

QUARTERLY STATEMENT

AS OF SEPTEMBER 30, 2020 OF THE CONDITION AND AFFAIRS OF THE

C.M. Life Insurance Company

NAIC Group Code 0435 0435 NAIC Company Code 93432 Employer's ID Number 06-1041383

Organized under the Laws of	(Current) (Prior) Connecticut	. State of Domicile or Port	of Entry CT
		<u></u>	
		nited States of America	1
	Life, Accident and I		
Incorporated/Organized	04/25/1980	Commenced Business	05/12/1981
Statutory Home Office	100 Bright Meadow Boulevard	,	Enfield, CT, US 06082
	(Street and Number)	(City	or Town, State, Country and Zip Code)
Main Administrative Office		1295 State Street	
Sprii	ngfield, MA, US 01111	(Street and Number)	413-788-8411
	, State, Country and Zip Code)		(Area Code) (Telephone Number)
Mail Address	1295 State Street		Springfield, MA, US 01111
	(Street and Number or P.O. Box)	(City	or Town, State, Country and Zip Code)
Primary Location of Books and Reco	ords	1295 State Street	
	5	(Street and Number)	
	ngfield, MA, US 01111 , State, Country and Zip Code)		413-788-8411 (Area Code) (Telephone Number)
. ,			(()
Internet Website Address		www.massmutual.com	
Statutory Statement Contact	Cheryl Kohlenberger	,	617-235-0122
CKohlenh	(Name) erger12@massmutual.com		(Area Code) (Telephone Number) 413-226-4086
	(E-mail Address)		(FAX Number)
		OFFICERS	
President and Chief		OFFICERS	
Executive Officer			Todd Garett Picken
Secretary	Akintokunbo Akinbajo	Appointed Actuary	Vy Quoc Ho #
		OTHER	
Elizabeth Ward Chicares, Execut Chief Financial (ert Fanning, Executive Vice President	Melvin Timothy Corbett, Executive Vice President
Roger William Crandal		CTORS OR TRUSTEES Michael Robert Fanning	Elizabeth Ward Chicares
Michael James O			
	ssachusetts SS:		
County of	Hampden		
all of the herein described assets v statement, together with related exh condition and affairs of the said reprin accordance with the NAIC Annua rules or regulations require differe respectively. Furthermore, the scop	vere the absolute property of the said rep- ibits, schedules and explanations therein co- orting entity as of the reporting period state al Statement Instructions and Accounting F- nices in reporting not related to account on of this attestation by the described office	orting entity, free and clear from any lie contained, annexed or referred to, is a fud dabove, and of its income and deductio Practices and Procedures manual excepting practices and procedures, according ractions also includes the related correspondences.	eporting entity, and that on the reporting period stated above inso or claims thereon, except as herein stated, and that this II and true statement of all the assets and liabilities and of the ins therefrom for the period ended, and have been completed to the extent that: (1) state law may differ; or, (2) that state ing to the best of their information, knowledge and belief ding electronic filing with the NAIC, when required, that is array be requested by various regulators in lieu of or in addition
Roger William Cranda President and Chief Executiv Subscribed and sworn to before me day of	e Officer	Akintokunbo Akinbajo Secretary a. Is this an original fil b. If no, 1. State the ameno	Todd Garett Picken Treasurer ling? Yes [X] No []
		2. Date filed	

ASSETS

			4		
		1 Assets	2 Nonadmitted Assets	3 Net Admitted Assets (Cols. 1 - 2)	December 31 Prior Year Net Admitted Assets
1.	Bonds	4,132,494,088		4,132,494,088	3,809,562,902
	Stocks:				
	2.1 Preferred stocks	5,106,686		5, 106, 686	7,389,131
	2.2 Common stocks	325,613,473		325,613,473	314,411,333
3.	Mortgage loans on real estate:				
	3.1 First liens	967,705,667		967,705,667	933,021,597
	3.2 Other than first liens				
4.	Real estate:				
	4.1 Properties occupied by the company (less \$				
	encumbrances)				
	4.2 Properties held for the production of income (less				
	\$ encumbrances)				
	4.3 Properties held for sale (less \$encumbrances)				
5.	Cash (\$53,292,972), cash equivalents				
	(\$140,478,204) and short-term				
	investments (\$115,309,559)	309 080 735		309,080,735	463 125 060
6.	Contract loans (including \$ premium notes)			151, 135, 124	
	Derivatives promain reces			1,117,339,828	, ,
	Other invested assets			162,316,200	
9.	Receivables for securities			369,787,252	
10.	Securities lending reinvested collateral assets				
11.	Aggregate write-ins for invested assets				
	Subtotals, cash and invested assets (Lines 1 to 11)			7,540,579,052	
	Title plants less \$ charged off (for Title insurers	, •,		, , ,	
	only)				
14.	Investment income due and accrued			108,385,117	
	Premiums and considerations:			, ,	
	15.1 Uncollected premiums and agents' balances in the course of collection	81.544	21.054	60,491	255.930
	15.2 Deferred premiums, agents' balances and installments booked but	, .	,	,	, , ,
	deferred and not yet due (including \$				
	earned but unbilled premiums)	(23,265,314)		(23,265,314)	(16,510,239)
	15.3 Accrued retrospective premiums (\$. , , ,
	contracts subject to redetermination (\$				
16.	Reinsurance:				
	16.1 Amounts recoverable from reinsurers	29,339,827		29,339,827	25,781,891
	16.2 Funds held by or deposited with reinsured companies				
	16.3 Other amounts receivable under reinsurance contracts			8,407,122	5,827,273
17.	Amounts receivable relating to uninsured plans				
18.1	Current federal and foreign income tax recoverable and interest thereon	1,915,163		1,915,163	1,946,617
	Net deferred tax asset			6, 139, 675	29,633,793
	Guaranty funds receivable or on deposit			909,695	844,046
20.	Electronic data processing equipment and software				
21.	Furniture and equipment, including health care delivery assets				
	(\$				
22.	Net adjustment in assets and liabilities due to foreign exchange rates				
23.	Receivables from parent, subsidiaries and affiliates	292, 126		292,126	268,088
	Health care (\$) and other amounts receivable				
25.	Aggregate write-ins for other than invested assets	102,769	33,427	69,342	54,954
26.	Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)			7,672,832,296	6,829,151,932
27.	From Separate Accounts, Segregated Accounts and Protected Cell	4 700 004 040		1 700 004 040	1 000 050 400
	Accounts			1,796,694,318	
28.	Total (Lines 26 and 27)	9,481,534,540	12,007,926	9,469,526,614	8,639,008,340
	DETAILS OF WRITE-INS				
1101.					
1102.					
1103.					
1198.	Summary of remaining write-ins for Line 11 from overflow page				
1199.	Totals (Lines 1101 through 1103 plus 1198)(Line 11 above)				
2501.	Miscellaneous other assets			69,342	54,954
2502.	Cash advances to agents	33,427	33,427		
2503.					
2598.	Summary of remaining write-ins for Line 25 from overflow page				
2599.	Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	102,769	33,427	69,342	54,954

LIABILITIES, SURPLUS AND OTHER FUNDS

		1 Current	2 December 31
1	Aggregate reserve for life contracts \$	Statement Date	Prior Year
	(including \$		
3.	Liability for deposit-type contracts (including \$ Modco Reserve)	68,109,134	85,681,978
4.	Contract claims: 4.1 Life		
5.	4.2 Accident and health		
6.	and unpaid		
	amounts: 6.1 Policyholders' dividends and refunds to members apportioned for payment (including \$		
	6.2 Policyholders' dividends and refunds to members not yet apportioned (including \$		
	Amount provisionally held for deferred dividend policies not included in Line 6 Premiums and annuity considerations for life and accident and health contracts received in advance less		
	\$ discount; including \$ accident and health premiums		9,977
	9.1 Surrender values on canceled contracts 9.2 Provision for experience rating refunds, including the liability of \$ accident and health experience rating refunds of which \$ is for medical loss ratio rebate per the Public Health Service Act		
	9.3 Other amounts payable on reinsurance, including \$ assumed and \$ 253,998 ceded		
	9.4 Interest Maintenance Reserve	230,009,075	108, 155, 191
	Commissions to agents due or accrued-life and annuity contracts \$, accident and health \$, and deposit-type contract funds \$		
11. 12.	Commissions and expense allowances payable on reinsurance assumed	1,099	139
	Transfers to Separate Accounts due or accrued (net) (including \$(3,461,675) accrued for expense allowances recognized in reserves, net of reinsured allowances)		
	Taxes, licenses and fees due or accrued, excluding federal income taxes	887,416	872,292
	Current federal and foreign income taxes, including \$ on realized capital gains (losses)		
16. 17.	Unearned investment income		
18.	Amounts held for agents' account, including \$ agents' credit balances Remittances and items not allocated		
20.	Net adjustment in assets and liabilities due to foreign exchange rates		
21. 22.	Liability for benefits for employees and agents if not included above		
23.	Dividends to stockholders declared and unpaid		
24.	Miscellaneous liabilities: 24.01 Asset valuation reserve		
	24.02 Reinsurance in unauthorized and certified (\$		
	24.04 Payable to parent, subsidiaries and affiliates	24,805,651	32,590,060
	24.05 Drafts outstanding		
	24.07 Funds held under coinsurance		
	24.09 Payable for securities	15, 132, 927	
	24.10 Payable for securities lending		
	Aggregate write-ins for liabilities	431,409,152 5,931,053,914	226,666,086 5,094,114,366
27.	From Separate Accounts Statement	1,796,694,318	1,809,856,408
28. 29.	Total liabilities (Lines 26 and 27) Common capital stock	7,727,748,233	6,903,970,774 2,500,000
30.	Preferred capital stock		
31. 32.	Aggregate write-ins for other than special surplus funds		
	Gross paid in and contributed surplus	450,276,208	450,276,208
34. 35.	Aggregate write-ins for special surplus funds	1,289,002,173	1,282,261,358
36.	Less treasury stock, at cost: 36.1		
	36.2 shares preferred (value included in Line 30 \$		
	Surplus (Total Lines 31+32+33+34+35-36) (including \$	1,739,278,381 1,741,778,381	1,732,537,566 1,735,037,566
1	Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	9,469,526,614	8,639,008,340
2501.	DETAILS OF WRITE-INS Derivative collateral	292.144.921	114 . 184 . 729
2502.	Derivative accrued interest	135 , 171 , 875	107,916,666
2503. 2598.	Funds awaiting escheat and other miscellaneous		
2599. 3101.	Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	431,409,152	226,666,086
3102.			
3103. 3198.	Summary of remaining write-ins for Line 31 from overflow page		
3199.	Totals (Lines 3101 through 3103 plus 3198)(Line 31 above)		
3403. 3498.	Summary of remaining write-ins for Line 34 from overflow page		
3499.	Totals (Lines 3401 through 3403 plus 3498)(Line 34 above)		

SUMMARY OF OPERATIONS

		1 1	2	3
		Current Year	Prior Year	Prior Year Ended
		To Date	To Date	December 31
1.	Premiums and annuity considerations for life and accident and health contracts		239,807,390	312,324,893
2.	Considerations for supplementary contracts with life contingencies		2,319,583	2,949,967
3.	Net investment income	180,089,759	201, 122, 292	326, 173, 351
4.	Amortization of Interest Maintenance Reserve (IMR)			804,221
5.	Separate Accounts net gain from operations excluding unrealized gains or losses Commissions and expense allowances on reinsurance ceded	42 520 040	67 204 770	87,691,312
6. 7.				
7. 8.	Reserve adjustments on reinsurance ceded			
0.	8.1 Income from fees associated with investment management, administration and contract			
	guarantees from Separate Accounts	27.141.092	27,536,528	36,868,518
	8.2 Charges and fees for deposit-type contracts			
	8.3 Aggregate write-ins for miscellaneous income		1.514.836	1,924,233
9.	Totals (Lines 1 to 8.3)	458,595,424	539,615,812	768.736.495
10.	Death benefits	79.857.467	67,780,634	90,730,503
11.	Matured endowments (excluding guaranteed annual pure endowments)	′ ′ ′		
12.	Annuity benefits			102,802,254
13.	Disability benefits and benefits under accident and health contracts	466,841	425,471	558,292
14.	Coupons, guaranteed annual pure endowments and similar benefits			
15.	Surrender benefits and withdrawals for life contracts	240,809,911	329,417,456	434,855,750
16.	Group conversions			
17.	Interest and adjustments on contract or deposit-type contract funds	2,229,797	4,489,326	5,659,767
18.	Payments on supplementary contracts with life contingencies	1,470,924	926,570	1,320,621
19.	Increase in aggregate reserves for life and accident and health contracts		(33,752,053)	(32,489,265)
20.	Totals (Lines 10 to 19)		442,629,573	603,437,922
21.	Commissions on premiums, annuity considerations, and deposit-type contract funds (direct			
	business only)		43,885,180	57,335,524
22.	Commissions and expense allowances on reinsurance assumed			
23.	General insurance expenses and fraternal expenses	61,598,940	87,455,773	113,860,905
24.	Insurance taxes, licenses and fees, excluding federal income taxes	7,542,658	8,757,307	11,525,545
25.	Increase in loading on deferred and uncollected premiums	4,359	(576,412)	(946,337)
26.	Net transfers to or (from) Separate Accounts net of reinsurance		(106,603,500)	(153,809,820)
27.	Aggregate write-ins for deductions	(4,260,269)	(4,150,608)	(5,780,816)
28.	Totals (Lines 20 to 27)	403,239,953	471,397,313	625,622,923
29.	Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus	FF 0FF 474	00 040 400	440 440 570
	Line 28)	55,355,471	68,218,499	143,113,572
30.	Dividends to policyholders and refunds to members			
31.	Net gain from operations after dividends to policyholders, refunds to members and before federal income taxes (Line 29 minus Line 30)	55 255 471		143,113,572
32.	Federal and foreign income taxes incurred (excluding tax on capital gains)	4,399,069	68,218,499	143,113,572
33.	Net gain from operations after dividends to policyholders, refunds to members and federal income	4,000,000	10,300,203	13,007,471
33.	taxes and before realized capital gains or (losses) (Line 31 minus Line 32)	50,956,402	57,288,214	123,426,101
34.	Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital			
· · ·	gains tax of \$			
	transferred to the IMR)	(4, 122, 318)	(5,423,720)	(7,795,705)
35.	Net income (Line 33 plus Line 34)	46.834.084	51.864.494	115.630.396
00.	CAPITAL AND SURPLUS ACCOUNT	10,001,001	0.,00.,.0.	1.0,000,000
36.	Capital and surplus, December 31, prior year	1,735,037,566	1,637,317,539	1,637,317,539
37.			51.864.494	115,630,396
38.	,	112,257,609	, , ,	, ,
39.	Change in net unrealized depital gains (losses) less depital gain (loss)			
40.	Change in net deferred income tax	(26 557 248)	(26, 398, 534)	(21 875 684)
41.	Change in nonadmitted assets			
42.	Change in liability for reinsurance in unauthorized and certified companies			
43.	Change in reserve on account of change in valuation basis, (increase) or decrease			
44.	Change in asset valuation reserve			
45.	Change in treasury stock			
46.	Surplus (contributed to) withdrawn from Separate Accounts during period			
47.	Other changes in surplus in Separate Accounts Statement			
48.	Change in surplus notes			
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	(5,006,388)	(5,079,178)	(6,772,238)
54.	Net change in capital and surplus for the year (Lines 37 through 53)	6,740,815	79,988,008	97,720,027
55.	Capital and surplus, as of statement date (Lines 36 + 54)	1,741,778,381	1,717,305,547	1,735,037,566
1	DETAILS OF WRITE-INS		-	
08.301.	Revenue sharing			1,933,420
08.302.	Miscellaneous		(5,546)	(9,187)
	Summary of remaining write-ins for Line 8.3 from overflow page			
08.399.	Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	1,629,816	1,514,836	1,924,233
	Reinsurance ceded adjustment			
	Miscellaneous charges to operations		· ·	991,422
	Summary of remaining write-ins for Line 27 from overflow page			
	Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)	(4,260,269)	(4,150,608)	(5,780,816)
				(6,772,238)
	Summary of remaining write-ins for Line 53 from overflow page			
5399.	Totals (Lines 5301 through 5303 plus 5398)(Line 53 above)	(5,006,388)	(5,079,178)	(6,772,238)

CASH FLOW

		1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
	Cash from Operations			
1.	Premiums collected net of reinsurance		249,442,186	293,369,635
2.	Net investment income	, ,	215,111,854	335,568,902
3.	Miscellaneous income	73,538,922	99,213,285	132,172,288
4.	Total (Lines 1 to 3)	472,388,468	563,767,325	761,110,825
5.	Benefit and loss related payments		486,951,868	636,337,930
6.	Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts		(106,232,134)	(153,859,414)
7.	Commissions, expenses paid and aggregate write-ins for deductions	106,726,679	156,503,098	205,488,646
8.	Dividends paid to policyholders			
9.	Federal and foreign income taxes paid (recovered) net of \$2,262,542 tax on capital			
	gains (losses)	7,847,095	7,504,047	12,170,806
10.	Total (Lines 5 through 9)	428,419,436	544,726,879	700, 137, 968
11.	Net cash from operations (Line 4 minus Line 10)	43,969,032	19,040,446	60,972,857
	Cash from Investments			
12.	Proceeds from investments sold, matured or repaid:			
	12.1 Bonds	516,835,873	709,319,458	
	12.2 Stocks	2,633,968	(3,865,141)	18,657,180
	12.3 Mortgage loans	75,563,484	70,394,274	88,704,427
	12.4 Real estate			
	12.5 Other invested assets	6,873,933	23,084,347	32,908,540
	12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	15,326	(3,219,990)	(3, 123, 764)
	12.7 Miscellaneous proceeds	77,617,067	(20,570,537)	(7,944,396)
	12.8 Total investment proceeds (Lines 12.1 to 12.7)	679,539,651	775,142,411	1,039,077,529
13.	Cost of investments acquired (long-term only):			
	13.1 Bonds	836,246,465	544,325,429	646,816,334
	13.2 Stocks	2,179,511	1,881,312	2,518,255
	13.3 Mortgage loans	113,070,789	88,714,579	96,991,030
	13.4 Real estate			
	13.5 Other invested assets	16,835,316	23,430,266	30,868,378
	13.6 Miscellaneous applications	(11,483,988)	18,645,244	21,636,944
	13.7 Total investments acquired (Lines 13.1 to 13.6)	956,848,093	676,996,830	798,830,941
14.	Net increase (or decrease) in contract loans and premium notes	200,435	2,883,682	1,511,026
15.	Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	(277,508,877)	95,261,899	238,735,562
	Cash from Financing and Miscellaneous Sources			
16.	Cash provided (applied):			
	16.1 Surplus notes, capital notes			
	16.2 Capital and paid in surplus, less treasury stock			
	16.3 Borrowed funds			
	16.4 Net deposits on deposit-type contracts and other insurance liabilities			
	16.5 Dividends to stockholders			
	16.6 Other cash provided (applied)	271,154,287	(161,473,485)	(213,854,973)
17.	Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	79,495,521	(147,656,838)	(227,588,074
	RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS			
10	Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17)	(154,044,324)	(33,354,493)	72,120,345
18.	Cash, cash equivalents and short-term investments:			
19.	•		391,004,715	391,004,715
	19.1 Beginning of year	463,125,060		
	19.1 Beginning of year	309,080,736	357,650,222	463,125,060
19.	19.2 End of period (Line 18 plus Line 19.1)			463,125,060
19. lote: Su 20.000	19.2 End of period (Line 18 plus Line 19.1) upplemental disclosures of cash flow information for non-cash transactions: 1. Bond conversions and refinancing	309,080,736	357,650,222	
19. lote: Su 20.000 20.000	19.2 End of period (Line 18 plus Line 19.1) upplemental disclosures of cash flow information for non-cash transactions:	309,080,736 16,420,883 6,303,396	357,650,222	463,125,060 57,616,488 22,578

EXHIBIT 1

DIRECT PREMIUMS AND DEPOSIT-TYPE CONTRACTS

DIRECT PREMIUMS AND DEPOSIT-TYPE CONTRACTS								
		1 Current Year	2 Prior Year	3 Prior Year Ended				
		To Date	To Date	December 31				
1.	Industrial life							
2.	Ordinary life insurance	132,810,168	138,293,562	185,111,141				
3.	Ordinary individual annuities	629,261,086	1,065,508,208	1,388,409,218				
4.	Credit life (group and individual)							
5.	Group life insurance							
6.	Group annuities							
7.	A & H - group							
8.	A & H - credit (group and individual)							
9.	A & H - other							
10.	Aggregate of all other lines of business							
11.	Subtotal (Lines 1 through 10)	762,071,254	1,203,801,770	1,573,520,359				
12.	Fraternal (Fraternal Benefit Societies Only)							
13.	Subtotal (Lines 11 through 12)	762,071,254	1,203,801,770	1,573,520,359				
14.	Deposit-type contracts							
15.	Total (Lines 13 and 14)	762,071,254	1,203,801,770	1,573,520,359				
	DETAILS OF WRITE-INS							
1001.								
1002.								
1003.								
1098.	Summary of remaining write-ins for Line 10 from overflow page							
1099.	Totals (Lines 1001 through 1003 plus 1098)(Line 10 above)							

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Note 1 - Summary of Significant Accounting Policies and Going Concern

a. Accounting practices:

The accompanying financial statements of C.M. 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 State of Connecticut Insurance Department.

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

	SSAP#	F/S Page	F/S Line #	2020	_	2019
NET INCOME						
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$ 46,834,084	\$	115,630,396
(2) State prescribed practices that increase/(decrease) NAIC	N/A	N/A	N/A	-		-
(3) State permitted practices that increase/(decrease) NAIC	N/A	N/A	N/A	-		-
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	\$ 46,834,084	\$	115,630,396
SURPLUS						
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$ 1,741,778,381	\$	1,735,037,566
(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	\$ 1,741,778,381	\$	1,735,037,566

- Use of estimates in the preparation of the financial statements No change
- c. Accounting policy:
 - (1) No change
 - (2) Bonds are generally valued at amortized cost using the constant yield interest method with the exception of NAIC Category 6 bonds, which are in or near default, and certain residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), which are rated by outside modelers, which are carried at the lower of amortized cost or fair value. NAIC ratings are applied to bonds and other securities. Categories 1 and 2 are considered investment grade, while Categories 3 through 6 are considered below investment grade. Bond transactions are recorded on a trade date basis, except for private placement bonds, which are recorded on the funding date.

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

(3-5) No Change

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

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

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

(7-14) No change

d. Going concern:

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

Note 2 - Accounting Changes and Corrections of Errors

- a. For the nine months ended September 30, 2020 and 2019, the Company did not record any corrections of prior years' errors.
- b. Adoption of new accounting standards:

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

In August 2019, the NAIC adopted modifications to SSAP No. 51R, Life Contracts, to incorporate references to the Valuation Manual and to facilitate the implementation of PBR. The adoption, effective January 1, 2020, only applies to certain annuity products and includes inforce policies issued after 1980. Prior to adoption, the Company used formulas and assumptions to determine reserves as prescribed by state laws and regulations. Under PBR, the aggregate reserve for contracts falling within the scope of these requirements

shall equal the stochastic reserve plus the additional standard projection amount less the projected interest maintenance reserve included in the starting assets. These requirements constitute the Commissioners Annuity Reserve Valuation Method for all contracts encompassed by the scope. The modifications did not have a material effect on the Company's total annuity reserves and surplus in the financial statements.

In April 2020, the NAIC adopted modifications to SSAP Nos. 15, 22R and 86. These revisions adopt Financial Accounting Standards Board Accounting Standard Update No. 2020-04 Reference Rate Reform, which applies only to contracts, hedging relationships, and other transactions that reference London Inter-Bank Offered Rate (LIBOR) or another reference rate expected to be discontinued because of reference rate reform. Optional expedients allow entities (under certain circumstances) to avoid having to remeasure contracts or reassess a previous accounting determination for hedged items. The guidance is effective through December 31, 2022. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

In April 2020, the NAIC adopted modifications to SSAP Nos. 6, 47, 51R and 65. This guidance extends the 90-Day Rule due to the impacts of COVID-19 and provides exception to the 90-day past due rule for nonadmittance required in SSAP No. 6 for premiums, SSAP No. 47 for uncollected uninsured plan receivables, SSAP No. 51R for life premiums and SSAP No. 65 for high deductible policies. It was applicable only for the first and second quarters of 2020 and expired on September 29, 2020. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

In April 2020, the NAIC adopted modifications to SSAP No. 36. This guidance notes a mortgage loan or bank loan modification due to the impacts of COVID-19 on the borrower will not automatically be categorized as a troubled debt restructuring (TDR). To qualify for relief, the borrower must have been in good standing as of December 31, 2019 (not more than 30 days past due). This guidance expires at the earlier of 60 days after the date of termination of the National Emergency or December 31, 2020. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

In April 2020, the NAIC adopted modifications to SSAP Nos. 26R, 30R, 37, 43R and 48. This guidance provides limited time exceptions for impairment assessments related to mortgage loans, bank loans and other investments that predominantly invest in mortgage loans and does not require an impairment classification under SSAP No. 37 for mortgage loans or SSAP No. 26R for bank loans that are deferred/modified in response to the impacts of COVID-19. It also provides limited-scope provisions for assessing impairment for other investments (e.g., mutual funds, limited liability companies) that predominantly invest in mortgage loans impacted due to fair value declines if the entity does not intend to sell. This guidance only defers the assessment of impairment due to situations caused by the forbearance or modification of mortgage loan or bank loan payments for borrowers who are or may be unable to meet their contractual payment obligations because they are experiencing short-term financial or operational problems due to the effects of COVID-19. This guidance is only applicable for the first, second and third quarters of 2020 and will expire in the fourth quarter of 2020. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

In May 2020, the NAIC adopted modifications to SSAP No. 34. This guidance notes if investments have been impacted by forbearance or other modification provisions, a reporting entity shall assess whether the investment income has been earned in accordance with the modified terms. This guidance was applicable for the second quarter of 2020 and it expired on September 29, 2020. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

In May 2020, the NAIC adopted modifications to SSAP Nos. 26R, 36, 43R and 103R. This guidance clarifies how to determine when restructuring or modification of certain debt investments due to COVID-19 are a TDR. The guidance also clarifies whether a modification that is not a TDR needs to be assessed as an exchange under SSAP No. 103R. This guidance has the same end date as the Coronavirus Aid, Relief, and Economic Security (CARES) Act and is effective for the specific purpose to provide practical expedients in assessing whether modifications in response to COVID-19 are insignificant under SSAP No. 36 and in assessing whether a change is substantive under SSAP No. 103R. The Company has adopted this guidance and the adoption did not have a material impact on its financial statements.

Note 3 – Business Combinations and Goodwill - No change

Note 4 - Discontinued Operations - No change

Note 5 - Investments

- a. Mortgage loans, including mezzanine real estate loans No change
- b. Debt restructuring No change
- c. Reverse mortgages No change
- d. Loan-backed securities:
 - (1) Prepayment assumptions for loan-backed and structured securities are based on various assumptions and inputs obtained from external industry sources along with internal analysis and actual experience.
 - (2) The following contains loan-backed and structured securities that recognized other-than-temporary impairments (OTTI) classified on the following bases for recognizing OTTI:

			(1)			(2)			(3)
			Amortized		P	OTT cogn			
			Cost Basis			in Los			
			Before	l'	2a)		2b)		Fair Value
			OTTI	•	erest	٠,	on-interest		1-(2a+2b)
		_	<u> </u>						. (===)
OTT	ΓI 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	_	2,725,567		_		483,094		2,242,473
C.	Total first quarter	\$	2,725,567	\$		\$	483,094	\$	2,242,473
	I 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		4 070 007				242.044		4 705 700
	recover the amortized cost basis	_	1,978,627	Φ.		_	212,844	_	1,765,783
f.	Total second quarter	\$	1,978,627	\$		\$	212,844	\$	1,765,783
OTT	I 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	_	3,225,941		-		311,289		2,914,652
i.	Total third quarter	\$	3,225,941	\$		\$	311,289	\$	2,914,652
	I recognized in the fourth quarter	φ		ď		¢		ф	
j.	Intent to sell Inability or lack of intent to retain the investment	\$	-	Ъ	-	Ъ	-	Ъ	-
k.	in the security for a period of time sufficient to								
	recover the amortized cost basis		_		_		_		_
I.	Total fourth quarter	\$		\$	<u>-</u>	\$		\$	
1.	rotar roarti quartor	Ψ		Ψ	<u> </u>	Ψ		Ψ	
m.	Annual aggregate total			\$	_	\$	1,007,227		
••••				Ψ		Ψ	.,00.,==1		

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

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

CUSIP	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value at Time of OTTI	Date of Financial Instrument Where Reported
05535DCF9	\$ 432,085	\$ 410,505	\$ (21,580)	\$ 410,505	\$ 362,606	March 31, 2020
45071KDD3	77,176	69,653	(7,524)	69,653	67,033	March 31, 2020
65535VRK6	41,952	40,956	(995)	40,956	37,844	March 31, 2020
79548KXQ6	29,027	28,392	(635)	28,392	21,372	March 31, 2020
12669GWN7	220,746	216,237	(4,509)	216,237	214,278	March 31, 2020
57645LAA2	1,924,581	1,476,730	(447,851)	1,476,730	1,981,360	March 31, 2020
9393365V1	7,834	7,719	(116)	7,719	6,622	June 30, 2020
57643QAE5	534,784	441,679	(93,105)	441,679	574,564	June 30, 2020
74951PBT4	14,931	9,486	(5,445)	9,486	10,438	June 30, 2020
86359DMC8	1,421,078	1,306,900	(114,178)	1,306,900	1,202,568	June 30, 2020
05535DCF9	395,158	379,924	(15,234)	379,924	366,150	September 30, 2020
61750MAB1	537	519	(18)	519	380	September 30, 2020
9393365V1	7,420	7,328	(92)	7,328	6,783	September 30, 2020
12669GWN7	210,883	198,389	(12,494)	198,389	194,272	September 30, 2020
36298XAA0	1,347,196	1,307,547	(39,649)	1,307,547	1,239,480	September 30, 2020
36298XAB8	1,257,414	1,017,564	(239,850)	1,017,564	1,064,536	September 30, 2020
74951PBT4	7,333	3,381	(3,952)	3,381	10,145	September 30, 2020
Totals	\$ 7,930,135	\$ 6,922,909	\$ (1,007,227)	\$ 6,922,909	\$ 7,360,431	

- (4) As of September 30, 2020, 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
 \$ (8,744,773)

 2. 12 months or longer
 \$ (5,296,274)

b. The aggregate related fair value of securities with unrealized losses:

 1. Less than 12 months
 \$ 306,984,456

 2. 12 months or longer
 \$ 128,992,439

(5) No change

- e. Dollar repurchase agreements and/or securities lending transactions: The Company did not have any dollar repurchase agreements and/or securities lending transactions as of September 30, 2020.
- f. Repurchase agreements transactions accounted for as secured borrowing:
 - (1) The Company did not have any repurchase agreements as of September 30, 2020.
- g. Reverse repurchase agreements transactions accounted for as secured borrowing. The Company did not have any reverse repurchase agreements transactions accounted for as secured borrowing as of September 30, 2020.
- h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale as of September 30, 2020.
- i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase agreements transactions accounted for as a sale as of September 30, 2020.
- j. Real estate No change
- k. Low-Income Housing Tax Credit No change
- I. Restricted Assets No change
- m. Working capital finance investments: The Company did not invest in working capital finance investments as of September 30, 2020.
- n. Offsetting and netting of assets and liabilities: The Company reports derivative and repurchase agreement assets and liabilities as gross in the financial statements without offsetting as of September 30, 2020.
- o. 5GI Securities:

	Investment	Number of 5G	I Securities	Aggregate	BACV	Aggregate Fair Value		
		Current Year	urrent Year Prior Year Current		Prior Year	Current Year	Prior Year	
(1)	Bonds - AC	37	43	\$34,595,764	\$44,724,121	\$34,334,441	\$44,671,172	
(2)	LB&SS - AC	1	1	2,214,246	2,435,608	2,168,062	2,291,778	
(3)	Preferred Stock - AC	4	3	2,059,699	2,062,868	3,521,656	3,223,153	
(4)	Preferred Stock - FV		1		66,454		66,454	
(5)	Total (1+2+3+4)	42	48	\$38,869,709	\$49,289,051	\$40,024,159	\$50,252,557	

AC - Amortized Cost FV - Fair Value

- p. Short sales The Company does not engage in short sale transactions.
- q. Prepayment penalty and acceleration fees:

	 Nine Months Ended S	September 30, 2020
	 General Account	Separate Account
1. Number of CUSIPS	19	N/A
2. Aggregate amount of investment income	\$ 3,110,892	N/A

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

Note 7 - Investment Income - No change

Note 8 - Derivative Instruments

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

Note 9 - Income Taxes

In response to the COVID-19 pandemic, the CARES Act was signed into law on March 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 Company is currently evaluating the impact of the CARES Act, but does not expect that the business tax provisions of the CARES Act to have a material impact on the financial statements.

Note 10 - Information Concerning Parent, Subsidiaries and Affiliates

- The Company is a wholly owned subsidiary of MassMutual, a mutual insurance company domiciled in the Commonwealth of Massachusetts.
- b-c. On June 27, 2020, the Company declared \$173,000,000 of dividends to MassMutual for the six months ended June 30, 2020, which was paid in August 2020.

Note 11 - Debt

- a. No change
- b. The Company is not a member of the Federal Home Loan Bank (FHLB) therefore it has no FHLB funding agreements.

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

- a. Defined Benefit Plan:
 - (1-3) No change
 - (4) The Company did not have any defined benefit pension plans for which the reporting entity is directly liable.
 - (5-21) No change
- b-i. No change

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

(1-3) No change

(4) On June 27, 2020, a dividend in the amount of \$173,000,000 was declared by the Company to MassMutual, which was paid in August 2020.

(5-13) No change

Note 14 - Liabilities, Contingencies and Assessments

- Contingent commitments No change
- b. Assessments No change
- c. Gain contingencies No change
- d. Claims related to extra contractual obligations No change
- e. Joint and several liabilities No change
- f. All other contingencies:

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

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

Note 15 - Leases - No change

Note 16 - Information About Financial Instruments With Off-Balance Sheet Risk and Financial Instruments With Concentrations of Credit Risk - No change

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

- a. Transfers of receivables reported as sales No change
- b. Transfer and servicing of financial assets:
 - (1) No change
 - (2) The Company did not have any servicing assets or liabilities in 2020 or 2019.
 - (3) No change
 - (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2020 or 2019.
 - (5-7) No change
- c. Wash sales:
 - (1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days to enhance the Company's yield on its investment portfolio.
 - (2) The Company did not sell any securities with the NAIC Designation 3 or below, or unrated, through the nine months ended September 30, 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 - No change

Note 19 - Direct Premium Written/Produced By Managing General Agents/Third Party Administrators - No change

Note 20 - Fair Value Measurements

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

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

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

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

When available, the Company generally uses unadjusted quoted market prices from independent sources to determine the fair value of investments, and classifies such items within Level 1 of the fair value hierarchy. If quoted prices are not available, prices are derived from observable market data for similar assets in an active market or obtained directly from brokers for identical assets traded in inactive 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 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 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 are valued using cash flow projections from the Company's asset-liability management analysis.

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

				Sept	ember 30, 20	20			
	Level 1		Level 2		Level 3		let Asset Value (NAV)		Total
Financial assets:									
Bonds:	•	•	0.400.500	•	0.004.477	•		•	40 5 47 000
Industrial and miscellaneous	\$ -	\$	3,482,532	\$	9,064,477	\$	-	\$	12,547,009
Preferred stocks	-		-		119,989		-		119,989
Common stock - subsidiary and affiliates	16,782,637		-		1,884,157		-		18,666,794
Common stock - unaffiliated Derivatives:	325,634		-		3,464,522		-		3,790,156
			4 022 200 076						1 022 200 076
Interest rate swaps	-		1,033,208,076		-		-		1,033,208,076
Options	-		34,528,198		-		-		34,528,198
Currency swaps	-		48,063,691		-		-		48,063,69
Forward contracts Financial futures	70 577		1,469,286		-		-		1,469,286
Separate account assets	70,577 1,796,694,319		-		-		-		70,57 1,796,694,319
Total financial assets carried	1,790,094,319		<u> </u>		<u> </u>		-		1,790,094,51
at fair value	\$ 1,813,873,167	\$	1,120,751,783	\$	14,533,145	\$		\$ 2	2,949,158,09
Financial liabilities:									
Repurchase agreements									
Derivatives:									
Interest rate swaps	\$ -	\$	1,015,080,952	\$	-	\$	-	\$ 1	1,015,080,952
Options	-		5,893,282		-		-		5,893,282
Currency swaps	-		5,824,089		-		-		5,824,089
Forward contracts			1,923,811		-		-		1,923,81
Financial futures Total financial liabilities carried	5,557,391		-		-		-		5,557,39
at fair value	\$ 5,557,391	\$	1,028,722,134	\$	_	\$	_	\$	1,034,279,52
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u> </u>	-,,,			<u> </u>		<u>, </u>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
				Dec	ember 31, 20		let Asset Value		
	Level 1		Level 2		Level 3		(NAV)		Total
Financial assets:									
Bonds:									
Industrial and miscellaneous	\$ -	\$	4,241,356	\$	9,295,673	\$	-	\$	13,537,02
Preferred stocks	-		-		148,754		_		148,75
Common stock - subsidiary and affiliates	17,122,205		_		_		_		17,122,20
Common stock - unaffiliated	305,512				3,529,294				3,834,80
Derivatives:	303,312		-		3,329,294		-		3,634,60
Interest rate swaps	-		465,963,255		-		-		465,963,25
Options	-		30,937,928		_		_		30,937,92
Currency swaps	_		35,513,162		_		_		35,513,16
Forward contracts	_		513,418		_		_		513,41
Separate account assets	1,809,856,410		010,410		_		_		1,809,856,41
·	1,009,030,410								1,009,000,41
Total financial assets carried	¢ 4 007 004 407	æ	E27 460 440	Φ	10 070 701	ф.		Φ	0 077 406 06
at fair value	\$ 1,827,284,127	\$	537,169,119	ф	12,973,721	\$	-	Ф	2,377,426,96
Financial liabilities:									
Derivatives:									
Interest rate swaps	\$ -	\$	561,212,675	\$	_	\$	_	\$	561,212,67
Options	-		7,713,197		_		-		7,713,19
Currency swaps	_		4,143,150		_		_		4,143,15
Forward contracts	_		3,938,480		_		_		3,938,48
	-				-		-		
Credit default swaps	45 700 500		4,485		-		-		4,48
Financial futures - long positions	15,723,530		-		-		-		15,723,53
Total financial liabilities carried	A	_				•		_	F00 F0 =
at fair value	\$ 15,723,530	\$	577,011,987	\$	-	\$	-	\$	592,735,51

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

	Balance as of	Trar	nsfers	(1)	(I	Gains Losses) in	(Gains (Losses) in					Balance as of
	6/30/2020	In		Out	Ň	let Income		Surplus	Purchases	Issuances	Sales	Settlements	9/30/2020
Financial assets:								•					
Bonds:													
Industrial and miscellaneous	\$ 15,588,908	\$ -	\$	(6,345,439)	\$	3,629	\$	575,903	\$ (80,068)	\$ (473,110)	\$ -	\$ (205,346)	\$ 9,064,477
Preferred stocks	143,184	79,542		-		-		(102,737)	-	-	-	-	119,989
Common stocks - affiliated	-	-		-		-		8,908	1,875,249	-	-	-	1,884,157
Common stocks - unaffiliated	 3,260,124	-		-		(23,638)		61,017	143,795	51,929	(2,740)	(25,965)	3,464,522
Total financial assets	\$ 18,992,216	\$ 79,542	\$	(6,345,439)	\$	(20,009)	\$	543,091	\$ 1,938,976	\$ (421,181)	\$ (2,740)	\$ (231,311)	\$ 14,533,145

⁽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.

	Balance as of 01/01/2019	Trans	sfers	Out	•	Gains .osses) in et Income	Gains Losses) in Surplus	Pı	urchases	ls	suances	Sales	S	Settlements	Balance as of 12/31/2019
Financial assets:															
Bonds:															
Industrial and miscellaneous	\$ 4,289,614	\$ 5,778,836	\$	-	\$	(165,862)	\$ (208,043)	\$	44,766	\$	-	\$ 108,894	\$	(552,532)	\$ 9,295,673
Parent, subsidiaries and affiliates	6,384,098	-		(6,384,098)		-	-		-		-	-		-	-
Preferred stock	31,996	125,509		-		-	(20,786)		12,035		-	-		-	148,754
Common stock - unaffiliated	2,499,354	-		(25,232)		749,292	940,485		216,085		-	-		(850,690)	3,529,294
Total financial assets	\$ 13,205,062	\$ 5,904,345	\$	(6,409,330)	\$	583,430	\$ 711,656	\$	272,886	\$	-	\$ 108,894	\$	(1,403,222)	\$ 12,973,721

⁽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.

(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".

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

September 30, 2020

-						Net Asset	Not Practicable
	Aggregate	Admitted				Value	(Carrying
	Fair Value	Assets	Level 1	Level 2	Level 3	(NAV)	Value)
Financial assets:							
Bonds:							
U. S. government and agencies	3,459,758	\$ 3,424,926	\$ -	\$ 3,459,758	\$ -	\$ -	\$
All other governments	1,484,902	1,302,097	-	1,484,902	-	-	
States, territories and possessions	24,962,736	20,677,049	-	24,962,736	-	-	
Political subdivisions	18,949,942	15,733,251	-	18,949,942	-	-	
Special revenue	129,786,681	108,369,322	-	129,786,681	-	-	
Industrial and miscellaneous	4,176,296,559	3,833,681,275	-	2,230,070,078	1,946,226,481	-	
Parent, subsidiaries and affiliates	156,088,696	149,306,168	-	-	156,088,696	-	
Preferred stocks	6,472,923	5,148,250	-	-	6,472,923	-	
Common stock - subsidiary and affiliates ⁽¹⁾	18,666,794	18,666,794	16,782,637	-	1,884,157	-	
Common stock - unaffiliated	3,790,156	3,790,156	325,634	-	3,464,522	-	
Mortgage loans - commercial	826,950,075	798,412,808	-	-	826,950,075	-	
Mortgage loans - residential	169,908,446	169,292,859	-	-	169,908,446	-	
Cash, cash equivalents and							
short-term investments	309,080,735	309,080,735	53,292,972	255,787,763	-	-	
Derivatives:							
Interest rate swaps	1,033,208,076	1,033,208,076	-	1,033,208,076	-	-	
Options	34,528,198	34,528,198	-	34,528,198	-	-	
Currency swaps	48,063,691	48,063,691	-	48,063,691	-	_	
Forward contracts	1,469,286	1,469,286	_	1,469,286	-	-	
Financial futures	70,577	70,577	70,577	_	-	-	
Separate account assets	1,796,694,319	1,796,694,319	1,796,694,319	-	-	-	
Financial liabilities:							
Individual annuity contracts	3,691,052,031	3,014,475,155	-	_	3,691,052,031	-	
Supplementary contracts	62,951,821	62,328,536	-	_	62,951,821	-	
Derivatives:							
Interest rate swaps	1,015,080,952	1,015,080,952	-	1,015,080,952	-	_	
Options	5,893,282	5,893,282	_	5,893,282	-	-	
Currency swaps	5,824,089	5,824,089	_	5,824,089	-	-	
Forward contracts	1,923,811	1,923,811	_	1,923,811	-	-	
Financial futures	5,557,391	5,557,391	5,557,391				

⁽¹⁾ Common stock - subsidiary and affiliates does not include MML Bay State Life Insurance Company (MML Bay State), which had a statutory carrying value of \$303,156,523.

December 31, 2019 Net Not Asset Practicabl Admitted Aggregate Value (Carrying Fair Value Assets Level 1 Level 2 Level 3 (NAV) Value) Financial assets: 3,754,335 3,747,695 \$ 3,754,335 \$ \$ U. S. government and agencies All other governments 1.431.745 1.327.747 1.431.745 32,085,285 States, territories and possessions 32,085,285 28,787,937 Political subdivisions 20.476.532 18.252.991 20.476.532 Special revenue 130.334.983 114,496,247 130.334.983 Industrial and miscellaneous 3,708,095,870 3,439,425,093 1,783,391,075 1,924,704,795 Parent, subsidiaries and affiliates 203.525.192 7.350.929 201.286.011 208.636.940 Preferred stocks 8,612,629 7,389,131 8,612,629 Common stock - subsidiary and affiliates(1) 17.122.205 17.122.205 17.122.205 Common stock - unaffiliated 305.512 3.529.294 3.834.806 3.834.806 Mortgage loans - commercial 866,539,030 831,065,876 866,539,030 100,489,012 101.955.720 100.489.012 Mortgage loans - residential Cash, cash equivalents and 463,125,059 463,125,059 53,708,994 409.416.065 short-term investments Derivatives: Interest rate swaps 465.963.255 465.963.255 465.963.255 30,937,928 30,937,928 30,937,928 Options 35,513,162 35.513.162 35,513,162 Currency swaps Forward contracts 513 418 513 418 513 418 Separate account assets 1,809,856,409 1,809,856,409 1,809,856,409 Financial liabilities: Individual annuity contracts 3.640.908.800 2 990 883 311 3 640 908 800 81,548,634 Supplementary contracts 81,548,634 80,741,222 Derivatives: Interest rate swaps 561.212.675 561.212.675 561.212.675 Options 7,713,196 7,713,196 7,713,196 4.143.150 4.143.150 4.143.150 Currency swaps 3,938,480 3,938,480 3,938,480 Forward contracts Credit default swaps 4,485 4,485 4,485 Financial futures 15.723.530 15.723.530 15.723.530

d. As of September 30, 2020 and December 31, 2019, the Company had no investments where it was not practicable to estimate fair value.

Note 21 - Other Items

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

Business risks

The Company operates in a business environment subject to various risks and uncertainties. The principal risks include insurance and underwriting risks, investment and interest rate risks, currency exchange risk and credit risk. The combined impact of these risks could have a material, adverse effect on the Company's financial statements or result in operating losses in future periods. The Company employs the use of reinsurance, portfolio diversification, asset/liability management processes and other risk management techniques to mitigate the impact of these risks. This condensed risks and uncertainties disclosure should be read in conjunction with the disclosure in the Company's 2019 Annual Statement.

Insurance and underwriting risks

The Company prices its products based on estimated benefit payments reflecting assumptions with respect to mortality, morbidity, longevity, persistency, interest rates and other factors. If actual policy experience emerges that is significantly and adversely different from assumptions used in product pricing, the effect could be material to the profitability of the Company. The Company reinsures certain life 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.

⁽¹⁾ Common stock - subsidiary and affiliates does not include MML Bay State, which had a statutory carrying value of \$293,454,322.

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

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

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

Currency exchange risk

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

Credit and other market risks

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

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

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

The spread of the coronavirus, causing increased cases of COVID-19, around the world in 2020 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. Business interruption insurance recoveries No change
- e. State transferrable tax credits No change
- f. Subprime mortgage related risk exposure:
 - (1) No change
 - (2) No change
 - (3) Direct exposure through other investments.

				Nine	e Months Ended
		Sep	tember 30, 2020		
	Actual	Carrying	Fair		
Alt-A:	Cost	Value	Value		OTTI
a. Residential mortgage-backed securities \$	14,160,579	\$ 16,305,916	\$ 16,760,781	\$	1,837
b. Commercial mortgage-backed securities	-	-	-		-
c. Collateralized debt obligations	-	-	-		-
d. Structured securities	-	-	-		-
e. Equity investments in SCAs *	483,855	\$ 601,296	\$ 649,656	\$	-
f. Other assets	-	-	-		-
g. Total \$	14,644,434	\$ 16,907,212	\$ 17,410,437	\$	1,837

^{*} The Company's Subsidiary and Controlled Affiliate (SCA), MML Bay State, has investments in Alt-A and subprime mortgages. These investments comprise less than 1% of the Company's invested assets.

							Year Ended	
		Dec	ember 31, 201	9		December 31, 2019		
	Actual		Carrying		Fair			
Alt-A:	 Cost		Value		Value		OTTI	
a. Residential mortgage-backed securities	\$ 12,731,563	\$	14,951,778	\$	16,535,556	\$	42,030	
b. Commercial mortgage-backed securities	-		-		-		-	
c. Collateralized debt obligations	-		-		-		-	
d. Structured securities	-		-		-		-	
e. Equity investments in SCAs *	544,186		657,039		745,113		-	
f. Other assets	-		-		-			
g. Total	\$ 13,275,749	\$	15,608,817	\$	17,280,669	\$	42,030	

^{*} The Company's SCA, MML Bay State, has investments in Alt-A and subprime mortgages. These investments comprise less than 1% of the Company's invested assets.

- (4) The Company has no underwriting exposure to subprime mortgage risk through Mortgage Guaranty or Financial Guaranty insurance coverage.
- g. Retained asset accounts No change

Note 22 - Events Subsequent

Management of the Company has evaluated subsequent events through November 13, 2020, the date the financial statements were available to be issued to state regulators and subsequently on the Company's website. No events have occurred subsequent to the date of the financial statements.

Note 23 - Reinsurance - No change

Note 24 - Retrospectively Rated Contracts and Contracts Subject to Redetermination

a – d. No change

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

Note 25 - Change in Incurred Losses and Loss Adjustment Expenses

There was no increase to reserves in 2020 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which considered corrections of prior year errors.

Note 26 - Intercompany Pooling Arrangements - No change

<u>Note 27 – Structured Settlements</u> - No change

Note 28 - Health Care Receivables - No change

Note 29 - Participating Policies - No change

Note 30 - Premium Deficiency Reserves - No change

Note 31 - Reserves for Life Contracts and Annuity Contracts - No change

Note 32 - Analysis of Annuity Actuarial Reserves and Deposit Type Liabilities by Withdrawal Characteristics - No change

Note 33 - Analysis of Life Actuarial Reserves by Withdrawal Characteristics - No change

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

Note 35 - Separate Accounts - No change

Note 36 - Loss/Claim Adjustment Expenses - No change

GENERAL INTERROGATORIES

PART 1 - COMMON INTERROGATORIES

GENERAL

1.1	Did the reporting entity experience any material transactions requiring Domicile, as required by the Model Act?		Yes [] No [)	Х]		
1.2	If yes, has the report been filed with the domiciliary state?				Yes [] No []
2.1	Has any change been made during the year of this statement in the creporting entity?				Yes [] No [)	Х]
2.2	If yes, date of change:				· <u>-</u>		
3.1	Is the reporting entity a member of an Insurance Holding Company S is an insurer? If yes, complete Schedule Y, Parts 1 and 1A.					X] No []
3.2	Have there been any substantial changes in the organizational chart	since the prior quarter end?			Yes [] No []	Х]
3.3	If the response to 3.2 is yes, provide a brief description of those char	iges.					
3.4	Is the reporting entity publicly traded or a member of a publicly traded	d group?			Yes [] No [)	Х]
3.5	If the response to 3.4 is yes, provide the CIK (Central Index Key) cod	le issued by the SEC for the entity/group.					
4.1	Has the reporting entity been a party to a merger or consolidation dulif yes, complete and file the merger history data file with the NAIC.	ring the period covered by this statement	?		Yes [] No [)	X]
4.2	If yes, provide the name of the entity, NAIC Company Code, and state ceased to exist as a result of the merger or consolidation.	e of domicile (use two letter state abbrev	iation) for any entity th	at has			
	1 Name of Entity	2 NAIC Company Code	3 State of Domicile				
5.6.1	If the reporting entity is subject to a management agreement, including in-fact, or similar agreement, have there been any significant change of the	s regarding the terms of the agreement of	or principals involved?	Yes		[X] N/A 2/31/2019	[]
6.2	State the as of date that the latest financial examination report becar	ne available from either the state of domi	icile or the reporting e	ntity. This			
	date should be the date of the examined balance sheet and not the d					2/31/2014	
6.3	State as of what date the latest financial examination report became the reporting entity. This is the release date or completion date of the date).	e examination report and not the date of t	he examination (balar	nce sheet		5/31/2016	
6.4 6.5	By what department or departments? State of Connecticut Insurance Department Have all financial statement adjustments within the latest financial exstatement filed with Departments?	amination report been accounted for in a	subsequent financial	Yes	s [] No	[] N/A	[X]
6.6	Have all of the recommendations within the latest financial examination	on report been complied with?		Yes	s [X] No	[] N/A	[]
7.1	Has this reporting entity had any Certificates of Authority, licenses or revoked by any governmental entity during the reporting period?	registrations (including corporate registra	ation, if applicable) su	spended o	or Yes [] No [)	Х]
7.2	If yes, give full information:						
8.1	Is the company a subsidiary of a bank holding company regulated by	the Federal Reserve Board?			Yes [] No [2	Х]
8.2	If response to 8.1 is yes, please identify the name of the bank holding	g company.					
8.3	Is the company affiliated with one or more banks, thrifts or securities	firms?			Yes []	X] No []
8.4	If response to 8.3 is yes, please provide below the names and locatic regulatory services agency [i.e. the Federal Reserve Board (FRB), the Insurance Corporation (FDIC) and the Securities Exchange Commission (FDIC) and the Securities (FDIC) and the	e Office of the Comptroller of the Curren	cy (OCC), the Federal	Deposit	al		
	1 Affiliate Name	2 Location (City, State)	3 FRB		5 6 DIC SEC	7	
	Baring International Investment Limited	London, UK			YES		
	Barings LLC	Charlotte, NC			YES		
	Barings Securities LLC	Charlotte, NC			YES		
	MML Distributors, LLC	Enfield, CT			YES		
	MML Investment Advisers, LLC	Enfield, CT					
	MML Investors Services, LLC	Springfield, MA			YES		
	MML Strategic Distributors, LLC	Springfield, MASpringfield, MA			YES YES		
	MMLISI Financial Alliances, LLC The MassMutual Trust Company, FSB						
	THE Massmutual Hust Company, FSD	EIII I E I U, U I	·····	10			

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GENERAL INTERROGATORIES

9.1	Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or similar functions) of the reporting entity subject to a code of ethics, which includes the following standards? (a) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between person relationships; (b) Full, fair, accurate, timely and understandable disclosure in the periodic reports required to be filed by the reporting (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.	nal and professional	Yes [X]	No []
9.11	If the response to 9.1 is No, please explain:			
9.2 9.21	Has the code of ethics for senior managers been amended?		Yes []	No [X]
9.3 9.31	Have any provisions of the code of ethics been waived for any of the specified officers?		Yes []	No [X]
	FINANCIAL			
10.1 10.2	Does the reporting entity report any amounts due from parent, subsidiaries or affiliates on Page 2 of this statement? If yes, indicate any amounts receivable from parent included in the Page 2 amount:			
	INVESTMENT			
	Were any of the stocks, bonds, or other assets of the reporting entity loaned, placed under option agreement, or other use by another person? (Exclude securities under securities lending agreements.)	wise made available for	Yes [X]	No []
12.	Amount of real estate and mortgages held in other invested assets in Schedule BA:			
13.	Amount of real estate and mortgages held in short-term investments:			
14.1 14.2	Does the reporting entity have any investments in parent, subsidiaries and affiliates?		Yes [X]	NO []
		1 Prior Year-End Book/Adjusted Carrying Value	Воо	2 ent Quarter k/Adjusted rying Value
	Bonds	201,325,192		149,306,168
	Preferred Stock \$			
	Common Stock \$ Short-Term Investments \$ \$			321,823,317
14.24	Mortgage Loans on Real Estate \$			
	All Other			72,809,094
	Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26)			543,938,579
	Total Investment in Parent included in Lines 14.21 to 14.26 above			
15.1	Has the reporting entity entered into any hedging transactions reported on Schedule DB?		Yes [X]	No []
15.2	If yes, has a comprehensive description of the hedging program been made available to the domiciliary state?	Yes	[X] No [] N/A []
16.	For the reporting entity's security lending program, state the amount of the following as of the current statement date:			
	16.1 Total fair value of reinvested collateral assets reported on Schedule DL, Parts 1 and 2		\$	
	16.2 Total book adjusted/carrying value of reinvested collateral assets reported on Schedule DL, Parl	s 1 and 2	.\$	
	16.3. Total payable for securities landing reported on the liability page			

GENERAL INTERROGATORIES

					2				
itihank N.A	Name of Cus	stodian(s)	333 West 34t	h Street New	<u> York NY 10001</u>	ess			
P Morgan Chase Bar	k N.A		1 Chase Manh	attan Plaza,	19th Floor, Nev	York, NY 10005			
			801 Pennsylvania Avenue, Kansas City, MO 64105 2 Park Street Sydney, NSW 2000						
ITIDANK, N.A			. 2 Park Stree	t Sydney, NSW	2000				
or all agreements the		with the requirements of the NAIC	Financial Cond	lition Examine	rs Handbook, p	rovide the name,			
1 Name	(s)	2 Location(s)		(3 Complete Expla	nation(s)			
ave there been any yes, give full inform	•	<u> </u>	ustodian(s) identified in 17.1 during the current quarter?						
1 Old Cust	odian	2 New Custodian	Date	3 of Change		4 Reason			
ake investment ded ich. ["that have a	sisions on behalf on access to the investigation. Name of Firm	nvestment advisors, investment m of the reporting entity. For assets the stment accounts"; "handle secur 1 n or Individual	nat are manage rities"] 2 Affilia	tion					
FM Investors Pty L	td		U						
		ed in the table for Question 17.5, de more than 10% of the reporting e					Yes	[]	No [
		ed with the reporting entity (i.e. des nt aggregate to more than 50% of					Yes	[]	No [
or those firms or inc ble below.	ividuals listed in th	ne table for 17.5 with an affiliation	code of "A" (af	filiated) or "U"	(unaffiliated), pr	ovide the information for th	ne		
1		2			3	4			5 stment
Central Registration									gement ement
Depository Number		Name of Firm or Individual		Legal Entity	dentifier (LEI)	Registered With		(IMA)) Filed
06006 62754		ty Ltd				SEC		NO	
	2						•		
no, list exceptions: : 09/30/2020, 3 issu	es for 3 issuers di	Purposes and Procedures Manual of the desired of the filing requirements of following: Valid cusip/PPN, audit	of the NAIC Inv	estment Analy	sis Office been	followed?	•	[]	No [
no, list exceptions: : 09/30/2020, 3 issu	es for 3 issuers di one or more of the	d not meet the filing requirements following: Valid cusip/PPN, audit	of the NAIC Inv	estment Analy	sis Office been	followed?	•	[]	No [
no, list exceptions: 09/30/2020, 3 issues currently lack exception Totaled \$1 / self-designating 5 a. Documentatio security is not b. Issuer or oblig	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the representation necessary to per available.	d not meet the filing requirements following: Valid cusip/PPN, audit of all assets reporting entity is certifying the following a full credit analysis of the secontracted interest and principal process.	of the NAIC Involved the Purpose ted financials a common service of the NAIC Involved the Purpose of the NAIC Involved the Purpose of the NAIC Involved the	restment Analy as and Procedu nd/or executed as for each self- exist or an NAI	rsis Office been res Manual. Ti I legal documer designated 5GI C CRP credit ra	followed? ne majority of these tation.	•	[]	No [
no, list exceptions: 09/30/2020, 3 issusues currently lack cception Totaled \$1 / self-designating 5 a. Documentatio security is not b. Issuer or oblig c. The insurer ha	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the representation necessary to peravailable. Or is current on all s an actual expec	d not meet the filing requirements following: Valid cusip/PPN, audit of all assets reporting entity is certifying the following a full credit analysis of the sec	of the NAIC Involved the Purpose ted financials a cowing elements curity does not coayments.	restment Analy is and Procedund/or executed is for each self- exist or an NAI	rsis Office been tres Manual. Ti legal documer designated 5Gl C CRP credit ra	followed? ne majority of these tation. security: sting for an FE or PL	Yes		No [
no, list exceptions: 09/30/2020, 3 issues currently lack exception Totaled \$1 y self-designating 5 a. Documentation security is not b. Issuer or obligion. The insurer has the reporting enter the security with the security with the reporting of the NAIC Designation of the reporting of the report	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the representation of the securities of the secur	d not meet the filing requirements following: Valid cusip/PPN, audit of all assets reporting entity is certifying the following a full credit analysis of the secontracted interest and principal patation of ultimate payment of all co	of the NAIC Involved the Purpose and the Purpo	restment Analy as and Procedu and/or executed as for each self- exist or an NAI ast and principa ants of each self- exported for the RP in its legal of a state insura th the SVO.	res Manual. Tillegal documer designated 5Gl C CRP credit rall. designated PL designated PL security. apacity as a NF nce regulators.	followed? ne majority of these station. security: sting for an FE or PL GI security:	Yes	[X]	
no, list exceptions: 09/30/2020, 3 issues currently lack exception Totaled \$1 / self-designating 5 a. Documentation security is not b. Issuer or oblig c. The insurer has the reporting enter the security was the reporting enter the security was b. The reporting enter the c. The NAIC Desion a current prod. The reporting eas the reporting enter the reporting enter the security was self-designating enter the security was assigning FE to a	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the range of the available. Or is current on all s an actual expectity self-designated LGI securities, the as purchased prior entity is holding cap and in the securities of th	d not meet the filing requirements of following: Valid cusip/PPN, audit when of all assets reporting entity is certifying the following and fo	of the NAIC Involved the Purpose ted financials a cowing elements curity does not coayments. Contracted interest and the purpose television of the Purpose PL security were security and the security and th	restment Analy as and Procedu and/or executed as for each self- exist or an NAI ast and principa atts of each self- exported for the RP in its legal of by state insura th the SVO.	res Manual. Tillegal documer designated 5Gl C CRP credit rall. -designated PL security. apacity as a NF nce regulators.	followed?	Yes	[X]	No [
no, list exceptions: 09/30/2020, 3 issues currently lack exception Totaled \$1 / self-designating 5 a. Documentation security is not b. Issuer or oblig c. The insurer has the reporting ent by self-designating Pa. The security was b. The reporting end the reporting east the reporting east the reporting end as the reporting end the reporting end the reporting end to	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the representation of the estate of the est	d not meet the filing requirements is following: Valid cusip/PPN, audit % of all assets reporting entity is certifying the following and t	of the NAIC Involved the Purpose ted financials a cowing elements curity does not coayments. Intracted interest Designation reby an NAIC CF or examination and PL security withing entity is ce	restment Analy as and Procedu nd/or executed as for each self- exist or an NAI st and principa ats of each self- eported for the RP in its legal of by state insura th the SVO. Tifying the follow eported for the RP in its legal of the self- exist of each self- eported for the RP in its legal of the self- exist of each self- eported for the RAIC CRP in it	res Manual. TI I legal documer designated 5GI C CRP credit ra I. designated PL security. apacity as a NF nce regulators. wing elements security. s legal capacity	followed? ne majority of these station. security: sting for an FE or PL GI security: RSRO which is shown of each self-designated as an NRSRO prior to	Yes	[X]	No [
no, list exceptions: 09/30/2020, 3 issues currently lack exception Totaled \$1 / self-designating 5 a. Documentation security is not be lissuer or obliging c. The insurer has the reporting entity with the security of the security has a signing FE to a security has a secu	es for 3 issuers dione or more of the 4,403,640 or 0.32 GI securities, the rancessary to per available. Or is current on all s an actual expectity self-designated LGI securities, the sapurchased prior was derived the security is holding called a public designated Schedule BA non-repurchased prior entity is holding called a public credit ray.	d not meet the filing requirements in following: Valid cusip/PPN, audit which of all assets reporting entity is certifying the following and the following a	of the NAIC Involved the Purpose and financials a cowing element: curity does not coayments. Intracted interest and NAIC CF or examination as PL security with the purpose and the purpose of the purpose	restment Analysis and Procedund/or executed of the exist or an NAI st and principal of the RP in its legal of the RP in its legal of the SVO. Tifying the folion of the exported for the exported for the exported for the NAIC CRP in its legal of the	res Manual. TI I legal documer designated 5GI C CRP credit ra I. designated PL security. apacity as a NF nce regulators. wing elements security. s legal capacity	followed? ne majority of these station. security: sting for an FE or PL GI security: RSRO which is shown of each self-designated as an NRSRO prior to	Yes	[X]	No [

GENERAL INTERROGATORIES

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

Life and	Accident Health Companies/Fraternal Benefit Societies: Report the statement value of mortgage loans at the end of this reporting period for the following categories:		1 Amount
	1.1 Long-Term Mortgages In Good Standing		Amount
	1.11 Farm Mortgages	\$	
	1.12 Residential Mortgages	.\$	169,292,859
	1.13 Commercial Mortgages	\$	798,412,811
	1.14 Total Mortgages in Good Standing	.\$	967,705,670
	1.2 Long-Term Mortgages In Good Standing with Restructured Terms		
	1.21 Total Mortgages in Good Standing with Restructured Terms	\$	
	1.3 Long-Term Mortgage Loans Upon which Interest is Overdue more than Three Months		
	1.31 Farm Mortgages	\$	
	1.32 Residential Mortgages	.\$	
	1.33 Commercial Mortgages	\$	
	1.34 Total Mortgages with Interest Overdue more than Three Months	.\$	
	1.4 Long-Term Mortgage Loans in Process of Foreclosure		
	1.41 Farm Mortgages		
	1.42 Residential Mortgages	\$	
	1.43 Commercial Mortgages	\$	
	1.44 Total Mortgages in Process of Foreclosure	\$	
1.5	Total Mortgage Loans (Lines 1.14 + 1.21 + 1.34 + 1.44) (Page 2, Column 3, Lines 3.1 + 3.2)	\$	967,705,670
1.6	Long-Term Mortgages Foreclosed, Properties Transferred to Real Estate in Current Quarter		
	1.61 Farm Mortgages	\$	
	1.62 Residential Mortgages	\$	
	1.63 Commercial Mortgages	\$	
	1.64 Total Mortgages Foreclosed and Transferred to Real Estate	.\$	
2.	Operating Percentages:		
	2.1 A&H loss percent		%
	2.2 A&H cost containment percent		%
	2.3 A&H expense percent excluding cost containment expenses		%
3.1	Do you act as a custodian for health savings accounts?		Yes [] No [X]
3.2	If yes, please provide the amount of custodial funds held as of the reporting date	\$	
3.3	Do you act as an administrator for health savings accounts?		Yes [] No [X]
3.4	If yes, please provide the balance of the funds administered as of the reporting date	.\$	
4.	Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states?		Yes [X] No []
4.1	If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of domicile of the reporting entity?		Yes [] No []
Fratern 5.1	In all cases where the reporting entity has assumed accident and health risks from another company, provisions should be made in this statement on account of such reinsurances for reserve equal to that which the original company would have been required to establish had it retained the risks. Has this been done?	Yes [] No [] N/A []
5.2	If no, explain:		
6.1	Does the reporting entity have outstanding assessments in the form of liens against policy benefits that have increased surplus?		Yes [] No []
6.2	If yes, what is the date(s) of the original lien and the total outstanding balance of liens that remain in surplus?		

Date	Outstanding Lien Amount

SCHEDULE S - CEDED REINSURANCE

Showing All New Reinsurance Treaties - Current Year to Date

1	2	3	4	5	6	7	8	9	10
									Effective Date of
								Certified	Date of
NAIC					Type of	Type of		Reinsurer	Certified
Compan	/ ID	Effective		Domiciliary	Reinsurance	Business		Rating	Reinsurer
Code	Number	Date	Name of Reinsurer	Jurisdiction	Ceded	Ceded	Type of Reinsurer	(1 through 6)	Rating
82627	06-0839705	10/29/2019	Swiss Re Life & Health America (SRI3)	MO		XXXL	Authorized		
82627	06-0839705	10/29/2019	Swiss Re Life & Health America (SRI4)	MO		XXXL	Authorized		

SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

		Active Status	Life Insurance	Annuity	Premiums, Including Policy, Membership	Other	Total Columns	Deposit-Ty
	States, Etc.	(a)	Premiums	Considerations	and Other Fees	Considerations	2 Through 5	Contract
1. 2.	AlaskaAk	L	1,568,154 42,506	4,780,672 431,300			6,348,826 473,806	
3.	,	L	2,358,362				7,654,230	
4.		L	345,606	3,274,578			3,620,184	
5.		L		60,029,871			75,648,314	
6.	Colorado CO	L	1,380,702	9,289,683			10,670,385	
7. 8.	Connecticut	L	4,905,966	17,530,051			22,436,017	
8. 9.	Delaware DE	L	130 , 128 1 , 290 , 079	5, 161, 323 993, 431			5,291,451 2,283,510	
10.	Florida Fl	L	14,393,409	51,480,955			65,874,364	
1.	GeorgiaGA	<u>_</u>	2,930,580	9,217,235			12,147,815	
2.	Hawaii HI	L	1,505,563	2,993,297			4,498,860	
3.		L		5,821,619			6,077,261	
4.	Illinois IL	<u>Ļ</u>	3,860,757	26,049,086			29,909,843	
5. 6.	Indiana IN Iowa IA	L	1,957,830 851,391	9,718,976 4,477,639			11,676,806 5,329,030	
7.	Kansas KS	L	870,600	2,365,441			3,236,041	
8.		L	839,844	5, 100, 698			5,940,542	
9.	LouisianaLA	L	954,973	9,225,377			10 , 180 , 350	
0.	Maine ME	L	271,062	2,969,500			3,240,562	
1.	Maryland MD	L		13,515,512			18,404,654	ļ
2. 3.	Massachusetts MA Michigan MI	L	3,601,415	30,580,719			34, 182, 134	l
3. 4.	Minnesota	L	3, 124, 137 3, 190, 721	25,206,764 9,881,377			28,330,901 13,072,098	l
5.	Mississippi	L	1.820.477	3.875.486			5,695,963	
6.	Missouri MO	L	, ,	11,293,938			12,821,340	
7.	Montana MT	L	164,863	1,044,290			1, 209, 153	
8.		<u>Ļ</u>	555,642	3,948,657			4,504,299	
9.	Nevada	L	961,458	2,353,717			3,315,175	
0. 1.	New Hampshire	L	875,680 7,323,140	8,446,402 39,927,681			9,322,082 47,250,821	
2.	New Mexico	L		39,927,681			47,250,821	
3.	New York	N	4,338,636	1,222,846			5,561,482	
4.	North CarolinaNC	L	4,771,658	17,054,895			21,826,553	
5.	North Dakota	L	16, 157	2,744,184			2,760,341	
6.	Ohio OH	L	3,450,764	24,093,818			27,544,582	
7. 8.	Oklahoma OK Oregon OR	L	1,305,803 587,776	2,034,509 4,773,059			3,340,312	
8. 9.	Pennsylvania	L L		4,773,059			5,360,835 70,010,067	
0.	Rhode Island RI	L	452,616	5,334,768			5,787,384	
1.	South Carolina SC	L	2,281,504	5, 104, 475			7,385,979	
2.	South Dakota	L	61,000	792,394			853,394	
3.		Ļ	2,863,338	24,262,221			27, 125, 559	
4.	Texas TX	L		35,388,879			43,810,735	
5. 6.	Utah UT Vermont VT	L	1,398,756 318.382	3,263,087 2,450,990			4,661,843 2,769,372	
·7.			4.040.592	2,450,990				
8.	Washington WA	L	1,476,763	4,032,383			5,755,792	
19.	West Virginia WV		447,412	2,292,850			2,740,262	
0.	Wisconsin WI	L	1,347,775	14, 176, 693			15,524,468	
1.	Wyoming	L	117,465	407,935			525,400	
2. 3.	American Samoa	N	110				110	
3. 4.	D D:	NL	113 2,621,346	1.910.767			113 4.532.113	
4 . 5.	110 15 1 1 1	N	2,621,346	1,910,767			4,552,113	
6.	Northern Mariana Islands MP	N						
7.	Canada CAN	N	10,080				10,080	
8.	Aggregate Other Aliens OT	XXX	68,504	40,000			108 , 504	
9. 0.	Subtotal Reporting entity contributions for employee benefits	XXX	132 , 172 , 115	629,261,086			761,433,201	
U.	plans	XXX						
1.	Dividends or refunds applied to purchase paid-up							
2.	additions and annuities Dividends or refunds applied to shorten endowment	XXX						l
۷.	or premium paying period	XXX						
3.	Premium or annuity considerations waived under							
4	disability or other contract provisions	XXX					1, 112, 113	
4. 5.	Aggregate or other amounts not allocable by State Totals (Direct Business)	XXX		629,261,086			762.545.314	
6.	Plus Reinsurance Assumed	XXX	133,204,220	029,201,000				
7	T.	XXX		629,261,086			762,545,314	
8.	Less Reinsurance Ceded.	XXX	92,840,114	460,576,411			553,416,525	
9.	Totals (All Business) less Reinsurance Ceded	XXX	40,444,114	168,684,675			209, 128, 789	
Ω4	DETAILS OF WRITE-INS	1001	00 501	40.000			400 501	
01. 02.		XXX	68,504	40,000			108,504	l
02.		XXX		L				L
	Summary of remaining write-ins for Line 58 from							
	overflow page	XXX						
99.	Totals (Lines 58001 through 58003 plus	XXX	68,504	40,000			108,504	
01.	58998)(Line 58 above)	XXX	00,304	40,000			100,304	
02.		XXX						
03.		XXX						
98.	Summary of remaining write-ins for Line 94 from							
aa	overflow page	XXX						
JJ.	94 above)	XXX						
ctive	e Status Counts:		RG		- Registered - No			

PART 1 – ORGANIZATIONAL CHART

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

	Federal Tax ID	NAIC Co Code	State of Domicile
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 I I LLC	None		Delaware
MM Global Capabilities I II LLC	None		Delaware
MM/Barings Multifamily TEBS 2020 LLC	None		Delaware
Barings Ascend 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
MSP-SC, LLC	04-1590850		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity LLC	04-1590850		Delaware
MassMutual Private Equity Funds LLC	04-1590850		Delaware
MassMutual Intellectual Property LLC	04-1590850		Delaware
Trad Investments I LLC	None		Delaware
EM Opportunities LLC	None		Delaware
MassMutual MCAM Insurance Company, Inc.	None		Vermont
Jefferies Finance LLC	27-0105644		Delaware
APEX Credit Partners LLC	None		Delaware
Jefferies Credit Partners LLC	None		Delaware
Jefferies Credit Management LLC	None		Delaware
Jefferies Private Credit GP LLC	None		Maryland
Jefferies Private Credit Fund LP	None		Delaware
Jefferies Private Credit BDC Inc.	None		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Fund III LLC	None		Delaware
JFIN Fund VI LLC	None		Delaware
JFIN Asset Management LLC	None		Delaware

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

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

	Federal Tax ID	NAIC Co Code	State of Domicile
JFAM GP LLC	None		Delaware
JFAM GP LP	None		Delaware
Jefferies Direct Lending Fund C LP	None		Delaware
Jefferies DLF C Holdings LLC	None		Delaware
Jefferies Direct Lending Fund C SPE LLC	None		Delaware
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Revolver Holdings III LLC	None		Delaware
JFIN Revolver SPE III 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 High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO 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
Apex Credit CLO 2015-II Ltd.*	None		Cayman Islands
JFIN Revolver CLO 2015 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2018 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2019-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2020 Ltd.	None		Cayman Islands
JFIN Revolver Fund, L.P.	None		Delaware
Apex Credit CLO 2016 Ltd.	None		Cayman Islands
Apex Credit CLO 2017 Ltd.	None		Cayman Islands
Apex Credit CLO 2017-II Ltd.	None		Cayman Islands
Apex Credit CLO 2019-II Ltd.*	None		Cayman Islands
Apex Credit CLO 2020 Ltd.	None		Cayman Islands
MassMutual Mortgage Lending LLC	None 04-1590850		Delaware
MassMutual Retirement Services, LLC			Delaware
MM Copper Hill Road LLC	04-1590850		Delaware

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

	Federal Tax ID	NAIC Co Code	State of Domicile
MM Investment Holding	None		Cayman Islands
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2013-A	90-1005837		Delaware
MMAF Equipment Finance LLC 2014-A	36-4785301		Delaware
MMAF Equipment Finance LLC 2015-A	38-3969560		Delaware
MMAF Equipment Finance LLC 2016-A	32-0489588		Delaware
MMAF Equipment Finance LLC 2017-A	35-2590691		Delaware
MMAF Equipment Finance LLC 2017-B	32-0546197		Delaware
MMAF Equipment Finance LLC 2018-A	82-5335801		Delaware
MMAF Equipment Finance LLC 2019-A	83-3722640		Delaware
MMAF Equipment Finance LLC 2019-B	None		Delaware
Rozier LLC	None		Delaware
MML Private Placement Investment Company I, LLC	04-1590850		Delaware
MML Private Equity Fund Investor LLC	04-1590850		Delaware
MM Private Equity Intercontinental LLC	04-1590850		Delaware
Pioneers Gate LLC	45-2738137		Delaware
MassMutual Holding LLC	04-2854319		Delaware
Fem Street LLC	37-1732913		Delaware
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 None		Delaware
MassMutual Ventures US III LLC			Delaware
Open Alternatives LLC	None		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
MML Investors Services, LLC	04-1590850 04-1590850		Massachusetts Massachusetts
MML Insurance Agency, LLC	04-1230020		iviassaciiusetts

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

PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
MMLISI Financial Alliances, LLC	41-2011634		Delaware
LifeScore Labs, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
Baring Asset Management (Asia) Holdings Limited	98-0524271		Hong Kong, Special Administrative Region of China
Baring International Fund Managers (Bermuda) Limited	98-0457465		Bermuda
Baring Asset Management (Asia) Limited	98-0457463		Hong Kong, Special Administrative Region of China
Baring Asset Management Korea Limited	None		Korea
Barings Investment Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Barings Overseas Investment Fund Management (Shanghai) Limited	None		Hong Kong, Special Administrative Region of China
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC
Barings Japan Limited	98-0236449		Japan
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 Finland Oy	None		Finland
Barings Netherlands B.V.	None		Netherlands
Barings Real Estate UK Holdings Limited	None		Delaware
BREAE AIFM LLP	None		United Kingdom
Barings Real Estate Advisers (Continental Europe) Limited	98-0654401		United Kingdom
Barings Real Estate Advisers Europe LLP	98-0654388		United Kingdom
Barings Real Estate Advisers Europe Finance LLP	98-0654412		United Kingdom
Barings Real Estate GmbH	98-1194368		Germany
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 Asset Management GmbH	98-0465031		Germany
Baring International Fund Managers (Ireland) Limited	98-0524272		Ireland

None

Switzerland

Baring Asset Management Switzerland Sàrl

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

	<u>Federal Tax ID</u>	NAIC Co Code	State of Domicile
Baring France SAS	98-0497550		France
Baring Fund Managers Limited	98-0457586		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Baring Pension Trustees Limited	98-0457574		United Kingdom
Baring Investment Services Limited	98-0457578		United Kingdom
Barings Core Fund Feeder I GP S.à.r.1.	None		Luxembourg
Barings Investment Fund (LUX) GP S.àr.1.	None		Luxembourg
Barings BME GP S.à.r.l.	None		United Kingdom
Barings GPC GP S.à.r.1.	None		Luxembourg
Barings European Core Property Fund GP Sa.r.1	None		United Kingdom
Barings Umbrella Fund (LUX) GP S.à.r.1.	None		Luxembourg
PREIF Holdings Limited Partnership	None		United Kingdom
Almack Mezzanine GP III Limited	None		United Kingdom
Almack Holding Partnership GP Limited	None		United Kingdom
Almack Mezzanine Fund Limited	None		United Kingdom
Almack Mezzanine Fund II Limited	None		United Kingdom
Barings (U.K.) Limited	98-0432153		United Kingdom
Barings Multifamily Capital Holdings LLC	None		Delaware
Barings Multifamily Capital LLC	None		Michigan
Barings Multifamily Capital Corporation	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		California
Chassis Acquisition Holding LLC	81-2244465		Delaware
CRA Aircraft Holding LLC*	81-4258759		Delaware
Aland Royalty Holdings LP	None		Delaware
ASM SIP, LP	None		Cayman Islands
Intermodal Holding II LLC	46-2344300		Delaware
Milestone Acquisition Holding, LLC.	47-3055009		Delaware
Novation Companies, Inc.	None		Maryland
Red Lake Ventures, LLC	46-5460309		Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
Techquity, LP	None		Delaware
U.S. Pharmaceuticals Holdings I, LLC	46-0687392		Delaware
U.S. Pharmaceuticals Holdings II, LLC	47-5436800		Delaware
Validus Pharmaceuticals LLC	None		Delaware
VGS Acquisition Holding, LLC	None		Delaware
Aland Royalty GP, LLC	None		Delaware
Alaska Future Fund GP, LLC	None		Delaware
BAI Funds SLP, LLC	None		Delaware
BAI GP, LLC	None		Delaware

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MassMutual International LLC

MML Management Corporation

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

		Federal Tax ID	NAIC Co Code	State of Domicile	
	Barings Alternative Investments SLP, LLC	None		Delaware	
	Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware	
	Barings Investment Series LLC	None		Delaware	
	Barings Capital Investment LLC	None		Maryland	
	Barings Emerging Generation Fund GP, LLC	None		Delaware	
	Barings Global Investment Funds (U.S.) Management LLC	04-1590850		Delaware	
	Barings ABIF SLP, LLC	None		Delaware	
	Barings CLO Investment Partners GP, LLC	None		Delaware	
	Barings Core Property Fund GP LLC	None		Delaware	
	Barings Direct Lending GP Ltd.	None		Cayman Islands	
	Barings Global Energy Infrastructure Advisors, LLC	None		Delaware	
	Barings Global Real Assets Fund GP, LLC	None		Delaware	
	Barings GPSF	None		Delaware	
	Barings Multi Asset Income Fund	None		Hong Kong	
	Barings North American Private Loan Fund Management, LLC	None		Delaware	
	Barings North American Private Loan Fund Management II, LLC	None		Delaware	
	Barings/LAZ Parking Fund GP LLC	None		Delaware	
	Barings Small Business Fund LLC	None		Delaware	
	Benton Street Advisors, Inc.	98-0536233		Cayman Islands	
	BRECS VII GP LLC	None		Delaware	
	CCM Fund I REIT Manager LLC	None		Delaware	
	CEMF I GP LLC	None		Delaware	
	CHY Venture GP LLC	None		Delaware	
	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	
utual International LLC		04-3313782		Delaware	
MassMutual Solution		None		Delaware	
	ch (Asia) Limited	None		Hong Kong	
Yunfeng Financial G		None		Hong Kong	
MassMutual Asia Lir		None		Hong Kong	
Ianagement Corporation		04-2443240		Massachusetts	
MassMutual Internati	ional Holding MSC, Inc.	04-3548444		Massachusetts	

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	Federal Tax ID	NAIC Co Code	State of Domicile
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
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 I LP*	None		United Kingdom
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 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
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Barings CLO Ltd. 2017-I	None		Cayman Islands
Barings CLO 2018-III	None		Cayman Islands
Barings CLO 2018-IV	None		Cayman Islands
Barings CLO 2019-I	None		Cayman Islands
Barings CLO 2019-II	98-1473665		Cayman Islands
Barings CLO 2019-III	None		Cayman Islands
Barings CLO 2019-IV	None		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
Babson Euro CLO 2016-I BV	None		Netherlands
Barings Euro CLO 2019-I	3603726OH		Ireland
Barings Euro CLO 2019-II	None 82-5330194		Ireland
Barings Global Em. Markets Equity Fund			North Carolina
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands

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

	Federal Tax ID NAIC Co Code	State of Domicile
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 Dividends Champion Fund	None	Ireland
Barings Middle Market CLO 2017-I Ltd & LLC	None	Cayman Islands
Barings Middle Market CLO 2018-I	None	Cayman Islands
Barings Middle Market CLO 2019-I	None	Cayman Islands
Barings North American Private Loan Fund LP	38-4010344	Delaware
Barings RE Credit Strategies VII LP	98-1332384	Delaware
Baring International Small Cap Equity Fund	26-4142796	Delaware
Barings CLO Investment Partners LP	81-0841854	Delaware
Barings Real Estate European Value Add I SCSp*	None	United Kingdom
Braemar Energy Ventures I, L.P. *	None	Delaware
Barings European Core Property Fund SCSp	None	Luxembourg
Benchmark 2018-B2 Mortgage Trust	38-4059932	New York
Benchmark 2018-B4	None	New York
Benchmark 2018-B8	38-4096530	New York
Braselton Point LLC	04-1590850	Delaware
Barings Core Property Fund LP	20-5578089	Delaware
Cornerstone Real Estate Fund VIII LP	27-0547156	Delaware
Cornerstone Real Estate Fund X LP	46-5432619	Delaware
Cornerstone Permanent Mortgage Fund III LLC	35-2531693	Massachusetts
Cornerstone Permanent Mortgage Fund IV LLC	61-1793735	Massachusetts
GASL Holdings, LLC	82-2932156	Delaware
Gateway Mezzanine Partners II LP*	90-0991195	Delaware
Great Lakes III, L.P.	37-1708623	Delaware
JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012	New York
JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059	New York
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 Two LP*	04-1590850	Delaware
HB Naples Golf Owner LLC	45-3623262	Delaware
MM Debt Participations LLC	81-3000420	Delaware
RB Apartments LLC	82-4411267	Delaware
Reston Arboretum LLC	75-2901061	Delaware
Rockville Town Center LLC	54-2055778	Virginia
Somerset Special Opportunities Fund L.P.*	20-8856877	Delaware
SouthPointe Industrial LLC	04-1590850	Delaware

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PART 1 – ORGANIZATIONAL CHART

Federal Tax ID NAIC Co Code State of Domicile

	rederal Tax ID	NAIC Co Code	State of Domiche
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
Tower Square Capital Partners IV-A, L.P.	80-0920367		Delaware
Trailside MM Member LLC*	04-1590850		Delaware
Washington Gateway Two LLC*	83-1325764		Delaware
Washington Gateway Three LLC*	32-0574045		Delaware
West 46 th Street Hotel LLC	05-1590850		Delaware
Barings Affiliates & Funds:			
Barings Emerging Markets Debt Short Duration Fund	None		Ireland
Babson Capital Loan Strategies Master Fund LP	None		Cayman Islands
Barings Global High Yield Fund	47-3790192		Massachusetts
Barings Total Return Bond Fund	47-3734770		Massachusetts
CCIC Fund	None		Peoples Republic of China
Great Lakes II LLC*	71-1018134		Delaware
Barings Real Estate Affiliates & Funds:			
Wood Creek Venture Fund LLC	04-1590850		Delaware
50 Liberty LLC*	36-4823011		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
Budapester Strasse LLC	81-4382111		Delaware
Calgary Railway Holding LLC*	82-2285211		Delaware
Combrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone California Mortgage Fund III LLC	95-4207717		California
Cornerstone Fort Pierce Development LLC*	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Cornerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA Madison Member LLC	81-0890084		Delaware
CCB Montford Park LLC*	82-1563809		Delaware
Danville Riverwalk Venture, LLC	82-2783393		Delaware
Fan Pier Development LLC*	20-3347091		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
MM Island Member LLC	04-1590850		Delaware
NoHo West Venture LLC	83-0881588		Delaware
PACO France Logistics 2 LLC	04-1590850		Delaware
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
Sawgrass Village Shopping Center LLC*	27-2977720		Delaware

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

	<u>Federal Tax ID</u>	NAIC Co Code	State of Domicile
Spain Avalon Holding LLC	04-1590850		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 Barings Dynamic Allocation Fund	45-3168892		Massachusetts
MassMutual Premier Focused International Fund	02-0754273		Massachusetts
MassMutual Premier Main Street Fund	51-0529328		Massachusetts
MassMutual Premier Strategic Emerging Markets Fund	26-3229251		Massachusetts
MassMutual Premier Value Fund	04-3277550		Massachusetts
MassMutual Select Funds:			
MassMutual Select Diversified International Fund	14-1980900		Massachusetts
MassMutual Select Diversified Value Fund	01-0821120		Massachusetts
MassMutual Select Fundamental Growth Fund	04-3512593		Massachusetts
MassMutual Select Large Cap Value Fund	04-3513019		Massachusetts
MassMutual Select Mid-Cap Value Fund	42-1710935		Massachusetts
MassMutual Select Small Capital Value Equity Fund	02-0769954		Massachusetts
MassMutual Select Small Company Value Fund	04-3584140		Massachusetts
MassMutual Select T. Rowe Price Retirement 2005 Fund	82-3347422		Massachusetts
MassMutual Select T. Rowe Price Retirement 2010 Fund	82-3355639		Massachusetts
MassMutual Select T. Rowe Price Retirement 2015 Fund	82-3382389		Massachusetts
MassMutual Select T. Rowe Price Retirement 2020 Fund	82-3396442		Massachusetts
MassMutual Select T. Rowe Price Retirement 2025 Fund	82-3417420		Massachusetts
MassMutual Select T. Rowe Price Retirement 2030 Fund	82-3430358		Massachusetts
MassMutual Select T. Rowe Price Retirement 2035 Fund	82-3439837		Massachusetts
MassMutual Select T. Rowe Price Retirement 2040 Fund	82-3451779		Massachusetts
MassMutual Select T. Rowe Price Retirement 2045 Fund	82-3472295		Massachusetts
MassMutual Select T. Rowe Price Retirement 2050 Fund	82-3481715		Massachusetts
MassMutual Select T. Rowe Price Retirement 2055 Fund	82-3502011		Massachusetts
MassMutual Select T. Rowe Price Retirement 2060 Fund	82-3525148		Massachusetts
MassMutual Select T. Rowe Price Retirement Balanced Fund	82-3533944		Massachusetts
MML Series Investment Funds:	46.40.000		
MML Series International Equity Fund	46-4257056		Massachusetts
MML Series Investment Funds II:	47.2517222		36 1 1
MML Series II Asset Momentum Fund	47-3517233 47-3520636		Massachusetts Massachusetts
MML Series II Dynamic Bond Fund	47-3529636 47-3544639		
MML Series II Equity Rotation Fund	47-3544629 47-3550064		Massachusetts Massachusetts
MML Series II Special Situations Fund MassMutual RetireSMART Funds:	47-3559064		iviassachusetts
MassMutual RetireSMART 2015 Fund	27-1933828		Massachusetts
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^{*}This entity is owned by another or multiple entities in the group. Please refer to Sch Y Part 1A for the ownership and percentage information.

PART 1 – ORGANIZATIONAL CHART

Federal Tax ID NAIC Co Code State of Domicile

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MassMutual RetireSMART 2035 Fund	27-1933380	Massachusetts
MassMutual RetireSMART 2045 Fund	27-1932769	Massachusetts
MassMutual RetireSMART 2055 Fund	46-3289207	Massachusetts
MassMutual RetireSMART 2060 Fund	47-5326235	Massachusetts
MassMutual RetireSMART Conservative Fund	45-1618155	Massachusetts
MassMutual RetireSMART Growth Fund	45-1618222	Massachusetts
MassMutual RetireSMART In Retirement Fund	03-0532464	Massachusetts
MassMutual RetireSMART Moderate Fund	45-1618262	Massachusetts
MassMutual RetireSMART Moderate Growth Fund	45-1618046	Massachusetts

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

SCHEDULE Y

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Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
	•					,	Massachusetts Mutual Life Insurance Company			Massachusetts Mutual Life Insurance	,	Ĭ	, , , , , , , , , , , , , , , , , , , ,	` ′	
0435	Massachusetts Mut Life Ins Co	65935	04-1590850	3848388			(MMLIC)	MA	UDP	Company	Ownership.	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0435	CM Life Ins Co	93432	06-1041383				C.M. Life Insurance Company	CT	RE	Company	Ownership	100.000	MMLIC		
0435	MML Baystate Life Ins Co	70416	43-0581430				MML Bay State Life Insurance Company	CT	IA	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		
										Massachusetts Mutual Life Insurance					
0000							CML Global Capabilities LLC	DE	DS	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000							MM Global Capabilities LLC	DE	DS	Company	Ownership	100.000	MMLIC		
							MassMutual Global Business Services India			Massachusetts Mutual Life Insurance					
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										Massachusetts Mutual Life Insurance					
0000							MM Global Capabilities (Netherlands) B.V	NLD	DS	Company	Ownership	100.000	MMLIC		
							MassMutual Global Business Services Romania			Massachusetts Mutual Life Insurance					
0000							S.R.L.	ROU	DS	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
000Q							MM Global Capabilities II LLC	DE	DS	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
000Q							MM Global Capabilities III LLC	DE	DS	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000							MM/Barings Multifamily TEBS 2020 LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000							MML Special Situations Investor LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			47-5322979				Timberland Forest Holding LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.000	MMLIC		
0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	Wood Creek Capital Management LLC	. Management		MMLIC		
0000							Lyme Adirondack Forest Company, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
0000							Lyme Adirondack Timberlands I, LLC	DE	NIA	Timberland Forest Holding LLC	. Ownership	100.000	MMLIC		
0000							Lyme Adirondack Timberlands II, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance	L				
0000							Barings Ascend LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
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0000			04-1590850	-			Berkshire Way LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			04 4500050				NOD OO IIIO	DE	A11.A	Massachusetts Mutual Life Insurance		400.000	144 10		
0000			04-1590850	-			MSP-SC, LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000]	l	I			TH O	DE	NIA	Massachusetts Mutual Life Insurance	0	100.000	188 10		
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0000							MassMutual MCAM Insurance Company, Inc	v 1	NI A	Company	owner strip	100.000	MWLIU		
0000]	04-1590850	1			Insurance Road LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		
0000			04-1590850				MassMutual Trad Private Equity LLC	DE	NIA	Insurance Road LLC	Owner ship.	100.000	MMLIC		
0000			04-1590850				MassMutual Private Equity ELC	DE	NIA	MassMutual Trad Private Equity LLC	Owner ship	100.000	MMLIC		
0000			04-1590850				MassMutual Intellectual Property LLC	DE	NIA	Insurance Road LLC	Ownership.	100.000	MMLIC		
0000			0.1 1000000				Trad Investments LLC	DE	NIA	Insurance Road LLC	Ownership.	100.000	MMLIC		
0000							THE THIRD CHICAGO I LLO			Massachusetts Mutual Life Insurance	omior on p.		mmL1V		
0000]	27-0105644	I			Jefferies Finance LLC	DE	NIA	Company	Ownership	50.000	MMLIC		1
				1						Massachusetts Mutual Life Insurance					
0000		l	l	1	l		MassMutual Mortgage Lending LLC	DE	NIA	Company	Ownership	100.000	MM_IC		[l
0000							Apex Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership.	100.000	MMLIC		
0000							Jefferies Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership.	100.000	MMLIC		

SCHEDULE Y

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						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Croup		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Group	O No			RSSD	CIK	International)	Or Affiliates			(Name of Entity/Person)	Other)		Entity(ies)/Person(s)	(Y/N)	
Code	Group Name	Code	Number	RSSD	CIK	international)		tion	Entity			tage		(Y/N)	
0000							Jefferies Credit Management LLC	DE	NIA	Jefferies Credit Partners LLC	Ownership.	100.000	MMLIC		
0000							Jefferies Private Credit GP LLC	DE	NIA	Jefferies Credit Management LLC	Ownership	100.000	MMLIC		
0000							Jefferies Private Credit Fund LP	DE	NIA	Jefferies Private Credit GP LLC	Ownership	100.000	MMLIC		
0000							Jefferies Private Credit BDC Inc.	MD DE	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN GP Adviser LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Fund III LLC	DE	NI A	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN Fund VI LLC	DE	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN Asset Management LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFAM GP LLC	DE	NIA	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
0000							JFAM GP LP	DE	NIA	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
0000							Jefferies Direct Lending Fund C LP	DE	NIA	JFIN Asset Management, LLC	Owner ship	100.000	MMLIC	.	
0000							Jefferies DLF C Holdings LLC	DE	NIA	Jefferies Direct Lending Fund C LLC	Ownership	100.000	MMLIC		
0000							Jefferies Direct Lending Fund C SPE LLC	DE	NIA	Jefferies DLF C Holdings LLC	Owner ship.	100.000	MMLIC	.	1
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 Revolver Holdings III LLC	DE	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							JFIN Revolver SPE III LLC	DE	NI A.	JFIN Revolver Fund Holdings III LLC	Ownership.	100.000	MMLIC		
.0000							JFIN Co-Issuer Corporation	DE	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
.0000							JFIN Europe GP, S.a.r.I.	LUX	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							Jefferies Finance Europe, S.L.P.	LUX	NIA	JFIN Europe GP, S.a.r.I.	Owner ship.	100.000	MMLIC		
0000							Jefferies Finance Europe, SCSp	IIIX	NIA	JFIN Europe GP. S.a.r.I.	Owner ship.		MMLIC		
0000							Jefferies Finance Business Credit LLC	LUX DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
.0000							JFIN Business Credit Fund LLC	DE	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							JFIN High Yield Investments LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMI IC		
0000							JFIN LC Fund LLC	DE	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							JFIN Revolver CLO Holdings LLC	. DE	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN CLO 2012 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship.		MMLIC		
0000							JFIN CLO 2012 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN CLO 2013 Ltd.		NIA	Jefferies Finance LLC	Ownership.		MMLIC		
0000							JFIN CLO 2014-11 Ltd.	CYM	NIA	Jefferies Finance LLC		44.000	MMLIC		
0000								CYM		Apex Credit Partners LLC	Ownership		MMLIC		
							JFIN CLO 2015 Ltd		NIA		Ownership	56.000			
0000							JFIN Revolver Fund, L.P.	DE	NIA	Jefferies Finance LLC	Owner ship.	90.000	MMLIC		
0000							Apex Credit CLO 2015-II Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship.		MMLIC		
0000							Apex Credit CLO 2015-II Ltd.	<u>CYM</u>	NIA	Apex Credit Partners LLC	Ownership	53.000	MMLIC		
0000							JFIN Revolver CLO 2014 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							JFIN Revolver CLO 2015 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership.	100.000	MMLIC	.	·
							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	Owner ship	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	NI A	Jefferies Finance LLC	Owner ship	100.000	MMLIC	.	
.0000							JFIN Revolver CLO 2019 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC		
0000							JFIN Revolver CLO 2019-II Ltd	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC	.	
0000							JFIN Revolver CLO 2020 Ltd	CYM	NIA	Jefferies Finance LLC	Owner ship.	100.000	MMLIC		
0000							Apex Credit CLO 2016 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC	.	
0000							Apex Credit CLO 2017 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC	.	
0000							Apex Credit CLO 2017-II Ltd	CYM	NIA	Jefferies Finance LLC	Owner ship	100.000	MMLIC	.	
0000							Apex Credit CLO 2019-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership.	74.000	MMLIC		
0000							Apex Credit CLO 2020 Ltd.	CYM	NIA	Apex Credit Partners LLC	Owner ship.	100.000	MMLIC	.	
							1			Massachusetts Mutual Life Insurance					1
0000			04-1590850				MassMutual Retirement Services, LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
							madematas. Hot II olioite doi 11000, ELO			Massachusetts Mutual Life Insurance	5				1
.0000			04-1590850				MM Copper Hill Road LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
							Oppor IIIII IIII IIII			Massachusetts Mutual Life Insurance	omior on tp.		mm_IV		
			1	1	1	i	MM Investment Holding	CYM	NIA	Company	Ownership	100.000	MML IC	1	1

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											of Control	Control			
											(Ownership,	is		Is an	
						Name of Convition			Deletion						
						Name of Securities		D	Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
_		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
										Massachusetts Mutual Life Insurance					
0000			. 04-3356880				MML Distributors LLC	MA	NI A	Company	Owner ship	99.000	. MMLIC		
0000			. 04-3356880				MML Distributors LLC	MA	NIA	MassMutual Holding LLC	Ownership	1.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000							MML Investment Advisers, LLC	DE	NIA	Company	Owner ship	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			46-3238013				MML Strategic Distributors, LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 06-1563535	2881445			The MassMutual Trust Company, FSB	CT	NIA	Company	Owner ship	100.000	MMLIC	Y	
					1					Massachusetts Mutual Life Insurance	l	00.005	l		
0000			26-0073611				MassMutual Asset Finance LLC	DE	NIA	Company	Ownership	99.600	MMLIC	[·
0000			. 26-0073611				MassMutual Asset Finance LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
0000			90-1005837				MMAF Equipment Finance LLC 2013-A	DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	. MMLIC		
0000			. 36-4785301				MMAF Equipment Finance LLC 2014-A	DE	NIA	MassMutual Asset Finance LLC	. Ownership.	100.000	MMLIC		
0000			. 38-3969560				MMAF Equipment Finance LLC 2015-A	DE	NIA	MassMutual Asset Finance LLC	. Ownership	100.000	MMLIC		
0000			. 32-0489588				MMAF Equipment Finance LLC 2016-A	DE	NIA	MassMutual Asset Finance LLC	. Ownership.	100.000	MMLIC		
0000			. 35-2590691 32-0546197				MMAF Equipment Finance LLC 2017-A	DE	NIA	MassMutual Asset Finance LLC	. Ownership	100.000	MMLIC		
0000							MMAF Equipment Finance LLC 2017-B	DE		MassMutual Asset Finance LLC	. Ownership	100.000	MMLIC		
0000			. 82-5335801 83-3722640				MMAF Equipment Finance LLC 2018-A	DE	NIA NIA	MassMutual Asset Finance LLC	Owner ship	100.000	MMLIC		
			. 83-3/22640				MMAF Equipment Finance LLC 2019-A	DE		MassMutual Asset Finance LLC	. Ownership		MMLIC		
0000							MMAF Equipment Finance LLC 2019-B Rozier LLC	DE	NIA NIA	MassMutual Asset Finance LLC	Owner ship	100.000	MMLIC		
0000							MML Private Placement Investment Company I,	VE	NIA	Massachusetts Mutual Life Insurance	Ownership	100.000	. MINILIE		
0000			04-1590850				LLC	DE	NIA	Company	Owner ship.	100.000	MMLIC		
			. 04-1590650				LLC	UE	NIA	Massachusetts Mutual Life Insurance	Owner Simp	100.000	. WWLIG		
. 0000			04-1590850				MML Private Equity Fund Investor LLC	DE	NIA	Company	Owner ship.	100.000	MMLIC		
0000			. 04-1590850				MML Private Equity Fund Investor LLC	DE	NIA	Baring Asset Management Limited	Management	100.000	MMLIC		
0000			04-1590850				MM Private Equity Intercontinental LLC	DE	NIA	MML Private Equity Fund Investor LLC	Ownership	100.000	MMLIC		
			. 04 1000000				mm 111vate Equity intercontinental EEO	bL		Massachusetts Mutual Life Insurance	owner strip.	100.000	WWL10		
0000			45-2738137				Pioneers Gate LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
	***************************************						1 1010010 0010 220			Massachusetts Mutual Life Insurance					
0000			04-2854319	2392316			MassMutual Holding LLC	DE	NIA	Company	Ownership	100.000	MMLIC	Υ	
0000			06-1597528				MassMutual Assignment Company	NC	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000			37-1732913				Fern Street LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000							Sleeper Street LLC	DE	NIA	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000			46-2252944				Haven Life Insurance Agency, LLC	DE	NIA	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000			. 04-1590850				MassMutual Capital Partners LLC	DE	NIA	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000							MassMutual Ventures Holding LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC	[
0000							Athens Fund Management LLC	DE	NIA	MassMutual Ventures Holding LLC	. Ownership	100.000	MMLIC		
0000			.				Crane Venture Partners LLP	GBR	NIA	MassMutual Ventures Holding LLC	. Ownership	33.000	. MMLIC		
0000							MassMutual Ventures Management LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
					I		MassMutual Ventures SEA Management Private	1	1						
0000							Limited	DE	NIA	MassMutual Ventures Holding LLC	. Ownership	100.000	MMLIC		
0000			.				MassMutual Ventures Southeast Asia I LLC	DE	NIA	MassMutual Ventures Holding LLC	. Ownership	100.000	MMLIC		
0000							MassMutual Ventures Southeast Asia II LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		
0000				-			MassMutual Ventures UK LLC	DE	NIA	MassMutual Ventures Holding LLC	. Owner ship	100.000	MMLIC		
0000			. 47-1296410				MassMutual Ventures US I LLC	DE	NIA	MassMutual Ventures Holding LLC	Ownership	100.000	MMLIC		·
0000				-			MassMutual Ventures US II LLC	DE	NI A	MassMutual Ventures Holding LLC	. Ownership	100.000	MMLIC	[ļ
0000							MassMutual Ventures US III LLC	DE	NIA	MassMutual Ventures Holding LLC	. Ownership.	100.000	MMLIC		
0000				-			Open Alternatives LLC	DE	NIA	MassMutual Ventures Holding LLC	. Ownership	100.000	MMLIC		
0000			. 04-1590850				MM Rothesay Holdco US LLC	DE	NIA	MassMutual Holding LLC	Owner ship	100.000	MMLIC		
0000			. 47-1466022				LifeScore Labs, LLC	MA	NIA	MassMutual Holding LLC	Owner ship	100.000	MMLIC		
0000			. 04-1590850				MML Investors Services, LLC	MA	NIA	MassMutual Holding LLC	Owner ship	100.000	MMLIC	[
0000			. 04-1590850				MML Insurance Agency, LLC	MA	NI A	MML Investors Services, LLC	Owner ship	100.000	. MML1C		

SCHEDULE Y

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											Type	If			
											of Control	Control			
											(Ownership,	is		Is an	
						Name of Conviting			Deletion			_			
						Name of Securities		D	Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
0000			41-2011634				MMLISI Financial Alliances, LLC	DE	NIA	MML Investors Services, LLC	Ownership.	100.000	MMLIC		
0000			45-4000072				MM Asset Management Holding LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000			51-0504477				Barings LLC	DE	NIA	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
							Baring Asset Management (Asia) Holdings								
0000			98-0524271				Limited	HKG	NIA	Barings LLC	Ownership	100.000	MMLIC		
							Baring International Fund Managers (Bermuda)			Baring Asset Management (Asia) Holdings					
0000			98-0457465				Limited	BMU	NIA	Limited	Ownership	100.000	MMLIC		
										Baring Asset Management (Asia) Holdings					
0000			98-0457463	.			Baring Asset Management (Asia) Limited	HKG	NIA	Limited	Owner ship	100.000	MMLIC		
0000							Baring Asset Management Korea Limited	KOR	NIA	Baring Asset Management (Asia) Limited	Owner ship	100.000	MMLIC		
							Barings Investment Management (Shanghai)								
0000							Limited	HKG	NIA	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
							Barings Overseas Investment Fund Management								
0000							(Shanghai) Limited	HKG	NIA	Baring Asset Management (Asia) Limited	Owner ship	100.000	MMLIC		
										Baring Asset Management (Asia) Holdings					
0000			98-0457707				Baring SICE (Taiwan) Limited	TWN	NIA	Limited	Ownership	100.000	MMLIC		
										Baring Asset Management (Asia) Holdings					
0000			98-0236449				Barings Japan Limited	JPN	NIA	Limited	Ownership	100.000	MMLIC		
										Baring Asset Management (Asia) Holdings	·				
0000							Barings Australia Holding Company Pty Ltd	AUS	NIA	Limited	Ownership.	100.000	MMLIC		
0000			98-0457456				Barings Australia Pty Ltd	AUS	NIA	Baring Australia Holding Company Pty Ltd	Owner ship	100.000	MMLIC		
0000			80-0875475				Barings Finance LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							BCF Europe Funding Limited	IRL	NIA	Barings Finance LLC	Owner ship	100.000	MMLIC		
0000							BCF Senior Funding LLC	DE	NIA	Barings Finance LLC	Ownership	100.000	MMLIC		
							BCF Senior Funding Designated Activity			_	·				
0000							Company	IRL	NIA	Barings Finance LLC	Ownership.	100.000	MMLIC		
0000			04-3238351				Barings Securities LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000			98-0437588				Barings Guernsey Limited	GGY	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings Europe Limited	GBR	NIA	Barings Guernsey Limited	Ownership	100.000	MMLIC		
0000							Barings Asset Management Spain SL	ESP	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
0000							Barings Italy S.r.I.	ATI	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
0000							Barings Sweden AB	SWE	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
0000							Barings Finland Oy	FIN	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
0000							Barings Netherlands B.V.	NLD	NIA	Barings Europe Limited	Owner ship	100.000	MMLIC		
0000							Barings Real Estate UK Holdings Limited	DE	NIA	Barings Europe Limited	Ownership	100.000	MMLIC		
0000							BREAE AIFM LLP	GBR	NIA	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
				I			Barings Real Estate Advisers (Continental	1					1		
0000			98-0654401	.			Europe) Limited	GBR	NIA	Barings Real Estate UK Holdings Limited	Owner ship	100.000	MMLIC		
0000			98-0654388				Barings Real Estate Advisers Europe LLP	GBR	NIA	Barings Real Estate UK Holdings Limited	Owner ship	100.000	MMLIC		
				I			Barings Real Estate Advisers Europe Finance	1					1		
0000			98-0654412				LLP	GBR	NIA	Barings Real Estate UK Holdings Limited	Owner ship	100.000	MMLIC		
0000			98-1194368	.			Barings Real Estate GmbH	DEU	NIA	Barings Real Estate UK Holdings Limited	Owner ship	100.000	MMLIC		ļ
0000			98-0241935				Baring Asset Management Limited	GBR	NIA	MassMutual Holdings (Bermuda) Limited	Ownership	100.000	MMLIC		
0000							Barings European Direct Lending 1 GP LLP	GBR	NIA	Baring Asset Management Limited	Owner ship	100.000	MMLIC		
0000			98-1012393				Barings Global Advisors Limited	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0457328	.			Baring International Investment Limited	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
				I			Baring International Investment Management	1					1		
000Q			98-0457587	.			Holdings	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
				I				1		Baring International Investment Management			1		
0000			. 98-0457576	.			Baring Asset Management UK Holdings Limited .	GBR	NI A	Holdings	Owner ship	100.000	MMLIC		
				I				1		Baring Asset Management UK Holdings Limited	1		1		
0000			98-0465031	.			Baring Asset Management GmbH	DEU	NIA		Owner ship	100.000	MMLIC		
							Baring International Fund Managers (Ireland)			Baring Asset Management UK Holdings Limited	4				
0000			98-0524272	.			Limited	IRL	NI A		Ownership	100.000	MMLIC		

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						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence.	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
0000	Croup reamo	0000	Hambon	TROOP	Oiix	international)	OT 7 timilates	11011	Linkly	Baring Asset Management UK Holdings Limited	1	tago	Entity(188)/1 Green(8)	(1/11)	
0000							Baring Asset Management Switzerland Sàrl	CHE	NIA	Darring Asset management on norumgs Emirred	Ownership	100.000	MMLIC		
0000							Dailing Asset Management Switzerrand Sail	IL		Baring Asset Management UK Holdings Limited	owner strip	100.000	MWLTO		
0000			98-0497550				Baring France SAS	FRA	NIA	Dailing Asset Management on horumgs Emilited	Ownership	100.000	MMLIC		
0000			98-0457586				Baring Fund Managers Limited	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			30-0437300				BCGSS 2 GP LLP	GBR	NIA	Baring Fund Managers Limited	Ownership	100.000	MMLIC		
0000			98-0457574				Baring Pension Trustees Limited	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0457578				Baring Investment Services Limited	GBR	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000			30-043/3/0				Barings Core Fund Feeder GP S.à.r.l.	LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Barings BME GP S.à.r.I.	GBR	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000							Barings GPC GP S.à. r.I .	LUX	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Barings European Core Property Fund GP Sàrl .	GBR	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000							Barings Investment Fund (LUX) GP S.à. r.l	LUX	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000							Barings Umbrella Fund (LUX) GP S.à.r.I.	LUX	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000							PREIF Holdings Limited Partnership	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Almack Mezzanine GP III Limited	GBR	NIA	Baring Asset Management Limited	Owner ship.	100.000	MMLIC		
0000							Almack Mezzanine Griff Limited	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0432153				Barings (U.K.) Limited	GBR	NIA	Barings Guernsey Limited	Ownership	100.000	MMLIC		
0000			30-0432 130				Barings Multifamily Capital Holdings LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Multifamily Capital LLC	MI	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Multifamily Capital Corporation		NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	DE CA	NIA	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
0000			04-3236331	. 3430093			Darrings hear Estate Auvisers Inc.	UA	NIA	Massachusetts Mutual Life Insurance	owner strip	100.000	MWLIC		
0000			81-2244465				Chassis Acquisition Holding LLC	DE	NIA	Company	Ownership/Influence	30.000	MMLIC		
0000			81-2244465				Chassis Acquisition Holding LLC	DE	NIA	Barings LLC	Influence		MMLIC		
0000			01-2244400				Chassis Acquisition Horaring LLC	UE	NIA	Massachusetts Mutual Life Insurance	. IIII Tuelice	·····	MWLTC		
0000			81-4258759				CRA Aircraft Holding LLC	DE	NIA	Company	Ownership/Influence	40.000	MMLIC		
			81-4258759				CRA Aircraft Holding LLC	DE	NIA	Barings LLC	Influence	40.000	MMLIC		
0000			01-4230733				OTA ATTOTATE HOTATING LEG	UL	NIA	Massachusetts Mutual Life Insurance	I III Tuelice		INVILIO		
0000			83-0560183				Aland Royalty Holdings LP	DE	NIA	Company	Ownership	26,600	MMLIC		
0000			83-0560183				Aland Royalty Holdings LP	DE	NIA	Barings LLC	Management.	20.000	MMLIC		
0000			00-0000 100				Arana noyarty norunigs Li	UL		Massachusetts Mutual Life Insurance	management		MWLTO		
0000							ASM SIP, LP	CYM	NIA	Company	Ownership.	13.200	MMLIC		
0000							ASM SIP, LP	CYM	NIA	Barings LLC	Influence	13.200	MMLIC		
0000							Nom on , Li	01111		Massachusetts Mutual Life Insurance	TITT TUCHOC.		MML10		
0000			46-2344300				Intermodal Holdings II LLC	DE	NIA	Company	Ownership	18.000	MMLIC		
0000			47-3055009				Milestone Acquisition Holding, LLC.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	19.700	MMLIC		
0000			47-3055009				Milestone Acquisition Holding, LLC.	DE	NIA	Barings LLC	Influence.		MMLIC		
0000			T1 -0000000				mirrostone Acquisition noturing, LLC			Massachusetts Mutual Life Insurance	I III I I I I I I I I I I I I I I I I		MWLIV		
0000							Novation Companies, Inc.	MD	NIA	Company	Ownership	17.100	MMLIC		
0000							novacion companies, inc.			Massachusetts Mutual Life Insurance	omici silip	17.100	MINETO		
0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Company	Ownership/Influence	31.500	MMLIC		
0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Barings LLC	Influence		MMLIC		
0000			600000				nou Lunto Forituros, LLO			Massachusetts Mutual Life Insurance	TITT TUOTION.		mmL1V		
0000			81-4065378				Remington L & W Holdings LLC	CT	NIA	Company	Ownership/Influence	66.300	MMLIC		
0000			81-4065378				Reminaton L & W Holdings LLC	CT	NIA	Barings LLC	Influence		MMLIC		
0000			7000010				monington L a ii noranigo LLO			Massachusetts Mutual Life Insurance	TITI TUOTIOO.		mm_IV		
0000							Tamiami Citurus, LLC	DE	NIA	Company	Ownership	15.700	MMLIC		
0000		-					Teaktree Acquisition, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	14.700	MMLIC		
0000							Teaktree Acquisition, LLC	DE	NIA	Barings LLC	Influence	7.700	MMLIC		
							Tourist of Adquisition, LLO			Massachusetts Mutual Life Insurance	11111401100		mmL1V		
0000					1		Techquity, LP	DF	NIA	Company	Ownership	15.600	MMLIC		
0000							Techquity, LP	DE	NIA	Barings LLC	Influence		MMLIC		
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Couc	Group Hame	Oouc	Humber	ROOD	Ont	international)	Of 7 timilates	tion	Littly	Massachusetts Mutual Life Insurance	Other)	tage	Entity(les)/1 erson(s)	(1/14)	-
0000			. 46-0687392				US Pharmaceutical Holdings I, LLC	DE	NIA		W		MMLIC		
0000			. 46-068/392				US Pharmaceutical Holdings I, LLC	DE	NIA	Company	Management		. MINILIU		
												40.400			
0000			. 20-2970495				US Pharmaceutical Holdings II, LLC	DE	NIA	Company	Ownership/Influence	42.400	MMLIC		
0000			. 20-2970495				US Pharmaceutical Holdings II, LLC	DE	NIA	Barings LLC	Influence		. MMLIC		
										Massachusetts Mutual Life Insurance					
0000							Validus Pharmaceuticals LLC	DE	NIA	Company	Ownership/Influence	70.000	MMLIC		
0000							VGS Acquisition Holding, LLC	DE	NIA	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
0000			.	. [VGS Acquisition Holding, LLC	DE	NIA	Barings LLC	Management		MMLIC		
0000							Aland Royalty GP, LLC	DE	NI A	Barings LLC	Ownership	100.000	. MMLIC		
0000				. []			Alaska Future Fund GP, LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC	.	
0000							BAI GP. LLC	DE	NIA	Barings LLC	Owner ship.	100.000	MMLIC		
0000							BAI Funds SLP, LLC	DE	NIA	Barings LLC	Owner ship	100.000	MMLIC		
0000							Baring Asset-Based Income Fund (US) GP, LLC.	DE		Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings Investment Series LLC	DE		Barings LLC	Ownership.	100.000	MMLIC		1
0000							Barings Capital Investment LLC	MD	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings Emerging Generation Fund GP, LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings Global Investment Funds (U.S.)	VE	NIA	Dai Higs LLC	Owner Sirip		. WINILIU		
0000			04-1590850					DE	ALL A	D: 110	0	100.000	MMLIC		
			. 04-1590850				Management LLC	DE	NIA	Barings LLC	Ownership				
0000							Barings ABIF SLP, LLC	DE	NIA	Barings LLC	Ownership	100.000	. MMLIC		
0000							Barings CLO Investment Partners GP, LLC	DE		Barings LLC	Ownership	100.000	. MMLIC		
0000							Barings Core Property Fund GP LLC	DE		Barings LLC	Ownership	100.000	. MMLIC		
0000							Barings Direct Lending GP Ltd	CYM	NIA	Barings LLC	Owner ship	100.000	. MMLIC		
							Barings Global Energy Infrastructure								
0000							Advisors, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Multi Asset Income Fund	HKG	NIA	Barings LLC	Management		MMLIC		
							Barings North American Private Loan Fund								
0000							Management, LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
							Barings North American Private Loan Fund				·				
0000							Management II, LLC	DE	NIA	Barings LLC	Owner ship	100.000	MMLIC		
0000							Barings Global Real Assets Fund GP, LLC	DE	NIA	Barings LLC	Owner ship.	100.000	MMLIC		
0000							Barings GPSF	DE		Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings/LAZ Parking Fund GP LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000							Barings Small Business Fund LLC	DE		Barings LLC	Ownership	100.000	MMLIC		
0000			98-0536233				Benton Street Advisors, Inc.	CYM		Barings LLC	Ownership.	100.000	MLIC		1
0000							BRECS VII GP LLC	DE		Barings LLC	Ownership	100.000	MMLIC		
0000			1				CCM Fund REIT Manager LLC	DE		Barings LLC	Ownership.	100.000	MMLIC		
							CHY Venture GP LLC		NIA	Barings LLC			MMLIC		
0000			1					DE			Ownership				
0000							CREF X GP LLC	DE	NIA	Barings LLC	Ownership	100.000	. MMLIC		
0000			. 04-1590850	.			Great Lakes III GP, LLC	DE	NIA	Barings LLC	Ownership	100.000	. MMLIC		
0000							Lake Jackson LLC	DE		Barings LLC	Ownership	100.000	. MMLIC		
0000			. 04-1590850	.			Loan Strategies Management LLC	DE		Barings LLC	Ownership	100.000	MMLIC		·
0000			. 41–2280126				Mezzco III LLC	DE		Barings LLC	Ownership	99.300	MMLIC		
0000			. 80-0920285	.			Mezzco IV LLC	DE		Barings LLC	Ownership	99.300	MMLIC		
0000							Mezzco Australia II LLC	DE	NIA	Barings LLC	Ownership	100.000	. MMLIC		
0000			.	. [RECSA-NY GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			. 04-1590850	.			SBNP SIA II LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000		l	.]	. [l	SBNP SIA III LLC	DE	NIA	Barings LLC	Owner ship.	100.000	MMLIC	1	
							Somerset Special Opportunities Management LLC			<u> </u>					
0000			04-1590850	1			The state of the s	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
. 0000			04-1590850	1 [SouthPointe Industrial LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		1
			131 1000000				South office findage fair LLV			Massachusetts Mutual Life Insurance					
0000			04-3313782	1			MassMutual International LLC	DE	NIA	Company	Ownership.	100.000	MMLIC	v	
0000				-			MassMutual Solutions LLC	DE	NIA	MassMutual International LLC	Ownership	100.000	MMLIC		1
0000			.1	1			Imassmutuai suiutiviis LLU	1 UE		Imassmutuai iiiteiiiatiüliäi LLU	UWINCE SITTLE		.[IWIWIL I U	1	

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Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	1
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
0000	Group Name	Code	Number	ROOD	CIIX	international)			NIA	MassMutual International LLC	,			(1/14)	\vdash
							HarborTech (Asia) Limited	HKG			Ownership	100.000	. MMLIC		
0000							Yunfeng Financial Group Limited	HKG	NIA	MassMutual International LLC	Ownership	24.900	MMLIC		
0000							MassMutual Asia Limited (SPV)	HKG	NIA	MassMutual International LLC	Ownership	100.000	. MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			04-2443240				MML Management Corporation	MA	NIA	Company	Ownership	100.000	MMLIC	Y	
0000			04-3548444				MassMutual International Holding MSC, Inc	MA	NI A	MML Management Corporation	Ownership	100.000	. MMLIC		
0000			04-3341767				MassMutual Holding MSC, Inc.	MA	NIA	MML Management Corporation	Ownership	100.000	. MMLIC		.[
										Massachusetts Mutual Life Insurance					1
0000			04-1590850				MML Mezzanine Investor II, LLC	DE	NIA	Company	Owner ship.	100.000	MMLIC		
							·			Massachusetts Mutual Life Insurance	·				1
0000		1	04-1590850		1		MML Mezzanine Investor III, LLC	DE	NIA	Company	Owner ship	11.100	MMLIC		1
			01 1000000				mine mozeumio mirostoi iri, eeo			Massachusetts Mutual Life Insurance	omior on p.		mile 10		
0000		1	27-3576835				MassMutual External Benefits Group LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
			21-33/0033				massmutual External benefits Group LLC	UE	NIA	Massachusetts Mutual Life Insurance	owner snrp		MINILIU		
												400 000	188.10		1
0000			04-1590850				100 w. 3rd Street LLC	DE	NIA	Company	Ownership	100.000	. MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			04-1590850				2160 Grand Manager LLC	DE	NI A	Company	Ownership	98.100	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			82-2432216				300 South Tryon Hotel LLC	DE	NI A	Company	Ownership	100.000	. MMLIC		.[
							,			Massachusetts Mutual Life Insurance	·				1
0000			04-1590850				300 South Tryon LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		1
							000 00011 11 011 220 111111111111111111			Massachusetts Mutual Life Insurance					1
0000							Almack Mezzanine Fund I LP	GBR	NIA	Company	Ownership/Influence	41.400	MMLIC		1
.0000							Almack Mezzanine Fund I LP	GBR	NIA	C.M. Life Insurance Company	Owner ship	4.600	MMLIC		
							ATINACK MEZZAITTIE FUNG I LF	ubn	NIA	Massachusetts Mutual Life Insurance	owner strip	4.000	WINIL TO		
0000								000	ALL A		0 1: // //	70.000	MMLIC		1
0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NIA	Company	Ownership/Influence	72.900	MMLIC		
							Barings Affordable Housing Mortgage Fund I			Massachusetts Mutual Life Insurance					1
0000							LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		
							Barings Affordable Housing Mortgage Fund I								1
0000							LLC	DE	NIA	Barings LLC	Management		MMLIC		.[
							Barings Affordable Housing Mortgage Fund II			Massachusetts Mutual Life Insurance	_				1
0000			61-1902329				LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
							Barings Affordable Housing Mortgage Fund II			,					[
0000			61-1902329				LLC	DE	NIA	Barings LLC	Management		MMLIC		1
										Massachusetts Mutual Life Insurance	managomont				1
0000		1	36-4868350		1		Barings Asset-Based Income Fund (US) LP	DE	NIA	Company	Ownership/Influence	11.200	MMLIC		1
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	[
		1					Barings Emerging Markets Corporate Bond Fund			Massachusetts Mutual Life Insurance					1 1
0000		-						IRL	NIA	Company	Ownership/Influence	95.700	MMLIC	[
		1					Barings Emerging Markets Corporate Bond Fund					1			1 1
0000		.						IRL	NI A	Barings LLC	Management		. MMLIC		1
		1			1		Barings European Real Estate Debt Income Fund			Massachusetts Mutual Life Insurance					1
0000		.1	l	l	l	1		LUX	NIA	Company	Ownership/Influence	L	MMLIC		1 1
							Barings European Real Estate Debt Income Fund			. ,					
0000		1			1		G Ectato Bobt modilo Faila	LUX	NIA	Barings LLC	Influence.				1
		-					Babson Capital Global Special Situation			Massachusetts Mutual Life Insurance					
0000		1	98-1206017				Credit Fund 2	DE	NIA		Ownership/Influence	22.100	MMLIC		1 1
		-	30-120001/					UE	NIA	Company	Owner Strip/ Itti Luence		WINIL I U		
		1					Babson Capital Global Special Situation				L		188 10		1 1
0000			98-1206017				Credit Fund 2	DE	NI A	C.M. Life Insurance Company	Ownership	1.400	MMLIC		
		1					Babson Capital Global Special Situation					1			1 1
0000			98-1206017				Credit Fund 2	DE	NI A	Barings LLC	Management		. MMLIC		ļl
		1			1					Massachusetts Mutual Life Insurance					1
0000			37-1506417				Babson Capital Loan Strategies Fund, L.P	DE	NI A	Company	Ownership/Influence	75.800	MMLIC		1 1
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Group		Company	ID	Federal		(U.Š. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence.	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
0000			37-1506417	1100			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			07 1000417				Dabson capital Loan offatogres rand, E.i			Massachusetts Mutual Life Insurance	managonort		I IIII		
0000							Barings US High Yield Bond Fund	IRL	NIA	Company	Ownership/Influence	57.200	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. 2014-1	CYM	NIA	Barings LLC	Influence		MMLIC		2
0000							Babson CLO Ltd. 2015-1	CYM	NIA	Barings LLC	Influence.		MMLIC		4
0000							Babson CLO Ltd. 2015-1	CYM	NIA	Barings LLC	Influence.		MMLIC		5
0000							Babson CLO Ltd. 2016-1	CYM	NIA	Barings LLC	Influence.		MMLIC		v
0000							Babson CLO Ltd. 2016-11	CYM	NIA	Barings LLC	Influence		MMLIC		
0000		l					Barings CLO Ltd. 2017-1	CYM	NIA	Barings LLC	Influence.		MMLIC		
0000							Barings CLO 2018-111	CYM	NIA	Barings LLC	. Influence.		MMLIC		
0000							Barings CLO 2018-IV	CYM	NIA	Barings LLC	Influence.		MMLIC		
0000							Barings CLO 2019-1	CYM	NIA	Barings LLC	. Influence.		MMLIC		
0000			98-1473665				Barings CLO 2019-1	CYM	NIA	Barings LLC	Influence.		MMLIC		
			90-14/3000						NIA	Barings LLC	Influence		MMLIC		
0000							Barings CLO 2019-III	CYM					MMLIC		
0000							Barings CLO 2019-IV		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		Barings LLC	. Influence.		MMLIC		
0000							Babson Euro CLO 2015-I BV	NLD	NIA	Barings LLC	. Influence				
0000							Babson Euro CLO 2016-I BV	NLD		Barings LLC	. Influence.	·····	MMLIC		
0000			36-037260H				Babson Euro CLO 2019-I BV	IRL	NIA	Barings LLC	. Influence	· -	MMLIC		
0000							Babson Euro CLO 2019-II BV	IRL	NIA	Barings LLC	Influence	·····	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Company	Ownership/Influence	99.300	MMLIC		
0000			81-0841854				Barings CLO Investment Partners LP	DE	NIA	Barings LLC	. Management		MMLIC		
							Barings Real Estate European Value Add I SCSp			Massachusetts Mutual Life Insurance		44 700			
0000								GBR	NIA	Company	Ownership/Influence	44.700	MMLIC		
							Barings Real Estate European Value Add I SCSp	l					l		
0000								GBR	NIA	C.M. Life Insurance Company	Ownership	5.000	MMLIC		
							Barings Real Estate European Value Add I SCSp	l			l		l		
0000								GBR	NIA	Barings LLC	. Management		MMLIC		
0000			82-5330194				Barings Global Em. Markets Equity Fund	NC	NIA	Barings LLC	. Management		MMLIC		
0000			00 4000001				Barings Global Energy Infrastructure Fund I	0//:	N/. *	Massachusetts Mutual Life Insurance		00.000	188.10		
0000			98-1332384				L	CYM	NIA	Company	Ownership/Influence	96.300	MMLIC		·····
l l							Barings Global Energy Infrastructure Fund I			L	l		l		
0000			98-1332384				LP	CYM	NIA	Baring Asset Management Limited	. Management		MMLIC		
0000							Barings Global Dividends Champion Fund	IRL	NIA	Barings LLC	. Management		MMLIC		
0000							Barings Global Inv. Grade Strat Fund	IRL	NIA	Barings LLC	. Management		MMLIC		
l]	Ì					l		Massachusetts Mutual Life Insurance	I		l		
0000				. [Barings Global Private Loan Fund	LUX	NIA	Company	Ownership/Influence	13.100	MMLIC		
0000							Barings Global Private Loan Fund	LUX	NIA	Barings LLC	. Management		MMLIC		
1								l		Massachusetts Mutual Life Insurance					
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Company	Ownership/Influence	43.000	MMLIC		
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership	7.600	MMLIC		
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Barings LLC	. Management	-	MMLIC		
							Barings Global Special Situations Credit Fund	l		Massachusetts Mutual Life Insurance					
0000							3	IRL	NIA	Company	Ownership/Influence	20.100	MMLIC		
]	Ì				Barings Global Special Situations Credit Fund						1		
0000							3	IRL	NIA	Barings LLC	. Management		MMLIC		
0000							Barings Middle Market CLO 2017-I Ltd & LLC	CYM	NIA	Barings LLC	. Influence		MMLIC		
0000							Barings Middle Market CLO 2018-1	<u>.</u> CYM	NIA	Barings LLC	. Influence		MMLIC		
0000		l	l			l	Barings Middle Market CLO 2019-1	CYM	NI A	Barings LLC	Influence		MMLIC	1	

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Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence.	Percen-	Ultimate Controlling	quired?	ı
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
Code	Gloup Name	Code	Nullibei	KOOD	CIR	international)	Of Allillates	liUII	Littity	Massachusetts Mutual Life Insurance	Other)	laye	Littity(les)/Feison(s)	(1/14)	
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0000			38-4010344				Barings North American Private Loan Fund LP .	DE	NIA	Company	Ownership/Influence	45.600	MMLIC		
0000			38-4010344				Barings North American Private Loan Fund LP .	DE	NIA	Baring Asset Management Limited	Management	·····	MMLIC		1
										Massachusetts Mutual Life Insurance					ı
0000			98-1332384				Barings RE Credit Strategies VII LP	DE	NIA	Company	Ownership/Influence	34.200	MMLIC		
0000			98-1332384				Barings RE Credit Strategies VII LP	DE	NIA	Baring Asset Management Limited	Management	·····	MMLIC		
										Massachusetts Mutual Life Insurance					ı
0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Company	Ownership/Influence	8.200	MMLIC		
0000			26-4142796				Baring International Small Cap Equity Fund	DE	NIA	Baring Asset Management Limited	Management		MMLIC		
										Massachusetts Mutual Life Insurance					ı
0000					.		Braemar Energy Ventures I, L.P.	DE	NIA	Company	Ownership/Influence	88.500	MMLIC		ı
0000							Braemar Energy Ventures I, L.P.	DE	NI A	C.M. Life Insurance Company	Ownership.	1.300	MMLIC		ı
0000					.		Braemar Energy Ventures I, L.P.	DE	NIA	Barings LLC	Management		MMLIC		ı
0000							Barings European Core Property Fund SCSp	LUX	NI A	MassMutual Holding LLC	Ownership/Influence	11.600	MMLIC		1
0000							Barings European Core Property Fund SCSp	LUX	NIA	C.M. Life Insurance Company	Ownership	0.700	MMLIC		1
0000							Barings European Core Property Fund SCSp	LUX	NI A	Barings Real Estate Advisers LLC	Management	21,00	MMLIC		1
0000			38-4059932				Benchmark 2018-B2 Mortgage Trust	NY	NIA	Barings LLC	Influence.		MMLIC		1
0000							Benchmark 2018-B4	NY	NIA	Barings LLC	Influence		MMLIC		
0000			38-4096530				Benchmark 2018-B8	NY	NIA	Barings LLC	Influence		MMLIC		
0000			04-1590850				Brasel ton Point LLC	DE	NIA	Barings LLC	Owner ship	100.000	MMLIC		1
0000			20-5578089						NIA			15.900	MMLIC		1
							Barings Core Property Fund LP	DE		MassMutual Holding LLC	Ownership/Influence	15.900			(
0000			20-5578089				Barings Core Property Fund LP	UE	NIA	Barings Real Estate Advisers LLC	Management	·····	MMLIC		·
										Massachusetts Mutual Life Insurance					ı
0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Company	Ownership/Influence	25.000	. MMLIC		
0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MMLIC		·
0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		}
										Massachusetts Mutual Life Insurance					ı
0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC .	MA	NIA	Company	Ownership/Influence	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					ı
0000			61-1793735				Cornerstone Permanent Mortgage Fund IV LLC	MA	NIA	Company	Owner ship	100.000	MMLIC		ļ
										Massachusetts Mutual Life Insurance					ı
0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Company	Ownership/Influence	34.600	MMLIC		1
0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Owner ship	5.200	MMLIC		ı
							,			Massachusetts Mutual Life İnsurance	·				ı
0000			82-2932156				GASL Holdings, LLC	DE	NIA	Company	Ownership/Influence	11.300	MMLIC		ı
. 0000			90-0991195		0001597511		Gateway Mezzanine Partners II LP	DE	NIA	Barings LLC	Management		MMLIC		1
										Massachusetts Mutual Life Insurance					1
0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Company	Ownership/Influence	41.300	MMLIC		ı
0000			37-1708623				Great Lakes III, L.P.	DE	NIA	Barings LLC	Management		MMLIC		
0000			37-1700023				JPMCC Commercial Mortgage Securities Trust	UL		Dai mgs LLO	management		WWLIG		
0000			38-4041011				2017-JP7	NY	NIA	Barings LLC	Influence		MMLIC		ı
0000			30-4041011					INT	NIA	bar riigs LLC	Initiuence		NIVIL I C		
0000			00 4000050				JPMDB Commercial Mortgage Securities Trust	AD/		D : 110			188 10		ı
0000			38-4032059				2017-C5	NY	NIA	Barings LLC	Influence	·····	MMLIC	[(
0000			00 454050			ĺ	W/D MM V	DE		Massachusetts Mutual Life Insurance	l	50.000	IIII 10		, 1
0000			82-1512591				KKR-MM Vector LP	DE	NIA	Company	Ownership/Influence	56.300	MMLIC		(
			l			ĺ				Massachusetts Mutual Life Insurance	L				, 1
0000			46-4255307				Marco Hotel LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			I			ĺ		1		Massachusetts Mutual Life Insurance	ĺ				, 1
0000			04-1590850				Miami Douglas One GP LLC	DE	NIA	Company	Owner ship	84.500	MMLIC		
0000			04-1590850				Miami Douglas One GP LLC	DE	NI A	C.M. Life Insurance Company	Ownership	5.500	MMLIC		
			I			ĺ		1		Massachusetts Mutual Life Insurance	ĺ				, 1
0000			04-1590850	.			Miami Douglas Two GP LLC	DE	NIA	Company	Ownership	0.000	MMLIC		ıl
0000			04-1590850				Miami Douglas Two GP LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.000	MMLIC		

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Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
	•					,				Massachusetts Mutual Life Insurance	,	Ĭ	, , , , , , , , , , , , , , , , , , ,	<u> </u>	1
0000			04-1590850				Miami Douglas Two LP	DE	NIA	Company	Ownership	90.000	MMLIC		
0000			04-1590850				Miami Douglas Two LP	DE	NIA	C.M. Life Insurance Company	Ownership.	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			45-3623262				HB Naples Golf Owner LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			81-3000420				MM Debt Participations LLC	DE	NIA	Company	Ownership/Influence	100.000	MMLIC		
0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC	Management		MMLIC		
							and book i are tro space on the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book is a second of the book in the book in the book in the book is a second of the book in th			Massachusetts Mutual Life Insurance					
0000			82-4411267				RB Apartments LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			OL TITILOT				The riput tillotto EEO			Massachusetts Mutual Life Insurance	Omici dirip.		mile 10		
0000			75-2901061				Reston Arboretum LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		
0000			70 200 1001				neston Arboretum EEO			Massachusetts Mutual Life Insurance	owner strip.		MWE10		
0000			54-2055778				Rockville Town Center LLC	VA	NIA	Company	Ownership.	100.000	MMLIC		
0000			. 34-2000110				NOCKVITTE TOWN CENTER LLC	vn		Massachusetts Mutual Life Insurance	. Owner strip	100.000	. WWLTO		
0000			20-8856877				Somerset Special Opportunities Fund L.P	DE	NIA	Company	Ownership/Influence	59.000	MMLIC		
0000			20-8856877				Somerset Special Opportunities Fund L.P	DE	NIA	C.M. Life Insurance Company	Ownership	2.900	MMLIC		
0000			20-8806877				Somerset Special Opportunities Fund L.P	VE	NIA	Massachusetts Mutual Life Insurance	. Uwnersnip	2.900			
0000			05 0550045				T	DE	ALL A		0 1:	400 000	188 10		
0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	NIA	Company	Ownership	100.000	. MMLIC		
0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	Barings LLC	Management		. MMLIC		
0000			41-2280127				Tower Square Capital Partners III, L.P	DE	NIA	MassMutual Holding LLC	Ownership/Influence	16.900	MMLIC		
								l		Massachusetts Mutual Life Insurance					
0000			. 41-2280129				Tower Square Capital Partners IIIA, L.P	DE	NI A	Company	Ownership/Influence	88.100	MMLIC		
0000			41-2280129				Tower Square Capital Partners IIIA, L.P	DE	NIA	Barings LLC	Management	·····	. MMLIC		
								l		Massachusetts Mutual Life Insurance					
0000			80-0920367				Tower Square Capital Partners IV-A, L.P	DE	NIA	Company	Ownership/Influence	21.300	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			04-1590850				Trailside MM Member LLC	DE	NIA	Company	Ownership	59.600	MMLIC		
0000			. 04-1590850				Trailside MM Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	7.400	. MMLIC		
										Massachusetts Mutual Life Insurance					
0000			83-1325764				Washington Gateway Two LLC	DE	NI A	Company	Ownership		MMLIC		
0000			83-1325764				Washington Gateway Two LLC	DE	NIA	C.M. Life Insurance Company	Ownership	6.700			
										Massachusetts Mutual Life Insurance					
0000			32-0574045				Washington Gateway Three LLC	DE	NIA	Company	Ownership	83.600	MMLIC		
0000			32-0574045				Washington Gateway Three LLC	DE	NIA	C.M. Life Insurance Company	Ownership	11.400	MMLIC		
		1						1		Massachusetts Mutual Life Insurance					
0000			04-1590850				West 46th Street Hotel LLC	DE	NIA	Company	Ownership	100.000	. MMLIC		
							Barings Emerging Markets Debt Short Duration	1							
0000							Fund	IRL	NIA	Barings LLC	Management		. MMLIC		
							Babson Capital Loan Strategies Master Fund LF								
0000								CYM	NIA	Barings LLC	Management		. MMLIC		
0000			47-3790192				Barings Global High Yield Fund	MA	NIA	Barings LLC	Management		. MMLIC		
0000			47-3734770				Barings Total Return Bond Fund	MA	NIA	Barings LLC	Management	<u>.</u>	. MMLIC		
0000							CCIC Fund	CHN	NI A	Barings LLC	Influence		. MMLIC		
										Massachusetts Mutual Life Insurance					
0000			71-1018134				Great Lakes II LLC	DE	NI A	Company	Ownership	11.200	MMLIC		
0000			71-1018134				Great Lakes II LLC	DE	NIA	C.M. Life Insurance Company	Ownership.	1.000	MMLIC		
								1		Massachusetts Mutual Life Insurance	1				
0000			04-1590850				Wood Creek Venture Fund LLC	DE	NIA	Company	Ownership.	60.000	MMLIC		
			1							Massachusetts Mutual Life Insurance					
0000		I	36-4823011				50 Liberty LLC	DE	NIA	Company	Ownership	91.000	MMLIC		l
0000			36-4823011				50 Liberty LLC	DE	NIA	C.M. Life Insurance Company	Ownership.	5.800	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			80-0948028				One Harbor Shore LLC	DE	NIA	Company	Ownership	91.000	MMLIC		
0000			02-007-0020				VIIV INCIDOL CHOLC LLC	DL		Loombari,	. v == 101 011 1 v == 101 v	0000	., mm=1V		4

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						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Group		Company	ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
0000	·		80-0948028				One Harbor Shore LLC	DE	NIA	C.M. Life Insurance Company	Ownership.	9.000	MMLIC		
										Massachusetts Mutual Life Insurance	·				
0000			81-4382111				Budapester Strasse LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			82-2285211				Calgary Railway Holding LLC	DE	NI A	Company	Ownership	90.000	MMLIC		
0000			82-2285211				Calgary Railway Holding LLC	DE	NI A	C.M. Life Insurance Company	Ownership	10.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			95-4207717				Cornerstone California Mortgage Fund LLC	CA	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			95-4207717				Cornerstone California Mortgage Fund II LLC .	CA	NI A	Company	Ownership	100.000	MMLIC		
							Cornerstone California Mortgage Fund III LLC			Massachusetts Mutual Life Insurance					
0000			95-4207717					CA	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Company	Ownership	83.900	MMLIC		
0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NI A	C.M. Life Insurance Company	Ownership	6.100	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NI A	Company	Ownership	100.000	MMLIC		
0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NIA	Barings LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Company	Owner ship	100.000	MMLIC		
0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NI A	Barings LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NI A	Company	Owner ship	100.000	MMLIC		
0000			81-0890084				CREA Madison Member LLC	DE	NIA	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			82-1563809				CCB Montford Park LLC	DE	NIA	Company	Ownership	75.200	MMLIC		
0000			82-1563809				CCB Montford Park LLC	DE	NIA	C.M. Life Insurance Company	Ownership	4.800	MMLIC		
										Massachusetts Mutual Life Insurance	L				
0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NIA	Company	Owner ship	100.000	MMLIC		
							5 8: 8 1 110	D=		Massachusetts Mutual Life Insurance		50.000			
0000			. 20-3347091				Fan Pier Development LLC	DE	NIA	Company	Ownership	59.200	MMLIC		
0000			20-3347091				Fan Pier Development LLC	VE	NIA	C.M. Life Insurance Company	Ownership	5.600	MMLIC		
0000			04 5060400		1		Landwark Manahantar Haldings 110	DE	NIA	Massachusetts Mutual Life Insurance	O-manahi-	400 000	MMLIC		
0000			81-5360103				Landmark Manchester Holdings LLC	DE	NIA	Company	Ownership	100.000	WWLIG		
0000			04-1590850	I	I		MM Inland Markey II C	DE	NIA		O-manahi-	49.000	MMLIC		
0000			04-1090800				MM Island Member LLC	UE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	49.000	. MWLIC		
0000			83-0881588				NoHo West Venture LLC	DE	NIA		Ownership	95.000	MMLIC		
0000			03-000 1300				NONO West Venture LLC	VE	NIA	Company Massachusetts Mutual Life Insurance	owner strip	95.000	. WWLTG		
0000			04-1590850				PACO France Logistics 2 LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			. 04-1030000				TAGO TTAILCE LOGISTICS 2 LLC			Massachusetts Mutual Life Insurance	owner strip	100.000	WWLTO		
0000			82-3393166				Portland 400 Sixth Manager LLC	DE	NIA	Company	Ownership	95.000	MMLIC		
0000				1			Salomon Brothers Commercial Mortgage Trust			ompany	omioi onip			[
0000				1	I		2001-MM	DE	NIA	Barings Real Estate Advisers LLC	Influence.		MMLIC		
5000										Massachusetts Mutual Life Insurance					
0000			27-2977720		1		Sawgrass Village Shopping Center LLC	DF	NIA	Company	Ownership	84.200	MMLIC		
. 0000			27-2977720	1			Sawgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Owner ship.	15.800	MMLIC		
							gago onopping outloo			Massachusetts Mutual Life Insurance					
0000			04-1590850	.1			Spain Avalon Holding LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
				1			-,			Massachusetts Mutual Life Insurance					
0000		l	81-5273574	.]			Three PW Office Holding LLC	DE	NI A	Company	Ownership.	95.100	MMLIC		
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						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC	ın	F		if Publicly Traded	Names of	ciliary	to	Discolla Controlla II	Attorney-in-Fact,	Provide	LUC L. C L. U.	Re-	
Group	One we Name	Company	ID	Federal RSSD	OUZ	(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance	Other)	tage	Entity(ies)/Person(s)	(Y/N)	
0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	Company	Ownership	91.000	MMLIC		
0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership	9.000	MMLIC		
							, , , , , , , , , , , , , , , , , , , ,			Massachusetts Mutual Life Insurance					
0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			45 5404400				W 1: 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DE		Massachusetts Mutual Life Insurance		00.400	IIII 10		
0000			45-5401109 45-5401109				Washington Gateway Apartments Venture LLC Washington Gateway Apartments Venture LLC	DE	NIA NIA	Company C.M. Life Insurance Company	Ownership	90.400	MMLICMMLIC		
0000			45-5401109				washington dateway Apartiments venture LLC	UE	NIA	Massachusetts Mutual Life Insurance	Owner Sirrp	4.000	WWLIG		
0000			45-3168892				MassMutual Barings Dynamic Allocation Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			51-0529328		0000927972	0Q	MassMutual Premier Main Street Fund	MA	NIA	Company	Ownership	64.900	MMLIC		
0000			00 0000054		0000007070	00	MassMutual Premier Strategic Emerging Markets			Massachusetts Mutual Life Insurance		0.400	IIII 10		
0000			. 26-3229251		0000927972	00	Fund	MA	NIA	Company	Ownership	3.100	MMLIC		
0000			04-3277550		0000927972	00	MassMutual Premier Value Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
						•	MassMutual Select Diversified International			Massachusetts Mutual Life Insurance					
0000			14-1980900		0000916053	0Q	Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			01-0821120		0000916053	00	MassMutual Select Diversified Value Fund	MA	NIA	Company	Ownership	0.800	MMLIC		
0000			04-3512593		0000916053	00	MassMutual Select Fundamental Growth Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership.	3.200	MMLIC		
0000			. 04-3312333		0000910033	04	massmutuar serect rundamentar drowth rund	MA		Massachusetts Mutual Life Insurance	Owner strip.	0.200	WWE10		
0000			04-3513019		0000916053	00	MassMutual Select Large Cap Value Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			42-1710935		0000916053	00	MassMutual Select Mid-Cap Value Fund	MA	NIA	Company	Ownership	17.200	MMLIC		
0000			02-0769954		0000916053	00	MassMutual Select Small Capital Value Equity	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership.	0.000	MMLIC		
0000			02-0703354		0000910033	04	T unu	MA		Massachusetts Mutual Life Insurance	Owner strip.	0.000	WWE10		
0000			04-3584140		0000916053	00	MassMutual Select Small Company Value Fund	MA	NIA	Company	Ownership	5.600	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3347422		0000916053	0Q	2005 Fund	MA	NIA	Company	Ownership	8.800	MMLIC		
0000			82-3355639		0000916053	00	MassMutual Select T. Rowe Price Retirement 2010 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	O-manahi -	0.000	MMLIC		
0000			02-3333039		0000916055	00	MassMutual Select T. Rowe Price Retirement	MA	NIA	Massachusetts Mutual Life Insurance	Ownership		MWLIC		
0000			82-3382389		0000916053	0Q	2015 Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3396442		0000916053	00	2020 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3417420		0000916053	00	2025 Fund	MA	NIA	Company Massachusetts Mutual Life Insurance	Ownership	0.000	MMLIC		
0000			82-3430358		0000916053	00	2030 Fund	MA	NIA	Company	Owner ship.	0.000	MMLIC		
			02 0100000		0000010000		MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance	owner drift.				
0000			82-3439837		0000916053	0Q	2035 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
			00.0454777				MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance	l		l		
0000			. 82–3451779		0000916053	0Q	2040 Fund	MA	NIA	Company Massachusetts Mutual Life Insurance	Ownership	0.000	MMLIC		
0000			82-3472295		0000916053	00	2045 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance	5				
0000			82-3481715		0000916053	00	2050 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
			00.055				MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance			l		
0000			. 82-3502011		0000916053	0Q	2055 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
0000			82-3525148		0000916053	00	2060 Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
											4				

SCHEDULE Y

					• • • •	. – –					<u> </u>				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
											Type	If			
											of Control	Control			
											(Ownership,	is		Is an	
						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	
Group		Company	ID	Federal		(U.S. or	Parent. Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	
Code	Group Name	Code	Number	RSSD	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person)	Other)	tage	Entity(ies)/Person(s)	(Y/N)	*
Oode	Group Name	Couc	Hamber	ROOD	Oiix	internationar)	MassMutual Select T. Rowe Price Retirement	tion	Littly	Massachusetts Mutual Life Insurance	Other)	tage	Entity(ies)/i crson(s)	(1/14)	+
0000			82-3533944	00	000916053	00	Balanced Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
0000			02 0000044			04	Dataneca i una			Massachusetts Mutual Life Insurance	Owner Sirip.		WWL10		
0000			46-4257056				MML Series International Equity Fund	MA	NIA	Company	Owner ship.	0.000	MML IC		
							anne dorror international equity rand			Massachusetts Mutual Life Insurance					
0000			47-3517233				MML Series II Asset Momentum Fund	MA	NIA	Company	Ownership.	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			47-3529636				MML Series II Dynamic Bond Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			47-3544629				MML Series II Equity Rotation Fund	MA	NIA	Company	Owner ship	95.100	. MMLIC		
										Massachusetts Mutual Life Insurance					
0000			47-3559064				MML Series II Special Situations Fund	MA	NIA	Company	Owner ship.	97.300	. MMLIC		
										Massachusetts Mutual Life Insurance					
0000			27-1933828	00	000916053	0Q	MassMutual RetireSMART 2015 Fund	MA	NIA	Company	Ownership	0.000	MMLIC		
0000			07 4000000		000040050	00	H H A L D A' CHURT COOF F		A11.A	Massachusetts Mutual Life Insurance	0 1:	0.000	MML IC		
0000			27-1933389	00	000916053	0Q	MassMutual RetireSMART 2035 Fund	MA	NIA	Company Massachusetts Mutual Life Insurance	Ownership	3.900	MMLIC		
0000			27-1932769	00	000916053	00	MassMutual RetireSMART 2045 Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership.	9.200	MML IC		
0000			21-1932/09		66001 6000	0Q	massmutuai hetiresmani 2045 runu	MA		Massachusetts Mutual Life Insurance	owner snrp	9.200	. WWLIC		
0000			46-3289207	00	000916053	00	MassMutual RetireSMART 2055 Fund	MA	NIA	Company	Ownership.	30.300	MMLIC		
			40-0209207		000310000	0Q	massmatuar netri esimani 2000 runu			Massachusetts Mutual Life Insurance	Owner Strip		. WWLTO		
0000			47-5326235	00	000916053	00	MassMutual RetireSMART 2060 Fund	MA	NIA	Company	Owner ship.	56.800	MML IC		
,			0020200			04	2555 1 414			Massachusetts Mutual Life Insurance					
. 0000			45-1618155	00	000916053	00	MassMutual RetireSMART Conservative Fund	MA	NIA	Company	Owner ship.	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			45-1618222	00	000916053	0Q	MassMutual RetireSMART Growth Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			03-0532464	00	000916053	0Q	MassMutual RetireSMART In Retirement Fund	MA	NIA	Company	Ownership	1.700	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			45-1618262	00	000916053	00	MassMutual RetireSMART Moderate Fund	MA	NIA	Company	Owner ship	0.000	MMLIC		
			l. <u>.</u>					l		Massachusetts Mutual Life Insurance					
0000			45-1618046		000916053	0Q	MassMutual RetireSMART Moderate Growth Fund .	MA	NIA	Company	Ownership	0.000	MMLIC		
			l											1	

Asterisk	Explanation
1	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 St	rategies Fund, L.P.
4 Debt investors own .5% and includes only Great Lakes III, L.P	
5	

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

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

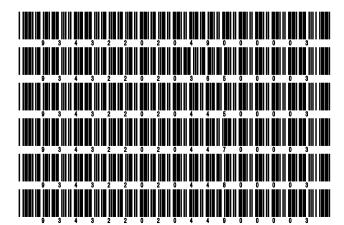
Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	NO NO
Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	
	NO
2. Will the Medicare Part D Coverage Supplement be filed with the state of domicile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

Explanation:

- 1. Not Required.
- 2. This line of business is not written by the company.
- 3. Not Required.
- 5. Not Required.
- 6. Not Required.
- 7. Not Required.

Bar Code

- 1. Trusteed Surplus Statement [Document Identifier 490]
- 2. Medicare Part D Coverage Supplement [Document Identifier 365]
- Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV [Document Identifier 445]
- Reasonableness of Assumptions Certification for Implied Guaranteed Rate Method required by Actuarial Guideline XXXVI [Document Identifier 447]
- Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI [Document Identifier 448]
- Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) [Document Identifier 449]



STATEMENT AS OF SEPTEMBER 30, 2020 OF THE C.M. Life Insurance Company OVERFLOW PAGE FOR WRITE-INS

NONE

SCHEDULE A - VERIFICATION

Real Estate

		1	2
			Prior Year Ended
		Year to Date	December 31
1.	Book/adjusted carrying value, December 31 of prior year		
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition		
	2.2 Additional investment made after acquisition		
3.	Current year change in encumbrances		
4.	Total gain (loss) on disposals		
5.	Deduct amounts received on disposals		
6.	Total foreign exchange change in book/adjusted rying		
7.	Deduct current year's other than temporary impailment reducitied		
8.	Deduct current year's depreciation		
9.	Book/adjusted carrying value at the end of current period (Lines 1+2+3+4-5+6-7-8)		
10.	Deduct total nonadmitted amounts		
11.	Statement value at end of current period (Line 9 minus Line 10)		

SCHEDULE B - VERIFICATION

Mortgage Loans

		1	2
		Year to Date	Prior Year Ended December 31
1.	Book value/recorded investment excluding accrued interest, December 31 of prior year	933,021,597	921,272,354
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition	108,932,790	87,202,430
	2.2 Additional investment made after acquisition	4, 137, 999	9,788,601
3.	2.1 Actual cost at time of acquisition 2.2 Additional investment made after acquisition Capitalized deferred interest and other	1,921,953	1,273,315
4.	Accrual of discount	205, 100	200,504
5.	Unrealized valuation increase (decrease)		
6.	Total gain (loss) on disposals	(3,669,055)	(76,590)
7.	Deduct amounts received on disposals	75,563,484	88,704,427
8.	Deduct amortization of premium and mortgage interest points and commitment fees	(298,218)	793,688
9.	Total foreign exchange change in book value/recorded investment excluding accrued interest	1,416,260	2,859,098
10.	Deduct current year's other than temporary impairment recognized	865,940	
11.	Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)		
12.	Total valuation allowance	(2,129,771)	
13.	Subtotal (Line 11 plus Line 12)		
14.	Deduct total nonadmitted amounts		
15.	Statement value at end of current period (Line 13 minus Line 14)	967,705,667	933,021,597

SCHEDULE BA - VERIFICATION

Other Long-Term Invested Assets

	· ·	1	2
			Prior Year Ended
		Year to Date	December 31
1.	Book/adjusted carrying value, December 31 of prior year	160,933,329	168,637,463
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition	2,707,906	3,790,866
	2.2 Additional investment made after acquisition	14, 127, 410	27,077,512
3.	Capitalized deferred interest and other Accrual of discount		
4.	Accrual of discount		
5.	Unrealized valuation increase (decrease)	(7,336,609)	33,437,351
6.	Total gain (loss) on disposals	1,070,298	199,230
7.	Deduct amounts received on disposals	9,079,325	70,570,514
8.	Deduct amortization of premium and depreciation	8,793	11,578
9.	Total foreign exchange change in book/adjusted carrying value	244,986	220,366
10.	Deduct current year's other than temporary impairment recognized	89,278	1,847,367
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	162,569,925	160,933,329
12.	Deduct total nonadmitted amounts	253,725	344,077
13.	Statement value at end of current period (Line 11 minus Line 12)	162,316,200	160,589,252

SCHEDULE D - VERIFICATION

Bonds and Stocks

		1	2
			Prior Year Ended
		Year to Date	December 31
1.	Book/adjusted carrying value of bonds and stocks, December 31 of prior year	4, 131, 363, 369	4,418,143,411
2.	Cost of bonds and stocks acquired	853,620,780	703,389,159
3.	Accrual of discount	2,664,417	3,719,248
4.	Unrealized valuation increase (decrease)	6,040,428	(12,209,679)
5.	Total gain (loss) on disposals	9, 101, 365	945,783
6.	Deduct consideration for bonds and stocks disposed of	542,473,841	985,342,446
7.	Deduct amortization of premium	1,453,213	1,947,812
8.	Total foreign exchange change in book/adjusted carrying value	8,447,326	10,796,856
9.	Deduct current year's other than temporary impairment recognized	7,207,276	11,691,399
10.	Total investment income recognized as a result of prepayment penalties and/or acceleration fees	3,110,892	5,560,248
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	4,463,214,247	4, 131, 363, 369
12.	Deduct total nonadmitted amounts		
13.	Statement value at end of current period (Line 11 minus Line 12)	4,463,214,247	4,131,363,369

SCHEDULE D - PART 1B

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

	1	2	3	4	5	6	7	8
	Book/Adjusted	Ai-i4i	Diamaritiana	Non Tandina Astinit	Book/Adjusted	Book/Adjusted	Book/Adjusted	Book/Adjusted
	Carrying Value Beginning	Acquisitions During	Dispositions During	Non-Trading Activity During	Carrying Value End of	Carrying Value End of	Carrying Value End of	Carrying Value December 31
NAIC Designation	of Current Quarter	Current Quarter	Current Quarter	Current Quarter	First Quarter	Second Quarter	Third Quarter	Prior Year
BONDS								
1. NAIC 1 (a)	2,149,471,689	249,428,010	311,876,963	(25, 190, 580)	1,969,562,380	2,149,471,689	2,061,832,156	1,743,786,704
2. NAIC 2 (a)	1,881,054,691	1,252,171,517	1,359,669,873	31,064,877	1,956,694,562	1,881,054,691	1,804,621,212	1,936,823,716
3. NAIC 3 (a)	303,576,288	22,790,768	42,758,917	13,768,761	348,570,308	303,576,288	297,376,900	308,790,382
4. NAIC 4 (a)	72,811,487	283,981	3,949,452	3,425,375	50,884,530	72,811,487	72,571,391	58,558,695
5. NAIC 5 (a)	137,497,849	941,066	8,738,964	2,550,121	138,063,408	137,497,849	132,250,072	142, 100, 127
6. NAIC 6 (a)	25,345,750	920,237	8,408,210	1,772,343	24,700,557	25,345,750	19,630,120	28,919,340
7. Total Bonds	4,569,757,754	1,526,535,579	1,735,402,379	27,390,897	4,488,475,745	4,569,757,754	4,388,281,851	4,218,978,964
PREFERRED STOCK								
THE ENGLY OF ON								
0 NAIC 4				297.562			297.562	2,950,000
8. NAIC 1	1 110 000		050 075	,	0.050.000	4 440 000	, ,	2,930,000
9. NAIC 2			356,275	(360,550)	2,950,000	1,116,825	400,000	0.000.000
10. NAIC 3					2,000,000	2,000,000	2,000,000	2,000,000
11. NAIC 4								
12. NAIC 5	2,277,081	5,982		1,335	2,304,628	2,277,081	2,284,398	2,356,835
13. NAIC 6	82,296	2,372		40,058	82,296	82,296	124,726	82,296
14. Total Preferred Stock	5,476,202	8,354	356,275	(21,595)	7,336,924	5,476,202	5,106,686	7,389,131
15. Total Bonds and Preferred Stock	4,575,233,956	1,526,543,933	1,735,758,654	27,369,302	4,495,812,669	4,575,233,956	4,393,388,537	4,226,368,095

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

SCHEDULE DA - PART 1

Short-Term Investments

	1 Book/Adjusted Carrying Value	2 Par Value	3 Actual Cost	4 Interest Collected Year-to-Date	5 Paid for Accrued Interest Year-to-Date
9199999 Totals	115,309,559	XXX	115,250,885	12,375	

SCHEDULE DA - VERIFICATION

Short-Term Investments

		1	2
		Year To Date	Prior Year Ended December 31
1.	Book/adjusted carrying value, December 31 of prior year	114 , 134 , 338	62,424,277
2.	Cost of short-term investments acquired	270,208,830	280,651,182
3.	Accrual of discount	1,262,205	2,092,343
4.	Unrealized valuation increase (decrease)		
5.	Total gain (loss) on disposals	1,460	9,256
6.	Deduct consideration received on disposals	270,297,274	231,042,721
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)	115,309,559	114, 134, 338
11.	Deduct total nonadmitted amounts		
12.	Statement value at end of current period (Line 10 minus Line 11)	115,309,559	114,134,338

SCHEDULE DB - PART A - VERIFICATION

Options, Caps, Floors, Collars, Swaps and Forwards

1.	Book/Adjusted Carrying Value, December 31, prior year (Line 10, prior year)	(44,084,224)
2.	Cost Paid/(Consideration Received) on additions	3,648,939
3.	Unrealized Valuation increase/(decrease)	133,541,813
4.	SSAP No. 108 adjustments	
5.	Total gain (loss) on termination recognized	8,610,743
6.	Considerations received/(paid) on terminations	13,155,986
7.	Amortization	(14,168)
8.	Adjustment to the Book/Adjusted Carrying Value of hedged item	
9.	Total foreign exchange change in Book/Adjusted Carrying Value	
10.	Book/Adjusted Carrying Value at End of Current Period (Lines 1+2+3+4+5-6+7+8+9)	88,547,117
11.	Deduct nonadmitted assets	
12.	Statement value at end of current period (Line 10 minus Line 11)	88,547,117

SCHEDULE DB - PART B - VERIFICATION

	SCHEDULE DB - PAR Futures Con		RIFICATIO	'n	
1.	Book/Adjusted carrying value, December 31 of prior year (Line 6, prior year)				(15,723,529)
2.	Cumulative cash change (Section 1, Broker Name/Net Cash Deposits Footnote - C	umulative Cash Char	nge column)		
3.1	Add:				
	Change in variation margin on open contracts - Highly Effective Hedges				
	3.11 Section 1, Column 15, current year to date minus				
	3.12 Section 1, Column 15, prior year				
	Change in variation margin on open contracts - All Other				
	3.13 Section 1, Column 18, current year to date minus	(5,486,815)			
	3.14 Section 1, Column 18, prior year	(15,723,530)	10,236,715	10,236,715	
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	(5,486,815)			
	3.24 Section 1, Column 19, prior year	(15,723,530)			
	3.25 SSAP No. 108 adjustments		10,236,715	10,236,715	
3.3	Subtotal (Line 3.1 minus Line 3.2)				
4.1	Cumulative variation margin on terminated contracts during the year		118,112,920		
4.2	Less:				
	4.21 Amount used to adjust basis of hedged item	118,112,920			
	4.22 Amount recognized				
	4.23 SSAP No. 108 adjustments		118,112,920		
4.3	Subtotal (Line 4.1 minus Line 4.2)				
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 $\!$				(10,236,715)
6.	Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)				(5,486,814)
7.	Deduct total nonadmitted amounts				
8.	Statement value at end of current period (Line 6 minus Line 7)				(5,486,814)

Schedule DB - Part C - Section 1 - Replication (Synthetic Asset) Transactions (RSATs) Open **N O N E**

Schedule DB-Part C-Section 2-Reconciliation of Replication (Synthetic Asset) Transactions Open ${f N} \ {f O} \ {f N} \ {f E}$

SCHEDULE DB - VERIFICATION

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

		Book/Adjusted Carrying \	/alue Check
1.	Part A, Section 1, Column 14.	88,547,117	
2.	Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance		
3.	Total (Line 1 plus Line 2)		88,547,117
4.	Part D, Section 1, Column 5	1,117,339,828	
5.	Part D, Section 1, Column 6	(1,034,279,527)	
6.	Total (Line 3 minus Line 4 minus Line 5)		5,486,816
		Fair Value Che	ck
7.	Part A, Section 1, Column 16	88,547,114	
8.	Part B, Section 1, Column 13		
9.	Total (Line 7 plus Line 8)		83,060,299
10.	Part D, Section 1, Column 8	1, 117, 339, 827	
11.	Part D, Section 1, Column 9	(1,034,279,528)	
12	Total (Line 9 minus Line 10 minus Line 11)		
		Potential Exposure	Check
13.	Part A, Section 1, Column 21	161,539,583	
14.	Part B, Section 1, Column 20	29,208,500	
15.	Part D, Section 1, Column 11	190,748,083	
16.	Total (Line 13 plus Line 14 minus Line 15)		

SCHEDULE E - PART 2 - VERIFICATION

(Cash Equivalents)

	, , ,	1	2
		Year To Date	Prior Year Ended December 31
1.	Book/adjusted carrying value, December 31 of prior year	295,281,728	258,600,632
2.	Cost of cash equivalents acquired	7,318,405,661	5,210,188,435
3.	Accrual of discount	3,498,650	4,629,294
4.	Unrealized valuation increase (decrease)		
5.	Total gain (loss) on disposals	23,625	21,697
6.	Deduct consideration received on disposals	7,476,731,460	5 , 178 , 158 , 331
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)	140,478,204	295,281,728
11.	Deduct total nonadmitted amounts		
12.	Statement value at end of current period (Line 10 minus Line 11)	140,478,204	295,281,728