QUARTERLY STATEMENT

OF THE

C.M. Life Insurance Company

TO THE

Insurance Department

OF THE

STATE OF

FOR THE QUARTER ENDED SEPTEMBER 30, 2018

LIFE AND ACCIDENT AND HEALTH

2018



LIFE AND ACCIDENT AND HEALTH COMPANIES - ASSOCIATION EDITION

QUARTERLY STATEMENT

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

	C.M. L	ife Insura	nce Compa	ny	
NAIC	Group Code <u>0435</u> <u>0435</u>	NAIC Company Co		-	06-1041383
Organized under the Laws of	(Current) (Prior) Connecticut		, State of Domicile or Port of	Entry	СТ
Country of Domicile		United States of	of America		
Incorporated/Organized	04/25/1980		Commenced Business _		05/12/1981
Statutory Home Office	100 Bright Meadow Boule	vard ,		Enfield , CT, l	JS 06082
	(Street and Number)		(City o	r Town, State, Co	untry and Zip Code)
Main Administrative Office		1295 State	Street		
c	principal MA LIC 01111	(Street and I	Number)	413-788-	0.4.1.1
	pringfield, MA, US 01111 pwn, State, Country and Zip Code)		(A	Area Code) (Telep	
Mail Address	1295 State Street			Springfield MA	LIS 01111
Ividii Address	(Street and Number or P.O. Box)	(City o	Springfield, MA or Town, State, Co	untry and Zip Code)
Primary Location of Pooks and E	Popordo	1295 State	Stroot		, ,
Primary Location of Books and F		(Street and I			
	pringfield , MA, US 01111	,	·	413-788-	
(City or 1)	own, State, Country and Zip Code)		(A	Area Code) (Telep	hone Number)
Internet Website Address		www.massm	utual.com		
Statutory Statement Contact	Yiji S. Sta	arr		617-	695-4651
, <u>-</u>	(Name)		·_	(Area Code) (Telephone Number)
y	starr02@massmutual.com (E-mail Address)			413-226- (FAX Nun	
	,	OFFICE	ERS	·	,
President and Chief	Dagar William Crand	all.	Tropouror		Todd Covett Dieken
Executive Officer Secretary			Appointed Actuary		Todd Garett Picken Douglas Wright Taylor
Elizabeth Ward Chicares, Exe Chief Financ Roger William Crar Michael James	ial Officer Mic	OTHE hael Robert Fanning, E DIRECTORS OF Michael Robe	executive Vice President		thy Corbett, Executive Vice President Elizabeth Ward Chicares
State of County of	Massachusetts Hampden	SS:			
all of the herein described assestatement, together with related condition and affairs of the said in accordance with the NAIC Arrules or regulations require differespectively. Furthermore, the sexact copy (except for formatting to the enclosed statement.	its were the absolute property of the exhibits, schedules and explanations reporting entity as of the reporting perioual Statement Instructions and Actiferences in reporting not related to scope of this attestation by the description of the	e said reporting entity, therein contained, and priod stated above, and counting Practices and o accounting practices ribed officers also inclu- of the enclosed statem	free and clear from any lien nexed or referred to, is a full of its income and deductions Procedures manual except and procedures, according des the related corresponding ent. The electronic filing may	s or claims thered and true statemen s therefrom for the to the extent that: g to the best of ng electronic filing	that on the reporting period stated above, on, except as herein stated, and that this it of all the assets and liabilities and of the period ended, and have been completed (1) state law may differ; or, (2) that state their information, knowledge and belief, with the NAIC, when required, that is an various regulators in lieu of or in addition
Roger William Cra President and Chief Exec		Pia Denise F Secret	-		Todd Garett Picken Treasurer
Subscribed and sworn to before day of	me this		a. Is this an original filin b. If no, 1. State the amendm 2. Date filed		

Number of pages attached......

ASSETS

2.2 Common stocks 329,672,285 329,672 3. Mortgage loans on real estate: 3.1 First liens 915,191,977 915,191 3.2 Other than first liens. 4. Real estate: 4.1 Properties occupied by the company (less \$ encumbrances) encumbrances) 4.2 Properties held for the production of income (less \$ encumbrances) 4.3 Properties held for sale (less \$ encumbrances) encumbrances) 5. Cash (\$	Admitted Assets ,425
1. Bonds 4,254,384,425 4,254,384 2. Stocks: 27,562,675 27,562 2.1 Preferred stocks 329,672,285 329,672 3. Mortgage loans on real estate: 3,1 First liens 915,191,977 915,191 3.2 Other than first liens. 915,191,977 915,191 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) encumbrances 5. Cash (\$ (7,547,316)), cash equivalents (\$ 18,324,753) and short-term investments (\$ 24,916,854) 35,694,291 35,694 6. Contract loans (including \$ premium notes) 146,892,373 146,892 7. Derivatives 295,917,612 295,917 8. Other invested assets 173,891,981 1,379,182 172,512 9. Receivables for securities 262,090,556 262,090	,425
2. Stocks: 2.1 Preferred stocks 27,562,675 27,562 2.2 Common stocks 329,672,285 329,672 3. Mortgage loans on real estate: 3.1 First liens 915,191,977 915,191 3.2 Other than first liens 915,191,977 915,191 4. Real estate: 4.1 Properties occupied by the company (less \$ encumbrances) encumbrances) 4.2 Properties held for the production of income (less \$ encumbrances) encumbrances) 5. Cash (\$,67526,560,290 ,285317,923,074 ,977937,488,060
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6. Contract loans (including \$ premium notes) .146,892,373 .146,892 7. Derivatives .295,917,612 .295,917 8. Other invested assets .173,891,981 .1,379,182 .172,512 9. Receivables for securities .262,090,556 .262,090	
7. Derivatives 295,917,612 295,917 8. Other invested assets 173,891,981 1,379,182 172,512 9. Receivables for securities 262,090,556 262,090	,291304,328,282
8. Other invested assets 173,891,981 1,379,182 172,512 9. Receivables for securities 262,090,556 262,090	,373148,004,355
9. Receivables for securities	,612396 , 157 , 119
	,799185,639,250
10. Securities lending reinvested collateral assets	,556218,771,246
-	
33 3	
12. Subtotals, cash and invested assets (Lines 1 to 11)	,9936,657,191,335
13. Title plants less \$ charged off (for Title insurers	
"	
14. Investment income due and accrued96,960,63696,960	,636100 ,533 , 167
15. Premiums and considerations:	
15.1 Uncollected premiums and agents' balances in the course of collection	,73780 ,804
15.2 Deferred premiums, agents' balances and installments booked but	
deferred and not yet due (including \$	
earned but unbilled premiums)(34,871,661)	,661)(28,604,680)
15.3 Accrued retrospective premiums (\$	
contracts subject to redetermination (\$)	
16. Reinsurance:	
16.1 Amounts recoverable from reinsurers	,32616,334,540
16.2 Funds held by or deposited with reinsured companies	
16.3 Other amounts receivable under reinsurance contracts	,3746,227,415
17. Amounts receivable relating to uninsured plans	
18.1 Current federal and foreign income tax recoverable and interest thereon	,912
18.2 Net deferred tax asset	, 18725 , 679 , 840
19. Guaranty funds receivable or on deposit	,273946,678
20. Electronic data processing equipment and software	
21. Furniture and equipment, including health care delivery assets	
(\$	
23. Receivables from parent, subsidiaries and affiliates301,624301	,624301,243
24. Health care (\$	
25. Aggregate write-ins for other than invested assets	,256739,020
26. Total assets excluding Separate Accounts, Segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	,6576,779,429,362
27. From Separate Accounts, Segregated Accounts and Protected Cell	007 4 077 054 700
	,8371,877,854,722
28. Total (Lines 26 and 27) 8,560,667,475 89,405,981 8,471,261	,494 8,657,284,084
DETAILS OF WRITE-INS	
1101.	
1102.	
1103.	
1199. Totals (Lines 1101 through 1103 plus 1198)(Line 11 above)	
	,256739,020
2502. Cash advanced to agents	
2503.	
2598. Summary of remaining write-ins for Line 25 from overflow page	1
2599. Totals (Lines 2501 through 2503 plus 2598)(Line 25 above) 131,926 62,670 69	

LIABILITIES, SURPLUS AND OTHER FUNDS

	LIADILITIES, SOITI LOS AND OTTILITI O	1	2
	2.070.646.060 0.00	Current Statement Date	December 31 Prior Year
	Aggregate reserve for life contracts \$3,979,646,860 less \$included in Line 6.3 (including \$		
3.	Liability for deposit-type contracts (including \$ Modco Reserve)	90,389,540	83,075,326
4.	Contract claims: 4.1 Life	11,213,658	13,448,404
_	4.2 Accident and health		
	Policyholders' dividends \$		
	6.1 Dividends apportioned for payment (including \$ Modco)		
	6.2 Dividends not yet apportioned (including \$ Modco)		
7.	6.3 Coupons and similar benefits (including \$		
	Premiums and annuity considerations for life and accident and health contracts received in advance less		
	\$ discount; including \$ accident and health premiums	4,985	6, 122
9.	Contract liabilities not included elsewhere: 9.1 Surrender values on canceled contracts		
	9.2 Provision for experience rating refunds, including the liability of \$ accident and health		
	experience rating refunds of which \$ is for medical loss ratio rebate per the Public Health		
	Service Act		
	ceded	51,687	214,015
10	9.4 Interest Maintenance Reserve	23,544,396	56,712,748
10.	Commissions to agents due or accrued-life and annuity contracts \$, accident and health \$, and deposit-type contract funds \$		
11.	Commissions and expense allowances payable on reinsurance assumed		
	General expenses due or accrued	1,358	1,028,216
13.	Transfers to Separate Accounts due or accrued (net) (including \$(5,200,297) accrued for expense allowances recognized in reserves, net of reinsured allowances)	(5 947 285)	(5 805 549)
14.	Taxes, licenses and fees due or accrued, excluding federal income taxes	842,657	1,329,518
15.1	Current federal and foreign income taxes, including \$ on realized capital gains (losses)		8,498,793
	Net deferred tax liability		
16. 17.	Unearned investment income	448,369	(462,165)
18.	Amounts held for agents' account, including \$ agents' credit balances		
	Remittances and items not allocated		
20. 21.	Net adjustment in assets and liabilities due to foreign exchange rates		
22.	Borrowed money \$ and interest thereon \$		
23.	Dividends to stockholders declared and unpaid		
24.	Miscellaneous liabilities: 24.01 Asset valuation reserve	101.302.313	96.331.973
	24.02 Reinsurance in unauthorized and certified (\$	1,109,320	1,005,500
	24.03 Funds held under reinsurance treaties with unauthorized and certified (\$) reinsurers	05 005 500	OF 007 444
	24.04 Payable to parent, subsidiaries and affiliates 24.05 Drafts outstanding		35,097,141
	24.06 Liability for amounts held under uninsured plans		
	24.07 Funds held under coinsurance		
	24.08 Derivatives		
	24.10 Payable for securities lending		
	24.11 Capital notes \$ and interest thereon \$		
	Aggregate write-ins for liabilities	356,610,498 5,057,022,029	402,097,919 5,206,269,472
	From Separate Accounts Statement		1,877,854,722
28.	Total liabilities (Lines 26 and 27)	6,924,768,866	7,084,124,194
	Common capital stock		2,500,000
30. 31.	Preferred capital stock		
32.	Surplus notes		
	Gross paid in and contributed surplus		
34. 35.	Aggregate write-ins for special surplus funds		
	Less treasury stock, at cost:	,,,,	
	36.1		
37.	36.2 shares preferred (value included in Line 30 \$		1,570,659,890
38.	Totals of Lines 29, 30 and 37	1,546,492,628	1,573,159,890
39.	Totals of Lines 28 and 38 (Page 2, Line 28, Col. 3)	8,471,261,494	8,657,284,084
0501	DETAILS OF WRITE-INS	224 602 691	222 961 046
2501. 2502.	Repurchase agreements		232,861,946 97,311,647
2503.	Derivative collateral	10,012,222	68,449,159
	Summary of remaining write-ins for Line 25 from overflow page		
2599. 3101.	Totals (Lines 2501 through 2503 plus 2598)(Line 25 above)	356,610,498	402,097,919
3101.			
3103.			
3198. 3199.	Summary of remaining write-ins for Line 31 from overflow page		
	Totals (Lines 3101 tillough 3103 plus 3136)(Line 31 above)		
3402.			
3403.	Summany of remaining write-ine for Line 24 from overflow page		
3498. 3499.	Summary of remaining write-ins for Line 34 from overflow page		

SUMMARY OF OPERATIONS

		1 1	2	3
		Current Year	Prior Year	Prior Year Ended
l .		To Date	To Date	December 31
1.	Premiums and annuity considerations for life and accident and health contracts	242,901,990	204,148,790	283,429,782
2.	Considerations for supplementary contracts with life contingencies		1,096,756	1,564,711
3. 4.	Net investment income	216,688,692	223,495,606	295,776,401 11,224,397
5.	Separate Accounts net gain from operations excluding unrealized gains or losses			11,224,037
6.	Commissions and expense allowances on reinsurance ceded	61 325 881	17 982 539	34,907,488
7.	Reserve adjustments on reinsurance ceded		17,002,000	, 100, דע
8.	Miscellaneous Income:			
0.	8.1 Income from fees associated with investment management, administration and contract			
	guarantees from Separate Accounts	28,229,625	28,349,980	38,055,414
	8.2 Charges and fees for deposit-type contracts			
	8.3 Aggregate write-ins for miscellaneous income	1,754,533	1,652,459	2,215,448
9.	Totals (Lines 1 to 8.3)	558,237,981	485,665,819	667,173,641
10.	Death benefits	74,459,939	90,906,127	110,790,460
11.	Matured endowments (excluding guaranteed annual pure endowments)			
12.	Annuity benefits	80,654,739	79,651,238	102,394,598
13.	Disability benefits and benefits under accident and health contracts	434,718	372,662	541,625
14.	Coupons, guaranteed annual pure endowments and similar benefits			
15.	Surrender benefits and withdrawals for life contracts	330,763,852	284,870,940	387,539,809
16.	Group conversions			
17.	Interest and adjustments on contract or deposit-type contract funds	3,721,527	2,903,758	3,684,030
18.	Payments on supplementary contracts with life contingencies		826,555	1,109,945
19.	Increase in aggregate reserves for life and accident and health contracts		(46, 149, 475)	(29,082,651)
20.	Totals (Lines 10 to 19)	461,336,123	413,381,805	576,977,816
21.	Commissions on premiums, annuity considerations, and deposit-type contract funds (direct	40	00 500 500	A. A =
	business only)	42,781,505	20,562,939	34,084,539
22.	Commissions and expense allowances on reinsurance assumed		F0 000 004	C4 071 404
23.	General insurance expenses	7,788,018	53,969,601	64,071,484
24.	Insurance taxes, licenses and fees, excluding federal income taxes	/,806,812		10,237,842
25.	Increase in loading on deferred and uncollected premiums			(3,351,738)
26.	Net transfers to or (from) Separate Accounts net of reinsurance		(91,246,522) (4,497,473)	(119,415,406)
27.	Aggregate write-ins for deductions			(6,353,960)
28.	Totals (Lines 20 to 27)		397,400,617	556,250,577
29.	Net gain from operations before dividends to policyholders and federal income taxes (Line 9 minus		88,265,202	110,923,064
30.	Line 28)	86,403,256	88,265,202	110,923,064
31.	Net gain from operations after dividends to policyholders and before federal income taxes (Line 29			
31.	minus Line 30)	86,403,256		110,923,064
32.	Federal and foreign income taxes incurred (excluding tax on capital gains)		22,791,506	32,332,523
33.	Net gain from operations after dividends to policyholders and federal income taxes and before	,,,	,,	,,
00.	realized capital gains or (losses) (Line 31 minus Line 32)	72,296,638	65,473,696	78,590,541
34.	Net realized capital gains (losses) (excluding gains (losses) transferred to the IMR) less capital	, ,	, ,	, ,
	gains tax of \$4,634,968 (excluding taxes of \$(491,906)			
	transferred to the IMR)	(3,797,286)	(9,547,852)	(11,534,171)
35.	Net income (Line 33 plus Line 34)	68,499,352	55,925,844	67,056,370
	CAPITAL AND SURPLUS ACCOUNT			
36.	Capital and surplus, December 31, prior year	1,573,159,890	1,546,673,795	1,546,673,795
37.	Net income (Line 35)		55,925,844	67,056,370
38.	Change in net unrealized capital gains (losses) less capital gains tax of \$(12,654,924)	(42,537,848)	(16,833,671)	
39.	Change in net unrealized foreign exchange capital gain (loss)	(15,645,911)	33,265,693	36,645,245
40.	Change in net deferred income tax		(2,162,524)	(51,526,173)
41.	Change in nonadmitted assets			
42.	Change in liability for reinsurance in unauthorized and certified companies	(103,820)		(1,005,500)
43.	Change in reserve on account of change in valuation basis, (increase) or decrease	(8,700,000)		
44.	Change in asset valuation reserve	(4,970,340)	(13, 159, 550)	(15, 107, 880)
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	ļ		
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			/0.070.001
53.	Aggregate write-ins for gains and losses in surplus		(10,116,251)	(9,678,934)
54.	Net change in capital and surplus for the year (Lines 37 through 53)		54,875,199	26,486,095
55.	Capital and surplus, as of statement date (Lines 36 + 54)	1,546,492,628	1,601,548,994	1,573,159,890
00 - 1	DETAILS OF WRITE-INS	1 700 000	4 004	0.000 =0-
	Revenue sharing			2,206,530
	Miscellaneous	, , , , , , , , , , , , , , , , , , ,	,	8,918
	Cumpany of complains with ine faction 0.2 from qualifur and			
	Summary of remaining write-ins for Line 8.3 from overflow page		4 650 450	0.045.440
08.399.	Totals (Lines 08.301 through 08.303 plus 08.398) (Line 8.3 above)	1,754,533	1,652,459	2,215,448
2701.	Reinsurance ceded adjustment	(5,650,723)	(5,516,549)	
	Miscellaneous charges to operations			1,315,124
	Curponer, of remaining units ing fay Line 97 from grantlers page			
0700	Summary of remaining write-ins for Line 27 from overflow page	(4,949,947)	(4 407 472)	/6 252 060\
	Totals /Lines 0701 through 0700 plus 0700\/Lines 07 -Level	14 944 947	(4,497,473)	(6,353,960)
2799.	Totals (Lines 2701 through 2703 plus 2798)(Line 27 above)		/E E40 E40	/7 000 004
2799. 5301.	Reinsurance ceded adjustment	(5,650,723)		
2799. 5301. 5302.	Reinsurance ceded adjustment	(5,650,723)	(4,599,702)	(2,009,850)
2799. 5301. 5302. 5303.	Reinsurance ceded adjustment Other changes in surplus	(5,650,723)		
2799. 5301. 5302. 5303. 5398.	Reinsurance ceded adjustment	(5,650,723)	(4,599,702)	(2,009,850)

	CASH FLOW			
		1 Current Year To Date	2 Prior Year To Date	3 Prior Year Ended December 31
	Cash from Operations			
1. F	Premiums collected net of reinsurance	250,188,491	213,859,482	292,148,09
2. 1	Net investment income	223,076,876	224,578,350	289,336,52
3. N	Miscellaneous income	91,263,829	33,092,109	61,053,40
4.	Total (Lines 1 to 3)	564,529,196	471,529,941	642,538,02
5. E	Benefit and loss related payments	540,814,836	489,331,810	597,589,84
6. 1	Net transfers to Separate Accounts, Segregated Accounts and Protected Cell Accounts	(106,846,881)	(90,616,544)	(119,558,21
7. (Commissions, expenses paid and aggregate write-ins for deductions	125,287,231	94,537,858	106,946,23
8. [Dividends paid to policyholders			
9. F	Federal and foreign income taxes paid (recovered) net of \$3,643,761 tax on capital			
	gains (losses)	28,841,385	14,489,404	26,812,35
10.	Total (Lines 5 through 9)	588,096,571	507,742,528	611,790,21
11. N	Net cash from operations (Line 4 minus Line 10)	(23,567,375)	(36,212,587)	30,747,81
10.	Cash from Investments			
	Proceeds from investments sold, matured or repaid: 12.1 Bonds	512 146 520	700 572 542	1 155 256 25
	12.1 Bonds 12.2 Stocks			
	12.3 Mortgage loans			
				131,200,03
	12.4 Real estate		40.071.067	E0 040 00
	12.5 Other invested assets			59,249,32 833,16
	12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	(65,949,193)	13,859,434	32,770,65
	·			1.384.985.29
	12.8 Total investment proceeds (Lines 12.1 to 12.7)	5//, 191,240	957,245,771	1,364,965,29
	Cost of investments acquired (long-term only):	004 700 047	004 707 070	1 154 754 05
	13.1 Bonds		901,737,072	
	13.2 Stocks	3,964,515	1,262,428	3,220,46
	13.3 Mortgage loans			
	13.4 Real estate 13.5 Other invested assets	00 004 000		
	13.6 Miscellaneous applications	(27,202,609)	(1,795,921)	568,27
	13.7 Total investments acquired (Lines 13.1 to 13.6)	720,260,618	1,009,990,976	1,290,431,80
	Net cash from investments (Line 12.8 minus Line 13.7 and Line 14)	(959,708) (142,109,664)	(35,271)	4,176,04 90,377,44
	Cash from Financing and Miscellaneous Sources			
16. (Cash provided (applied):			
1	16.1 Surplus notes, capital notes			
1	16.2 Capital and paid in surplus, less treasury stock			
	16.3 Borrowed funds			
1	16.4 Net deposits on deposit-type contracts and other insurance liabilities	4,447,575	(1,511,236)	1,721,02
1	16.5 Dividends to stockholders			
1	16.6 Other cash provided (applied)	(107,404,527)	(49,212,504)	20,183,09
17. N	Net cash from financing and miscellaneous sources (Line 16.1 through Line 16.4 minus Line 16.5 plus Line 16.6)	(102,956,952)	(50,723,740)	21,904,12
	RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS			
18. 1	Net change in cash, cash equivalents and short-term investments (Line 11, plus Lines 15 and 17)	(268,633,991)	(139,646,261)	143,029,37
19. (Cash, cash equivalents and short-term investments:			
1	19.1 Beginning of year	304,328,282	161,298,905	161,298,90
1	19.2 End of period (Line 18 plus Line 19.1)	35,694,291	21,652,644	304,328,28
	plemental disclosures of cash flow information for non-cash transactions:	40,000,000	00 550 400	00 700 1
	Bond conversions and refinancing Bank loan rollovers	, , , .		36,780,44
	s Stock conversions . Interest cap and payment in-kind	, ,	· · · · · · · · · · · · · · · · · · ·	220,00
0.0005	5. Dividend reinvestment	329,480	540,767	589,86
	s. Return of capital		2,371,206	203,83
	B. Mortgage loans to other than			200,00

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

20.0009. Other invested assets to bonds	 	1,298,030

EXHIBIT 1

DIRECT PREMIUMS AND DEPOSIT-TYPE CONTRACTS

	DIRECT PREMIUMS AND DEPOSIT-TYPE (JONTHACTS	2	3
		Current Year	∠ Prior Year	Prior Year Ended
		To Date	To Date	December 31
1.	Industrial life			
١.	muustiai me			
		150 607 551	160 147 557	010 070 770
2.	Ordinary life insurance		102, 147, 337	218,073,772
3.	Ordinary individual annuities	940 , 147 , 729	223,638,920	494,560,569
4.	Credit life (group and individual)			
5.	Group life insurance	47.767	53,595	664,940
0.	31 34 M 3 M 3 M 3 M 3 M 3 M 3 M 3 M 3 M 3	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
6.	Group annuities			
0.	Group armunes			
_				
7.	A & H - group			
8.	A & H - credit (group and individual)	.		
9.	A & H - other			
10.	Aggregate of all other lines of business			
	7 1991 0 9 440 0 1 441 0 110 0 1 0 0 0 0 0 0 0 0 0			
11.	Cultotal	1,093,833,047	385,840,072	713 200 281
11.	Subtotal	1,090,000,047		
12.	Deposit-type contracts			
13.	Total	1,093,833,047	385,840,072	713,299,281
	DETAILS OF WRITE-INS			
1001				
1001.				
1000				
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)			
	,	1		

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Note 1 - Summary of Significant Accounting Policies and Going Concern

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:

		F/S	F/S			
	SSAP#	Page	Line#	_	2018	2017
NET INCOME						
(1) State basis (Page 4, Line 35, Columns 1 & 3)	XXX	XXX	XXX	\$	68,499,352	\$ 67,056,370
(2) State prescribed practices that increase/(decrease) NAIC SAP:) N/A	N/A	N/A		-	-
(3) State permitted practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A			<u>-</u>
(4) NAIC SAP (1-2-3=4)	XXX	XXX	XXX	\$	68,499,352	\$ 67,056,370
SURPLUS						
(5) State basis (Page 3, Line 38, Columns 1 & 2)	XXX	XXX	XXX	\$	1,546,492,628	\$ 1,573,159,890
(6) State prescribed practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A		-	-
(7) State permitted practices that increase/(decrease) NAIC SAP:	N/A	N/A	N/A	-		
(8) NAIC SAP (5-6-7=8)	XXX	XXX	XXX	\$	1,546,492,628	\$ 1,573,159,890

- Use of estimates in the preparation of the financial statements No change
- Accounting policy:

(1-5) No change

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

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

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

(7-14) No change

Going concern:

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

Note 2 – Accounting Changes and Corrections of Errors

a. For the nine months ended September 30, 2018, corrections of prior years' errors were recorded in surplus, net of tax:

	Increase (Decrease) to:							
	Prior Years'			Current		Asset		
				Year		or Liability		
	Net Ir	Net Income Surplus			Balances			
Partnerships and limited liability companies	\$	-	\$	(1,959,401)	\$	(1,959,401)		
Deferred income taxes		-		(15,913,941)		(15,913,941)		
Total	\$	-	\$	(17,873,342)		_		

Of the \$17,873,342 decrease to surplus for prior years' errors, \$15,913,941 was recorded as a change in deferred taxes and \$1,959,401 was recorded as a change in unrealized capital (losses) gains, net of tax in the Summary of Operations.

For the nine months ended September 30, 2017, corrections of prior years' errors were recorded in capital and surplus, net of tax:

	Increase (Decrease) to:							
		Prior		Current		Asset		
	Years' Net Income			Year		or Liability		
				Surplus	Balances			
			(In Millions)				
Partnership and limited liability companies	\$	-	\$	(227,387)	\$	(227,387)		
Other than invested assets		(2,921,931)		(2,921,931)		(2,921,931)		
General expenses due or accrued		(447,929)		(447,929)		447,929		
Other Liabilities		(351,787)		(351,787)		(351,787)		
Total	\$	(3,721,647)	\$	(3,949,034)		_		

Of the \$3,949,034 decrease to surplus for prior years' errors, \$3,721,647 was recorded as prior period adjustments and \$227,387 was recorded net of tax as a change in nonadmitted assets in the Summary of Operations.

b. Adoption of new accounting standards:

In June 2016, the NAIC adopted substantive revisions to Statements of Statutory Accounting Principles (SSAP) No. 51R, Life Contracts, to incorporate references to the Valuation Manual and to facilitate the implementation of principles-based reserving (PBR), which were effective on January 1, 2017. The adoption of PBR only applies to new life insurance policies issued after January 1, 2017, however the Company plans to adopt these revisions to SSAP No. 51R using the 3-year phased in approach by no later than January 1, 2020. The Company currently uses formulas and assumptions to determine reserves as prescribed by state laws and regulations. Under PBR, the Company will be required to hold the higher of (a) the reserve using prescribed factors and (b) the PBR reserve which considers a wide range of future economic conditions, computed using justified company experience factors, such as mortality, policyholder behavior and expenses. The Company is currently assessing the impact of these modifications on the Company's financial statements.

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

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

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

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

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

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

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:
 - 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) OTTI			(3)		
			Amortized	Recognized					
			Cost Basis			in Los			
		ŀ	Before	(2a)		2b)		Fair Value
			OTTI	,	erest		on-interest		1-(2a+2b)
							•		
OTT	Trecognized 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	_	84,116				27,511	_	56,605
C.	Total first quarter	\$	84,116	\$		\$	27,511	\$	56,605
	Trecognized in the second quarter	_		•		_			
d.	Intent to sell	\$	-	\$	-	\$	-	\$	-
e.	Inability or lack of intent to retain the investment								
	in the security for a period of time sufficient to recover the amortized cost basis		39,548				38,183		1,365
f.	Total second quarter	¢		\$		\$		Φ.	
١.	Total second quarter	φ	39,548	Φ	<u> </u>	φ	38,183	\$	1,365
ОТТ	Trecognized 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	_	613,486				114,432		499,054
i.	Total third quarter	\$	613,486	\$		\$	114,432	\$	499,054
	Trecognized in the fourth quarter	Φ		Ф		•		Φ	
j. k.	Intent to sell Inability or lack of intent to retain the investment	\$	-	Ф	-	Ф	-	Ф	-
K.	in the security for a period of time sufficient to								
	recover the amortized cost basis		_		_		_		_
I.	Total fourth quarter	\$		\$		\$		\$	
٠.	Total Total at quartor	Ψ		Ψ		Ψ		Ψ	
m.	Annual aggregate total			\$	_	\$	180,126		

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
07386HEN7	\$ 2,548	\$ 136	\$ (2,412)	\$ 136	\$ 94	March 31, 2018
79548KXQ6	81,567	56,468	(25,099)	56,468	56,792	March 31, 2018
76110H4M8	2,014	579	(1,435	579	504	June 30, 2018
863579DV7	37,534	786	(36,748)	786	3,932	June 30, 2018
05535DCF9	495,304	450,362	(44,942)	450,362	449,510	September 30, 2018
07386HCP4	564	(1,633)	(2,197	(1,633)	83	September 30, 2018
07386HEN7	-	(2,412)	(2,412	(2,412)	-	September 30, 2018
76110H4M8	1,939	(1,094)	(3,033	(1,094)	189	September 30, 2018
79548KXQ6	78,126	53,027	(25,099)	53,027	45,313	September 30, 2018
863579DV7	37,552	804	(36,748	804	3,633	September 30, 2018
Totals	\$ 737,149	\$ 557,023	\$ (180,126)	\$ 557,023	\$ 560,049	_

(4) As of September 30, 2018, the gross unrealized losses and fair values for investments in structured and loan-backed securities for which an OTTI has not been recognized in earnings follow:

a. The aggregate amount of unrealized losses:

 1. Less than 12 months
 \$ (1,852,192)

 2. 12 months or longer
 \$ (2,247,413)

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

1. Less than 12 months \$ 260,193,572 2. 12 months or longer \$ 56,856,527

(5) No change

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

- f. Repurchase agreements transactions accounted for as secured borrowing:
 - (1) The Company has entered into repurchase agreements whereby the Company sells securities and simultaneously agrees to repurchase the same or substantially the same securities. These repurchase agreements are accounted for as collateralized borrowings with the proceeds from the sale of the securities recorded as a liability and the underlying securities continue to be recorded as an investment by the Company. Earnings on these investments are recorded as investment income and the difference between the proceeds and the amount at which the securities will be subsequently reacquired is amortized as interest expense. Repurchase agreements are used as a tool for overall portfolio management to help ensure the Company maintains adequate assets in order to provide yield, spread and duration to support liabilities and other corporate needs.

The Company provides collateral, as dictated by the repurchase agreements, to the counterparty in exchange for a loan. If the fair value of the securities sold becomes less than the loan, the counterparty may require additional collateral.

The carrying value, which is at cost, reported in Liabilities as repurchase agreements approximates the fair value.

(2) Type of Repo Trades Used

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

(3) Original (Flow) & Residual Maturity

			FIRST Q	UΑ	RTER			SECOND (QU	ARTER	
		1	2		3	4	5	6		7	8
					AVERAGE					AVERAGE	
					DAILY	ENDING				DAILY	ENDING
		MINIMUM	MAXIMUM		BALANCE	BALANCE	MINIMUM	MAXIMUM		BALANCE	BALANCE
a.	Open – No Maturity	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
b.	Overnight	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
C.	2 Days to 1 Week	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
d.	> 1 Week to 1 Month	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
e.	> 1 Month to 3 Months	\$ -	\$ 170,975,000	\$	97,700,000	\$ 170,975,000	\$ -	\$ 58,195,000	\$	40,288,846	\$ -
f.	> 3 Months to 1 Year	\$ 58,872,500	\$ 232,277,500	\$	132,946,071	\$ 58,872,500	\$ 175,000,000	\$ 233,070,000	\$	192,867,692	\$ 233,070,000
g.	> 1 Year	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -

			THIRD C	QUA	ARTER			FOURTH	QU	ARTER	
		9	10		11	12	13	14		15	16
					AVERAGE					AVERAGE	
					DAILY	ENDING				DAILY	ENDING
		MINIMUM	MAXIMUM		BALANCE	BALANCE	MINIMUM	MAXIMUM		BALANCE	BALANCE
a.	Open – No Maturity	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
b.	Overnight	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
c.	2 Days to 1 Week	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
d.	> 1 Week to 1 Month	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -
e.	> 1 Month to 3 Months	\$ -	\$ 58,820,000	\$	18,098,462	\$ 58,820,000	\$ -	\$ -	\$	-	\$ -
f.	> 3 Months to 1 Year	\$ 174,475,000	\$ 233,070,000	\$	214,717,692	\$ 174,475,000	\$ -	\$ -	\$	-	\$ -
g.	> 1 Year	\$ -	\$ -	\$	-	\$ -	\$ -	\$ -	\$	-	\$ -

- (4) The company did not have any repurchase agreements where securities sold and/or acquired resulted in default as of September 30, 2018.
- (5) Securities "Sold" Under Repo Secured Borrowing

			FIRST Q	UARTER			SECOND	QUARTER	
		1	2	3	4	5	6	7	8
				AVERAGE				AVERAGE	
				DAILY	ENDING			DAILY	ENDING
		MINIMUM	MAXIMUM	BALANCE	BALANCE	MINIMUM	MAXIMUM	BALANCE	BALANCE
a.	BACV	XXX	XXX	XXX	\$ 229,847,500	XXX	XXX	XXX	\$ 233,070,000
b.	Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
C.	Fair Value	\$ 229,847,500	\$ 232,277,500	\$ 230,646,071	\$ 229,847,500	\$ 233,070,000	\$ 233,195,000	\$ 233,156,538	\$ 233,070,000

			THIRD C	UARTER			FOURTH	QUARTER	
		9	10	11	12	13	14	15	16
				AVERAGE				AVERAGE	
				DAILY	ENDING			DAILY	ENDING
		MINIMUM	MAXIMUM	BALANCE	BALANCE	MINIMUM	MAXIMUM	BALANCE	BALANCE
a.	BACV	XXX	XXX	XXX	\$ 233,295,000	XXX	XXX	XXX	\$ -
b.	Nonadmitted - Subset of BACV	XXX	XXX	XXX	\$ -	XXX	XXX	XXX	\$ -
C.	Fair Value	\$ 232,545,000	\$ 233,295,000	\$ 232,816,154	\$ 233,295,000	\$ -	\$ -	\$ -	\$ -

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

ENDING BALANCE

		1	T	2	3	4	5	6	7		3
										NC	N-
		NONE		NAIC 1	NAIC 2	NAIC 3	NAIC 4	NAIC 5	NAIC 6	ADMI	TTED
a.	Bonds - BACV	\$ -	\$	233,295,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$	-
b.	Bonds - FV	-		233,295,000	-	-	-	-	-		-
c.	LB & SS - BACV	-		-	-	-	-	-	-		-
d.	LB & SS - FV	-		-	-	-	-	-	-		-
e.	Preferred Stock - BACV	-		-	-	-	-	-	-		-
f.	Preferred Stock - FV	-		-	-	-	-	-	-		-
g.	Common Stock	-		-	-	-	-	-	-		-
h.	Mortgage Loans - BACV	-		-	-	-	-	-	-		-
i.	Mortgage Loans - FV	-		-	-	-	-	-	-		-
j.	Real Estate - BACV	-		-	-	-	-	-	-		-
K	Real Estate - FV	-		-	-	-	-	-	-		-
I.	Derivatives - BACV	-		-	-	-	-	-	-		-
m.	Derivatives - FV	-		-	-	-	-	-	-		-
n.	Other Invested Assets - BACV	-	1	-	-	-	-	-	-		-
ο.	Other Invested Assets - FV	-	1	-	-	-	-	-	-		-
p.	Total Assets - BACV	\$ -	\$	233,295,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$	-
q.	Total Assets - FV	\$ -	\$	233,295,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$	-

p=a+c+e+g+h+j+l+n q=b+d+f+g+i+k+m+o

(7) Collateral Received - Secured Borrowing

			FIRST C	UΑ	RTER			SECOND (QUA	ARTER	
		1	2		3	4	5	6		7	8
					AVERAGE					AVERAGE	
					DAILY	ENDING				DAILY	ENDING
		MINIMUM	MAXIMUM		BALANCE	BALANCE	MINIMUM	MAXIMUM		BALANCE	BALANCE
a.	Cash	\$ 39,204	\$ 2,417,949	\$	1,243,625	\$ 2,417,949	\$ 1,507,817	\$ 3,243,378	\$	2,337,512	\$ 2,902,655
b.	Securities (FV)	\$ 173,122,939	\$ 232,310,358	\$	226,856,437	\$ 230,493,641	\$ 233,239,490	\$ 233,972,308	\$	233,676,389	\$ 233,972,308

			THIRD C	λΠΥ	RTER				FOURTH	Qι	JARTER		
		9	10		11	12	13		14		15	T	16
				Ì	AVERAGE						AVERAGE		
				Ì	DAILY	ENDING					DAILY		ENDING
		MINIMUM	MAXIMUM	<u> </u>	BALANCE	BALANCE	MINIMUM		MAXIMUM		BALANCE		BALANCE
a.	Cash	\$ 1,537,655	\$ 2,902,655	\$	1,981,686	\$ 2,350,100	\$ -	:	\$ -	\$	-	\$	-
b.	Securities (FV)	\$ 232.753.810	\$ 234.263.262	\$	233,489,635	\$ 234 263 262	\$ _	1	\$ -	\$	_	\$	

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

ENDING BALANCE

		1 NONE	2 NAIC 1	3 NAIC 2	4 NAIC 3	5 NAIC 4	6 NAIC 5	7 NAIC 6		8 DOES NOT QUALIFY AS ADMITTED
a.	Cash	\$ 2,350,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$	-	\$ -
b.	Bonds - FV	-	234,263,262	-	-	-	-	-		-
C.	LB & SS - FV	-	-	-	-	-	-	-		-
d.	Preferred Stock - FV	-	-	-	-	-	-	-		-
e.	Common Stock	-	-	-	-	-	-	-		-
f.	Mortgage Loans - FV	-	-	-	-	-	-	-		-
g.	Real Estate - FV	-	-	-	-	-	-	-		-
h.	Derivatives - FV	-	-	-	-	-	-	-		-
i.	Other Invested Assets - FV	-	-	-	-	-	-	-		-
j.	Total Collateral Assets - FV (Sum of a through i)	\$ 2,350,100	\$ 234,263,262	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -

(9) Allocation of Aggregate Collateral by Remaining Contractual Maturity

		FAIR VALUE
a.	Overnight and Continuous	\$ =
b.	30 Days or Less	\$ 174,475,000
C.	31 to 90 Days	\$ 58,820,000
Ч	> 90 Days	\$ _

- (10) The company did not have any repurchase agreements where cash collateral received was reinvested as of September 30, 2018.
- (11) Liability to Return Collateral Secured Borrowing (Total)

			FIRST C)UA	ARTER			SECOND (QUA	ARTER	
		1	2		3	4	5	6		7	8
					AVERAGE					AVERAGE	
					DAILY	ENDING				DAILY	ENDING
		MINIMUM	MAXIMUM		BALANCE	BALANCE	MINIMUM	MAXIMUM		BALANCE	BALANCE
a.	Cash (Collateral – All)	\$ 39,204	\$ 2,417,949	\$	1,243,625	\$ 2,417,949	\$ 1,507,817	\$ 3,243,378	\$	2,337,512	\$ 2,902,655
b.	Securities Collateral (FV)	173,122,939	232,310,358		226,856,437	230,493,641	\$ 233,239,490	233,972,308		233,676,389	233,972,308

		THIRD C	U/	ARTER			FOURTH	Ql	JARTER	
	9	10		11	12	13	14		15	16
				AVERAGE					AVERAGE	
				DAILY	ENDING				DAILY	ENDING
	MINIMUM	MAXIMUM		BALANCE	BALANCE	MINIMUM	MAXIMUM		BALANCE	BALANCE
a. Cash (Collateral – All)	\$ 1,537,655	\$ 2,902,655	\$	1,981,686	\$ 2,350,100	\$ -	\$ -	\$	-	\$ -
b Securities Collateral (EV)	\$ 232 753 810	\$ 234 263 262	\$	233 489 635	\$ 234 263 262	\$ _	\$ _	\$	_	\$ _

- g. Reverse repurchase agreements transactions accounted for as secured borrowing: The Company did not have any reverse repurchase agreements transactions accounted for as secured borrowing.
- h. Repurchase agreements transactions accounted for as a sale: The Company did not have any repurchase agreements transactions accounted for as a sale.
- i. Reverse repurchase agreements transactions accounted for as a sale: The Company did not have any reverse repurchase agreements transactions accounted for as a sale.
- j. Real estate No change
- k. Low-Income Housing Tax Credit No change
- I. Restricted Assets No change
- m. Working capital finance investments: The Company did not invest in working capital finance investments.
- Offsetting and netting of assets and liabilities: The Company reports derivative and repurchase agreement assets and liabilities as gross
 in the financial statements without offsetting.
- o. Structured notes:

A structured note is a direct debt issuance by a corporation, municipality, or government entity, ranking pari-passu with the issuer's other debt issuance of equal seniority where either: (a) the coupon and/or principal payments are linked, in whole or in part, to prices or payment streams from index or indices, or assets deriving their value from other than the issuer's credit quality, or (b) the coupon and/or principal payments are leveraged by a formula that is different from either a fixed coupon, or a non-leveraged floating rate coupon linked to an interest rate index, including but not limited to the London Interbank Offered Rate (LIBOR) or the prime rate. As structured notes are issuer obligations without a trust, they are within the scope of SSAP No. 26, "Bonds, Excluding Loan-backed and Structured

Securities". Structured notes are different than the asset backed structured securities, which are accounted for under SSAP No. 43R, "Revised - Loan-Backed and Structured Securities", as they lack either a trust or assets backing them. The disclosure below allows regulators to assess the volume of activity in structured notes and to determine whether additional accounting or reporting revisions, such as valuation and risk-based capital, are needed. To satisfy this request, the Company is required to separately identify structured notes, on a CUSIP basis and provide information by CUSIP for actual cost, fair value, book/adjusted carrying value, and whether the structured note is a mortgage-referenced security. The following sets forth the actual cost, fair value and carrying value of structured notes as of September 30, 2018:

CUSIP			Book / Adjusted	Mortgage- Referenced Security
Identification	Actual Cost	Fair Value	Carrying Value	(YES/NO)
391164AF7	\$ 444,402	\$ 415,593	\$ 433,480	NO
Total	\$ 444,402	\$ 415,593	\$ 433,480	XXX

p. 5* Securities:

	Investment	Number of 5*	Securities	Aggregate	BACV	Aggregate Fair Value				
		Current Year	Prior Year	Current Year	Prior Year	Current Year	Prior Year			
(1)	Bonds - AC	53	21	\$67,413,370	\$28,165,693	\$65,812,925	\$28,490,007			
(2)	LB&SS - AC	-	-	-	-	-	-			
(3)	Preferred Stock - AC	3	3	2,275,572	2,275,572	2,927,190	2,707,564			
(4)	Preferred Stock - FV	-	-	-	-	-	-			
(5)	Total (1+2+3+4)	56	24	\$69,688,942	\$30,441,265	\$68,740,115	\$31,197,571			

AC - Amortized Cost FV - Fair Value

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

	 Nine Months Ended September 30, 2018						
	 General Account	Separate Account					
1. Number of CUSIPS	43	N/	Ά				
2. Aggregate Amount of Investment Income	\$ 2,091,105	N	Ά				

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

Note 7 - Investment Income - No change

Note 8 - Derivative Instruments - No change

Note 9 - Income Taxes - No change

Note 10 - Information Concerning Parent, Subsidiaries and Affiliates - No change

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 - No change

Note 14 - Liabilities, Contingencies and Assessments

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

In the normal course of business, the Company is involved in disputes, litigation and governmental or regulatory inquiries, administrative proceedings, examinations and investigations, both pending and threatened. These matters, if resolved adversely against the Company or settled, may result in monetary damages, fines and penalties or require changes in the Company's business practices. The resolution or settlement of these matters is inherently difficult to predict. Based upon the Company's assessment of these pending matters, the

Company does not believe that the amount of any judgment, settlement or other action arising from any pending matter is likely to have a material adverse effect on the statement of financial position. However, an adverse outcome in certain matters could have a material adverse effect on the results of operations for the period in which such matter is resolved, or an accrual is determined to be required, on the financial statement financial position, or on our reputation.

The Company evaluates the need for accruals of loss contingencies for each matter. When a liability for a matter is probable and can be estimated, the Company accrues an estimate of the loss and any related insurance recoveries, if any. An accrual is subject to subsequent adjustment as a result of additional information and other developments. The resolution of matters are inherently difficult to predict, especially in the early stages of matter. Even if a loss is probable, due to many complex factors, such as speed of discovery and the timing of court decisions or rulings, a loss or range of loss may not be reasonably estimated until the later stages of the matter. For matters where a loss is material and it is either probable or reasonably possible then it is disclosed. For matters where a loss may be reasonably possible, but not probable, or is probable but not reasonably estimated, no accrual is established, but the matter, if material, is disclosed. The Company estimates that as of September 30, 2018, the aggregate range of reasonably possible losses is not material.

Note 15 - Leases - No change

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

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

- a. Transfers of receivables reported as sales No change
- b. Transfer and servicing of financial assets:
 - (1) No change
 - (2) The Company did not have any servicing assets or liabilities in 2018 or 2017.
 - (3) No change
 - (4) The Company did not have interests that continue to be held by a transferor in securitized financial assets in 2018 or 2017.
 - (5-7) No change
- c. Wash sales:
 - (1) In the course of the Company's investment management activities, securities may be sold and reacquired within 30 days to enhance the Company's yield on its investment portfolio.
 - (2) The Company did not sell any securities with the NAIC Designation 3 or below, or unrated, through the nine months ended September 30, 2018 that were reacquired within 30 days of the sale date.

Note 18 - Gain or Loss to the Reporting Entity from Uninsured Plans and the Uninsured Portion of Partially Insured Plans - No change

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

Note 20 - Fair Value Measurements

- a. Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The authoritative guidance around fair value establishes a measurement framework that includes a hierarchy used to classify the inputs used in measuring fair value. The hierarchy prioritizes the inputs to valuation techniques into three levels. Each level reflects a unique description of the inputs that are significant to the fair value measurements. The levels of the fair value hierarchy are as follows:
 - Level 1 Observable inputs in the form of quoted prices for identical instruments in active markets.
 - Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be derived from observable market data for substantially the full term of the assets or liabilities.
 - Level 3 One or more unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using internal models, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

When available, the Company generally uses unadjusted quoted market prices from independent sources to determine the fair value of investments, and classifies such items within Level 1 of the fair value hierarchy. If quoted prices are not available, prices are derived from observable market data for similar assets in an active market or obtained directly from brokers for identical assets traded in inactive 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:

			S	Septe	mber 30, 20°	18		
							Net Asset	
		Level 1	Level 2		Level 3		(NAV)	Total
Financial assets:								
Bonds:								
Industrial and miscellaneous	\$	-	\$ 1,426,099	\$	783,357	\$	-	\$ 2,209,456
Parent, subsidiaries and affiliates		-	1,472,502		6,468,543		-	7,941,045
Preferred stocks		469,337	-		82,877		-	552,214
Common stock - subsidiary and affiliates		16,105,977	-		-		-	16,105,977
Common stock – unaffiliated		149,195	-		2,586,087		-	2,735,282
Derivatives:								
Interest rate swaps		_	259,554,251		_		-	259,554,251
Options .		_	12,804,524		-		-	12,804,524
Currency swaps		-	21,579,200		_		-	21,579,200
Forward contracts		_	1,968,099		_		_	1,968,099
Financial futures		_	11,540		_		-	11,540
Separate account assets	1,8	867,744,186	2,651		-		-	1,867,746,837
Total financial assets carried								
at fair value	\$ 1,8	884,468,695	\$ 298,818,866	\$	9,920,864	\$	<u>-</u>	\$ 2,193,208,425
Financial liabilities:								
Repurchase agreements								
Derivatives:								
Interest rate swaps	\$	-	\$ 396,977,027	\$	-	\$	-	\$ 396,977,027
Options		-	1,260,515		-		-	1,260,515
Currency swaps		-	14,651,751		-		-	14,651,751
Forward contracts		-	1,107,384		-		-	1,107,384
Credit default swaps		-	15,279		-		-	15,279
Financial futures		-	21,802,965		-		-	21,802,965
Total financial liabilities carried								
at fair value	\$	-	\$ 435,814,921	\$	-	\$	-	\$ 435,814,921

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

		[Dece	ember 31, 201	7		
					Ne	et Asset Value	
	Level 1	Level 2		Level 3		(NAV)	Total
Financial assets:							
Bonds:							
Special revenue	\$ -	\$ 754,875	\$	-	\$	-	\$ 754,875
Industrial and miscellaneous	-	15,815		2,213,347		-	2,229,162
Parent, subsidiaries and affiliates	-	-		6,740,295		-	6,740,295
Preferred stocks	-	-		167,887		-	167,887
Common stock - subsidiary and affiliates	17,616,664	-		-		-	17,616,664
Common stock – unaffiliated	1,725,386	-		3,274,658		-	5,000,044
Derivatives:							
Interest rate swaps	-	356,485,217		-		-	356,485,217
Options	-	20,306,086		-		-	20,306,086
Currency swaps	-	18,864,647		49,359		-	18,914,006
Forward contracts	-	451,810		-		-	451,810
Separate account assets	1,877,851,769	2,953		-		-	1,877,854,722
Total financial assets carried							
at fair value	\$ 1,897,193,819	\$ 396,881,403	\$	12,445,546	\$	-	\$ 2,306,520,768
Financial liabilities:							
Derivatives:							
Interest rate swaps	\$ -	\$ 439,440,018	\$	-	\$	-	\$ 439,440,018
Options	-	492,606		-		-	492,606
Currency swaps	-	21,116,244		-		-	21,116,244
Forward contracts	-	3,487,799		-		-	3,487,799
Credit default swaps	-	21,801		-		-	21,801
Total financial liabilities carried							
at fair value	\$ -	\$ 464,558,468	\$	-	\$	-	\$ 464,558,468

For the year ended December 31, 2017, there were no significant transfers between Level 1 and Level 2.

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

	Balance as of 01/01/2018	In	Trans	fers ⁽	Out	Gains (Losses) in Net Income	Gains (Losses) in Surplus	Purchases	Issuances	Sales	Settlements	Balance as of 9/30/2018
Financial assets:												
Bonds:												
Industrial and miscellaneous	\$ 2,213,347	\$	-	\$	(420,431)	\$ (210, 175)	\$ (193,481)	\$ -	\$ 161,097	\$ -	\$ (767,000)	\$ 783,357
Parent, subsidiaries and affiliates	6,740,295		-		-	-	(271,752)	-	-	-	-	6,468,543
Preferred stocks	167,887		-		(167,887)	-	(31,239)	-	114,116	-	-	82,877
Common stocks - unaffiliated	3,274,658		-			559,117	(318,978)	51,613	1,600,312	-	(2,580,635)	2,586,087
Currency Swaps	 49,359		-		(49,359)	-		-	-	-		
Total financial assets	\$ 12,445,546	\$	_	\$	(637,677)	\$ 348,942	\$ (815,450)	\$ 51,613	\$ 1,875,525	\$ _	\$ (3,347,635)	\$ 9,920,864

⁽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 01/01/2017	Trans In	fers ^{(*}	Out	Gains osses) in et Income	•	Gains osses) in Surplus	P	urchases	Is	suances	Sales		Si	ettlements	Balance as of 2/31/2017
Financial assets:																
Bonds:																
Industrial and miscellaneous	\$ 759,384	\$ 2,096,185	\$	-	\$ 63,592	\$	(208,372)	\$	3,157	\$	12,344	\$	-	\$	(512,943)	\$ 2,213,347
Parent, subsidiaries and affiliates	5,773,679	-		-	-		966,616		-		-		-		-	6,740,295
Preferred stock	357,219	-		(253, 185)	-		(6,447)		70,300		-		-		-	167,887
Common stock - unaffiliated	2,235,432	-		(8,717)	(66,934)		840,463		266,213		8,201		-		-	3,274,658
Currency Swaps	 -	452,576		-	(403,217)		-		-		-		-		-	49,359
Total financial assets	\$ 9,125,714	\$ 2,548,761	\$	(261,902)	\$ (406,559)	\$	1,592,260	\$	339,670	\$	20,545	\$	-	\$	(512,943)	\$ 12,445,546

⁽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, 2018

			Coptonia	00, 2010			
	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Not Practicable (Carrying Value)
Financial assets:							
Bonds:	A 075 050 540	A 070 540 004	•	A 075 050 540	•	•	•
U. S. government and agencies	\$ 275,256,510	\$ 273,510,631	\$ -	\$ 275,256,510	\$ -	\$ -	\$ -
All other governments	1,352,499	1,369,236	-	1,352,499	-	-	-
States, territories and possessions	31,501,167	29,455,993	-	31,501,167	-	-	-
Political subdivisions	18,986,249	18,238,925	-	18,986,249	-	-	-
Special revenue	128,208,545	119,345,171	-	128,208,545	-	-	-
Industrial and miscellaneous	3,637,431,988	3,587,014,423	-	1,771,141,706	1,866,290,282	-	-
Parent, subsidiaries and affiliates	227,918,293	225,450,047	-	23,289,679	204,628,614	-	-
Preferred stocks	27,685,929	27,562,675	18,515,029	-	9,170,900	-	-
Common stock - subsidiary and affiliates ⁽¹⁾	16,105,977	16,105,977	16,105,977	-	-	-	-
Common stock – unaffiliated	2,735,282	2,735,282	149,195	-	2,586,087	-	-
Mortgage loans – commercial	801,895,400	799,951,395	-	-	801,895,400	-	-
Mortgage loans – residential	107,224,068	115,240,581	-	-	107,224,068	-	-
Cash, cash equivalents and							
short-term investments	35,694,291	35,694,291	(7,547,316)	43,241,607	-	-	-
Derivatives:							
Interest rate swaps	259,554,251	259,554,249	-	259,554,251	-	-	-
Options	12,804,524	12,804,524	-	12,804,524	-	-	-
Currency swaps	21,579,200	21,579,200	-	21,579,200	-	-	-
Forward contracts	1,968,099	1,968,099	-	1,968,099	-	-	-
Financial futures	11,540	11,540	_	11,540	_	-	_
Separate account assets	1,867,746,837	1,867,746,837	1,867,744,186	2,651	-	-	_
Financial liabilities:							
Repurchase agreements	233,295,000	233,295,000	_	233,295,000	-	-	_
Individual annuity contracts	4,337,858,316	3,004,101,179	_	-	4,337,858,316	_	_
Supplementary contracts	76,510,566	75,753,036	_	-	76,510,566	-	_
Derivatives:							
Interest rate swaps	396,977,027	396,977,027	_	396,977,027	_	_	_
Options	1,260,515	1,260,515	_	1,260,515	_	_	_
Currency swaps	14,651,751	14,651,750	_	14,651,751	_	_	_
Forward contracts	1,107,384	1,107,384	_	1,107,384	_	_	_
Credit default swaps	15,279	15,279	_	15,279	_	_	_
Financial futures	21,802,964	21,802,964	_	21,802,964	_	_	_
i manoiai iatares	21,002,004	21,002,004	-	21,002,004	-	-	-

⁽¹⁾ Common stock - subsidiary and affiliates does not include MML Bay State, which had a statutory carrying value of \$307,543,396.

			Decemb	er 31, 2017			
	Aggregate Fair Value	Admitted Assets	Level 1	Level 2	Level 3	Net Asset Value (NAV)	Not Practicable (Carrying Value)
Financial assets:							
Bonds:							
U. S. government and agencies	\$ 280,142,008	\$ 273,612,414	\$ -	\$ 280,142,008	\$ -	\$ -	\$ -
All other governments	1,399,436	1,393,256	-	1,399,436	-	-	-
States, territories and possessions	33,328,102	29,874,349	-	33,328,102	-	-	-
Political subdivisions	17,422,431	15,725,129	-	17,422,431	-	-	-
Special revenue	134,747,158	120,045,284	-	134,747,158	-	-	-
Industrial and miscellaneous	3,603,123,498	3,412,083,826	-	1,785,309,039	1,817,814,459	-	-
arent, subsidiaries and affiliates	277,090,387	269,585,401	-	66,146,912	210,943,475	-	-
Preferred stocks	27,833,567	26,560,290	18,550,421	-	9,283,146	-	-
Common stock - subsidiary and affiliates ⁽¹⁾	17,616,664	17,616,664	17,616,664	-	-	-	-
Common stock – unaffiliated	5,000,044	5,000,044	1,725,386	-	3,274,658	-	-
Mortgage loans – commercial	828,609,421	805,989,477	-	-	828,609,421	-	-
Mortgage loans – residential	126,974,265	131,498,583	-	-	126,974,265	-	-
Cash, cash equivalents and							
short-term investments	304,328,282	304,328,282	11,528,951	292,799,331	-	-	-
Derivatives:							
Interest rate swaps	356,485,217	356,485,217	-	356,485,217	-	-	-
Options	20,306,086	20,306,086	-	20,306,086	-	-	-
Currency swaps	18,914,006	18,914,006	-	18,864,647	49,359	-	-
Forward contracts	451,810	451,810	-	451,810	-	-	-
Separate account assets	1,877,854,722	1,877,854,722	1,877,851,769	2,953	-	-	-
Financial liabilities:							
Repurchase agreements	232,277,500	232,277,500	-	232,277,500	-	-	-
Individual annuity contracts	3,889,804,960	3,039,032,181	-	-	3,889,804,960	-	-
Supplementary contracts	68,512,468	67,834,126	-	-	68,512,468	-	-
Derivatives:							
Interest rate swaps	439,440,018	439,440,018	-	439,440,018	-	-	-
Options	492,606	492,606	-	492,606	-	-	-
Currency swaps	21,116,244	21,116,244	-	21,116,244	-	-	-
Forward contracts	3,487,799	3,487,799	-	3,487,799	-	-	-
Credit default swaps	21,801	21,801	-	21,801	-	-	-

⁽¹⁾ Common stock - subsidiary and affiliates does not include MML Bay State, which had a statutory carrying value of \$295,306,366.

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

Note 21 - Other Items

- 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 2017 Annual Statement.

Insurance and underwriting risks

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

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

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

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

Currency exchange risk

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

Credit and other market risks

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

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

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

Political Uncertainties

Political events, domestically or internationally, may directly or indirectly trigger or exacerbate the risk factors described above. Whether those underlying risk factors are driven by politics or not, the Company's dynamic approach to managing risks enables management to utilize the mitigating actions described above to attempt to reduce the potential impact of each underlying risk factor on the Company.

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

_		Sept	ember 30, 201	8		 e Months Ended tember 30, 2018
	Actual		Carrying		Fair	
Alt-A:	Cost		Value		Value	OTTI
a. Residential mortgage-backed securities \$	16,074,160	\$	18,243,253	\$	21,054,036	\$ 69,490
b. Commercial mortgage-backed securities	-		-		-	-
c. Collateralized debt obligations	-		-		-	-
d. Structured securities	-		-		-	-
e. Equity investments in SCAs *	777,514		865,225		1,034,327	-
f. Other assets	-		-		-	-
g. Total	16,851,674	\$	19,108,478	\$	22,088,363	\$ 69,490

* 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.

								Year Ended
			Dec	ember 31, 201	7		Dec	ember 31, 2017
		Actual		Carrying		Fair		
Alt-A:	_	Cost		Value		Value		OTTI
a. Residential mortgage-backed securities	\$	18,848,496	\$	20,615,798	\$	24,404,329	\$	7,692
b. Commercial mortgage-backed securities		-		-		-		-
c. Collateralized debt obligations		-		-		-		-
d. Structured securities		-		-		-		-
e. Equity investments in SCAs *		1,042,852		1,105,302		1,282,584		7,000
f. Other assets		-		-		-		
g. Total	\$	19,891,348	\$	21,721,100	\$	25,686,913	\$	14,692

^{*} 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 12, 2018, the date the financial statements were available to be issued. No events have occurred subsequent to the date of the statement of financial position and before the date of evaluation that would require disclosure.

Note 23 - Reinsurance - No change

Note 24 - Retrospectively Rated Contracts and Contracts Subject to Redetermination

- a d. No change
- e. The Company does not write any accident and health insurance premium that is subject to the Affordable Care Act risk-sharing provisions.

Note 25 - Change in Incurred Losses and Loss Adjustment Expenses-

There was no increase to reserves in 2018 for incurred losses and loss adjustment expenses attributable to insured events of prior years, which considered corrections of prior year errors.

Note 26 - Intercompany Pooling Arrangements - No change

Note 27 - Structured Settlements - No change

Note 28 - Health Care Receivables - No change

Note 29 - Participating Policies - No change

Note 30 - Premium Deficiency Reserves - No change

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

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

Note 33 - Premium and Annuity Considerations Deferred and Uncollected - No change

Note 34 - Separate Accounts - No change

Note 35 - Loss/Claim Adjustment Expenses - No change

GENERAL INTERROGATORIES

PART 1 - COMMON INTERROGATORIES

GENERAL

1.1	Did the reporting entity experience any material transactions requiring the filing of Disclosure of Material Transactions with the State of Domicile, as required by the Model Act?	Yes [] No [X]
1.2	If yes, has the report been filed with the domiciliary state?	Yes [] No []
2.1	Has any change been made during the year of this statement in the charter, by-laws, articles of incorporation, or deed of settlement of the reporting entity?	Yes [] No [X]
2.2	If yes, date of change:	
3.1	Is the reporting entity a member of an Insurance Holding Company System consisting of two or more affiliated persons, one or more of which is an insurer? If yes, complete Schedule Y, Parts 1 and 1A.	Yes [X] No []
3.2	Have there been any substantial changes in the organizational chart since the prior quarter end?	Yes [] No [X]
3.3	If the response to 3.2 is yes, provide a brief description of those changes.	
3.4	Is the reporting entity publicly traded or a member of a publicly traded group?	Yes [] No [X]
3.5	If the response to 3.4 is yes, provide the CIK (Central Index Key) code issued by the SEC for the entity/group.	
4.1	Has the reporting entity been a party to a merger or consolidation during the period covered by this statement?	Yes [] No [X]
4.2	If yes, provide the name of the entity, NAIC Company Code, and state of domicile (use two letter state abbreviation) for any entity that has ceased to exist as a result of the merger or consolidation.	
	1 Name of Entity NAIC Company Code State of Domicile	
5.	If the reporting entity is subject to a management agreement, including third-party administrator(s), managing general agent(s), attorney-in-fact, or similar agreement, have there been any significant changes regarding the terms of the agreement or principals involved? Yes [If yes, attach an explanation.] No [X] N/A [
6.1	State as of what date the latest financial examination of the reporting entity was made or is being made.	12/31/2014
6.2	State the as of date that the latest financial examination report became available from either the state of domicile or the reporting entity. This date should be the date of the examined balance sheet and not the date the report was completed or released.	12/31/2014
6.3	State as of what date the latest financial examination report became available to other states or the public from either the state of domicile or the reporting entity. This is the release date or completion date of the examination report and not the date of the examination (balance sheet date).	05/31/2016
6.4	By what department or departments?	
6.5	State of Connecticut Insurance Department Have all financial statement adjustments within the latest financial examination report been accounted for in a subsequent financial statement filed with Departments? Yes [] No [] N/A [X
6.6	Have all of the recommendations within the latest financial examination report been complied with?Yes [X] No [] N/A [
7.1	Has this reporting entity had any Certificates of Authority, licenses or registrations (including corporate registration, if applicable) suspended or revoked by any governmental entity during the reporting period?	Yes [] No [X]
7.2	If yes, give full information:	
8.1	Is the company a subsidiary of a bank holding company regulated by the Federal Reserve Board?	Yes [] No [X]
8.2	If response to 8.1 is yes, please identify the name of the bank holding company.	
8.3	Is the company affiliated with one or more banks, thrifts or securities firms?	Yes [X] No []
8.4	If response to 8.3 is yes, please provide below the names and location (city and state of the main office) of any affiliates regulated by a federal regulatory services agency [i.e. the Federal Reserve Board (FRB), the Office of the Comptroller of the Currency (OCC), the Federal Deposit	

1	2	3	4	5	6
Affiliate Name	Location (City, State)	FRB	OCC	FDIC	SEC
Baring International Investment Limited	London, UK				YES
Barings Global Advisers Limited	London, UK				YES
Barings Securities, LLC	Boston, MA				YES
HarbourVeiw Asset Management Corporation	New York, NY				YES
MML Distributors, LLC	Enfield, CT				YES
MML Investment Advisers, LLC	Enfield, CT				YES
MML Investors Services, LLC	Springfield, MA				YES
MML Strategic Distributors, LLC					
MMLISI Financial Alliances, LLC	Springfield, MA				YES
OC Private Capital, LLC	New York, NY				YES
OFI Advisors, Inc.	New York, NY				YES
	N V I NN	1	l		1/50

That bout very Asset management outporation	NOW TOTA, INT		ILO
MML Distributors, LLC	Enfield, CT		YES
MML Investment Advisers, LLC	Enfield, CT		YES
MML Investors Services, LLC	Springfield, MA		YES
MML Strategic Distributors, LLC	Springfield, MA		YES
MMLISI Financial Alliances, LLC	Springfield, MA		
OC Private Capital, LLC	New York, NY		YES
OFI Advisors, Inc.	New York, NY		YES
OFI Global Asset Management, Inc	New York, NY		YES
OFI Global Institutional, Inc.	New York, NY		YES
OFI Private Investments, Inc.	New York, NY		YES
OFI SteelPath, Inc.	Dallas, TX		YES
OppenheimerFunds Distributor, Inc.	New York, NY		YES
Oppenheimer Funds, Inc.	New York, NY		YES
The MassMutual Trust Company, FSB	Enfield, CT	YES	

GENERAL INTERROGATORIES

9.1	Are the senior officers (principal executive officer, principal financial officer, principal accounting officer or controller, or similar functions) of the reporting entity subject to a code of ethics, which includes the following standards?	nal and professional	Yes [X] No []	
9.11	(e) Accountability for adherence to the code. 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]	
9.21	il the response to 5.2 is res, provide information related to afficient (s).				
9.3 9.31	Have any provisions of the code of ethics been waived for any of the specified officers? If the response to 9.3 is Yes, provide the nature of any waiver(s).		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				
11.1 11.2	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.)		Yes [X] No []	
12.	Amount of real estate and mortgages held in other invested assets in Schedule BA:			63,952,223	,
13.	Amount of real estate and mortgages held in short-term investments:				_
14.1	Does the reporting entity have any investments in parent, subsidiaries and affiliates?		Yes [X] No []	
14.2	If yes, please complete the following:				
		1 Prior Year-End Book/Adjusted Carrying Value	Bo Ca	2 rrent Quarter ok/Adjusted rrying Value	
	Bonds\$			229,550,04	
14.22	Preferred Stock \$				
	Common Stock \$			326,937,00	
	Short-Term Investments\$ Mortgage Loans on Real Estate\$				
14.25	All Other\$	85 978 324		71,187,64	
14.27	Total Investment in Parent, Subsidiaries and Affiliates (Subtotal Lines 14.21 to 14.26)\$	650 870 094		627 . 674 . 69	
14.28	Total Investment in Parent included in Lines 14.21 to 14.26 above				
15.1 15.2	Has the reporting entity entered into any hedging transactions reported on Schedule DB? If yes, has a comprehensive description of the hedging program been made available to the domiciliary state? If no, attach a description with this statement.] No []] No []	

GENERAL INTERROGATORIES

16.		r value of reinvested collater	al assets reported o	on Schedule DL, I	Parts 1 and 2			
	16.2 Total bo	ok adjusted/carrying value of vable for securities lending re	f reinvested collater eported on the liabil	al assets reported tity page.	d on Schedule	DL, Parts 1 and 2	\$ \$	
17. 17.1	Excluding items in Schedule E offices, vaults or safety depo custodial agreement with a q	E - Part 3 - Special Deposits, sit boxes, were all stocks, bo ualified bank or trust compa ions, Custodial or Safekeepi	real estate, mortga ands and other secu any in accordance w ng Agreements of th	ge loans and inversities, owned throught with Section 1, III - he NAIC Financia	estments held p bughout the cur General Exam Il Condition Exa	ohysically in the reporting entit rent year held pursuant to a ination Considerations, F. uminers Handbook?	y's	[X] No []
	Citibank, N.A	1 C						
17.2	For all agreements that do not location and a complete expl		ts of the NAIC Fina	ncial Condition E	xaminers Hand	book, provide the name,		
	1 Name(s)		2 tion(s)		Complet	3 e Explanation(s)		
17.3 17.4	Have there been any changes If yes, give full information rela		the custodian(s) id	dentified in 17.1 d	uring the currer	nt quarter?	. Yes [] No [X]
	1 Old Custodian		2 ustodian	3 Date of Cha	nge	4 Reason		
17.5	Investment management – Ide make investment decisions of such. ["that have access t	on behalf of the reporting ent	ity. For assets that a	are managed inte		dividuals that have the author yees of the reporting entity, no		
		1 me of Firm or Individual		2 Affiliation				
	Barings LLCIFM Investors Pty Ltd			U				
	17.5097 For those firms/indivi	duals listed in the table for C	uestion 17.5, do an	y firms/individual		ith the reporting entity (i.e.	Yes	[] No [X]
	17.5098 For firms/individuals total assets under ma	unaffiliated with the reporting anagement aggregate to mo	g entity (i.e. designate re than 50% of the r	ted with a "U") lis eporting entity's a	ted in the table	for Question 17.5, does the	Yes	[] No [X]
17.6	For those firms or individuals table below.	listed in the table for 17.5 wit	h an affiliation code	of "A" (affiliated)	or "U" (unaffilia	ated), provide the information	for the	
	1 Central Registration	2			3	4		5 Investment Management Agreement
	Depository Number	Name of Firm or Barings LLC		Legal Entity I	dentifier (LEI)	Registered With		(IMA) Filed DS
	162754	IFM Investors Pty Ltd		-		SEC		NO
18.1 18.2	Have all the filing requirement If no, list exceptions: At 09/30/2018, 27 issues for 1 issues currently lack one or r totaled \$26,212,223 or 0.6%	9 issuers did not meet the fil nore of the following: Valid o	ing requirements of	the Purposes an	d Procedures N	Manual. The majority of these		[] No [X]
19.	b. Issuer or obligor is curr	rities, the reporting entity is c ary to permit a full credit ana ent on all contracted interest all expectation of ultimate pa	llysis of the security and principal paym	does not exist. nents.	J	ated 5*GI security:		
	Has the reporting entity self-de						Yes	[X] No []

GENERAL INTERROGATORIES

PART 2 - LIFE & HEALTH

۱.	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	\$115,240,581
	1.13 Commercial Mortgages	\$799,951,396
	1.14 Total Mortgages in Good Standing	\$915,191,977
	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	<u>\$</u>
.5	Total Mortgage Loans (Lines 1.14 + 1.21 + 1.34 + 1.44) (Page 2, Column 3, Lines 3.1 + 3.2)	\$915,191,977
.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	
.1	Do you act as a custodian for health savings accounts?	
.2	If yes, please provide the amount of custodial funds held as of the reporting date	
.3	Do you act as an administrator for health savings accounts?	
.3	If yes, please provide the balance of the funds administered as of the reporting date	
	Is the reporting entity licensed or chartered, registered, qualified, eligible or writing business in at least two states?	
٠.		163 [] 180 []
.1	If no, does the reporting entity assume reinsurance business that covers risks residing in at least one state other than the state of	V [] N- []

SCHEDULE S - CEDED REINSURANCE

Showing All New Reinsurance Treaties - Current Year to Date

1	2	3	4	5	6	7	8	9
								Effective
							Certified	Date of
NAIC Company					Type of		Reinsurer	Certified
Company	ID	Effective		Domiciliary	Reinsurance		Rating	Reinsurer
Code	Number	Date	Name of Reinsurer	Jurisdiction	Ceded	Type of Reinsurer	(1 through 6)	Rating
82627	06-0839705	07/21/2018	Swiss Re Life & Health America (SRR2)	MO	CO/I	Author i zed.		
82627	06-0839705	07/21/2018	Swiss Re Life & Health America (SRR3)	MO	CO/I	Author i zed		

SCHEDULE T - PREMIUMS AND ANNUITY CONSIDERATIONS

Current Year To Date - Allocated by States and Territories

Direct Business Only

						Direct Bus			_
			1	Lite Co	ontracts 3	4 Accident and	5	6	7
				2	3	Health Insurance			
				1		Premiums,			
			Active	l, .		Including Policy, Membership	0.11	Total	
	Ctatas Eta		Status	Life Insurance	Annuity	Membership and Other Fees	Other	Columns	Deposit-Type
- 1	States, Etc.		(a)	Premiums	Considerations	and Other Fees	Considerations	2 Through 5	Contracts
1.		AL	<u>-</u>	1,840,727	8,327,345			10, 168, 072	
2.	Alaska		L	47,843	2,055,878			2, 103, 721	
3.	Arizona		L	2,309,323	11,505,181			13,814,504	
4.	Arkansas		L	384,770	6,401,438			6,786,208	
5.	California	- CA	L	18,496,623	33,970,958			52,467,581	
6.	Colorado	- CO	L	1,523,035	7,329,685			8,852,720	
7.	Connecticut	- CT	L	5,534,210	42,765,562			48,299,772	
8.	Delaware		L	261,722	7,383,010			7,644,732	
9.	District of Columbia		I	1,348,738	428,956			1.777.694	
10.	Florida	- 00		15,957,915	81,370,053			97,327,968	
			<u>L</u>						
11.	Georgia		L	3,542,806	23,213,283			26,756,089	
12.	Hawaii		L	1,598,391	4,869,639			6,468,030	
13.	Idaho	ID	LL	296,608	2,553,415			2,850,023	
14.	Illinois	IL	L	4,869,827	41,489,410			46,359,237	
15.	Indiana	. IN	ı	1,970,235	49,778,255			51,748,490	
16.	lowa		I I	1,040,228	6,873,637			7,913,865	
17.	Kansas			945,320	1,911,241			2,856,561	
					1,911,241				
18.	Kentucky		<u>-</u>	935,600	8,256,704			9, 192, 304	
	Louisiana		ļL	1, 178, 424	9,795,910			10,974,334	
20.	Maine	- ME	L	363,243	3,683,948			4,047,191	
21.	Maryland	- MD	L	5, 176, 638	21,907,614			27,084,252	
22.	Massachusetts		L I	4,244,428	45,676,115	L	L	49,920,543	
	Michigan		ı	3,508,129	34,858,080			38.366.209	
24.	Minnesota		l	3,026,291	31,749,067	<u> </u>		34,775,358	
			<u>L</u>			<u> </u>			
25.	Mississippi		<u>-</u>	1,973,829	3,442,341			5,416,170	
26.	Missouri		ļL.	1,988,192	23,438,578	ļ		25,426,770	
27.	Montana		L	214,387	918,393			1, 132,780	
28.	Nebraska	- NE	L	2,371,048	9,988,032			12,359,080	
29.	Nevada		Ĺ	940,625	12, 181, 753			13, 122, 378	
30.	New Hampshire		L	911,635	7,907,100			8,818,735	
31.	New Jersey		b	8,010,771				76,862,409	
32.	New Mexico		L	337,353	1,010,268			1,347,621	
33.	New York		N	4,835,423	83,331			4,918,754	
34.	North Carolina	NC	LL	7,511,166	20,322,027			27,833,193	
35.	North Dakota	ND	LL	21,353	9,861,280			9,882,633	
36.	Ohio		Ī	4.064.818	25,605,820			29,670,638	
37.	Oklahoma			1,528,650	5,642,982			7, 171, 632	
38.									
	Oregon		<u>-</u>	739,984	1,705,118			2,445,102	
39.	Pennsylvania		L	7, 197, 171	73,044,971			80,242,142	
40.	Rhode Island		L	671,878	12,033,097			12,704,975	
41.	South Carolina	- SC	LL	2,816,858	15,444,771			18,261,629	
42.	South Dakota		Ī	73,019	1,441,163			1,514,182	
43.	Tennessee		<u>F</u>	3,483,194	39.104.797			42,587,991	
44.									
	Texas		ļL	9, 152, 013	45,520,698			54,672,711	
	Utah		L	1,562,281	2,923,320			4,485,601	
46.	Vermont	- VT	L	360,480	7,692,254			8,052,734	
47.	Virginia	VA	L	5,480,577	28,019,204			33,499,781	
48.	Washington	\Λ/ Δ	L	1,951,750	10,563,163			12,514,913	
49.	West Virginia		Ĺ	474,956	2, 183, 428			2,658,384	
50.	Wisconsin							20.581.135	
			<u>-</u>	1,245,791	19,335,344			, , , , , , , , , , , , , , , , , , , ,	
51.	Wyoming		L	123,349	339,730			463,079	
52.	American Samoa	- AS	N						
53.	Guam	- GU	N	180				180	
54.	Puerto Rico	- PR	L	3,087,493	3,338,743			6,426,236	
	U.S. Virgin Islands		N	2,321	, 200, . 10			2,321	
	Northern Mariana Islands		N					,	
				44 044				14 014	
57.	Canada		N	14,814				14,814	
58.	Aggregate Other Aliens		XXX	98 , 167	50,000			148 , 167	
59.	Subtotal		XXX	153,646,600	940 , 147 , 728			1,093,794,328	
90.	Reporting entity contributions for employee b			1	1			1	
	plans		XXX			ļ		 	
91.	Dividends or refunds applied to purchase pa			1	1			1	
	additions and annuities		XXX		 			 	
92.	Dividends or refunds applied to shorten endo			ĺ	1			1	
	or premium paying period		XXX						
93.	Premium or annuity considerations waived u			4 000 044	1			4 000 041	
	disability or other contract provisions		XXX	1,033,214				1,033,214	
94.	Aggregate or other amounts not allocable by		XXX						
95.	Totals (Direct Business)		XXX	154,679,814	940 , 147 , 728			1,094,827,542	
96.	Plus Reinsurance Assumed		XXX						
97	Totals (All Business)		XXX	154,679,814	940 , 147 , 728			1,094,827,542	
98.	Less Reinsurance Ceded		XXX	116,930,058	727,708,993			844,639,051	
99.	Totals (All Business) less Reinsurance Cede		XXX	37,749,756	212,438,735			250, 188, 491	
55.		J	^^^	JI, 148, 100	د ۱۷, ۹۵۵, ۱۵۵			۵۵۵, ۱۵۵, 431	
F05-	DETAILS OF WRITE-INS								
	ZZZ Other Alien		XXX	98 , 167	50,000	 		148 , 167	ļ
58002.			XXX		 	ļ	ļ 		
58003.			XXX						
	Summary of remaining write-ins for Line 58 f	rom							
	overflow page		XXX						
58999	Totals (Lines 58001 through 58003 plus								
22000.	58998)(Line 58 above)		xxx	98,167	50,000			148, 167	
9401.	38990)(Line 36 above)		XXX	55, 167	,			1.15, 107	
				t		t	 	t	
9402.			XXX	 	 	 		 	
			XXX	 	 	 	 	 	
9403.	Commence of a section coults in a few Line OA f	rom		1					
9403. 9498.	Summary of remaining write-ins for Line 94 f					i	i .	i .	
9498.	overflow page		XXX						
9498.		Line	XXX						

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

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, LLC	06-1041383		Delaware
CML Mezzanine Investor L, LLC	06-1041383		Delaware
CML Mezzanine Investor III, LLC	06-1041383		Delaware
CML Special Situations Investor LLC	None		Delaware
MML Mezzanine Investor L, LLC	04-1590850		Delaware
Berkshire Way LLC	04-1590850		Delaware
MML Special Situations Investor LLC	None		Delaware
Timberland Forest Holding LLC	47-5322979		Delaware
Lyme Adirondack Forest Company, LLC	None		Delaware
Lyme Adirondack Timber Sales, Inc.	20-5305426		New York
Lyme Adirondack Timberlands I, LLC	None		Delaware
Lyme Adirondack Timberlands II, LLC	None		Delaware
WP-SC, LLC*	26-4441097		Delaware
MSP-SC, LLC	04-1590850		Delaware
Country Club Office Plaza LLC*	27-1435692		Delaware
Insurance Road LLC	04-1590850		Delaware
MassMutual Trad Private Equity LLC	04-1590850		Delaware
MassMutual Intellectual Property LLC	04-1590850		Delaware
Trad Investments I LLC	None		Delaware
EM Opportunities LLC	None		Delaware
Jefferies Finance LLC	27-0105644		Delaware
Apex Credit Partners LLC	None		Delaware
JFIN GP Adviser LLC	None		Delaware
JFIN Revolver Fund, L.P.	None		Delaware
JFIN Fund III LLC	None		Delaware
JFIN Asset Management LLC	None		Delaware
JFAM GP LLC	None		Delaware
JFAM GP LP	None		Delaware
JFAM Loan Fund, LP	None		Delaware
JFIN Revolver Holdings LLC	None		Delaware
JFIN Revolver Holdings II LLC	None		Delaware
JFIN Co-Issuer Corporation	None		Delaware
JFIN Europe GP, S.a.r.l.	None		Luxembourg
Jefferies Finance Europe, SCSp	None		Luxembourg
Jefferies Finance Business Credit LLC	None		Delaware
JFIN Business Credit Fund I LLC	None		Delaware

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

	Federal Tax ID	NAIC Co Code	State of Domicile
JFIN High Yield Investments LLC	None		Delaware
JFIN LC Fund LLC	None		Delaware
JFIN Revolver CLO Holdings LLC	None		Delaware
JFIN CLO 2007 Ltd.	None		Cayman Islands
JFIN CLO 2012 Ltd.	None		Cayman Islands
JFIN CLO 2013 Ltd.	None		Cayman Islands
JFIN CLO 2014 Ltd.	None		Cayman Islands
JFIN CLO 2014-II Ltd.	None		Cayman Islands
JFIN MM CLO 2014 Ltd.*	None		Cayman Islands
JFIN CLO 2015 Ltd.*	None		Cayman Islands
Apex Credit CLO 2015-II Ltd.*	None		Cayman Islands
JFIN Revolver CLO 2014 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2015 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017 Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-II Ltd.	None		Cayman Islands
JFIN Revolver CLO 2017-III Ltd.	None		Cayman Islands
JFIN Revolver CLO 2018 Ltd.	None		Cayman Islands
Apex Credit CLO 2016 Ltd.	None		Cayman Islands
Apex Credit CLO 2017 Ltd.	None		Cayman Islands
Apex Credit CLO 2017-II Ltd.	None		Cayman Islands
Apex Credit CLO 2018-II Ltd.	None		Cayman Islands
MassMutual Mortgage Lending LLC	None		Delaware
MassMutual Retirement Services, LLC	04-1590850		Delaware
MM Copper Hill Road LLC	04-1590850		Delaware
MML Distributors LLC*	04-3356880		Massachusetts
MML Investment Advisers, LLC	None		Delaware
MML Mezzanine Investor, LLC	04-1590850		Delaware
MML Strategic Distributors, LLC	46-3238013		Delaware
The MassMutual Trust Company, FSB	06-1563535		Connecticut
MassMutual Asset Finance LLC*	26-0073611		Delaware
MMAF Equipment Finance LLC 2009-A	27-1379258		Delaware
MMAF Equipment Finance LLC 2011-A	45-2589019 04-1590850		Delaware
MML Private Placement Investment Company I, LLC			Delaware Delaware
MML Private Equity Fund Investor LLC	04-1590850 04-1590850		Delaware Delaware
MM Private Equity Intercontinental LLC Pioneers Gate LLC	45-2738137		Delaware Delaware
	43-2738137 04-2854319		Delaware Delaware
MassMutual Holding LLC Fern Street LLC	04-2854319 37-1732913		Delaware Delaware
First Mercantile Trust Company	62-0951563		Tennessee
Haven Life Insurance Agency, LLC	46-2252944		Delaware
MassMutual Assignment Company	06-1597528		North Carolina
wassiviutual Assignment Company	00-139/326		North Caronna

^{*}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
MassMutual Capital Partners LLC	04-1590850		Delaware
MassMutual Ventures Holding LLC	None		Delaware
MassMutual Ventures Management LLC	None		Delaware
MassMutual Ventures SEA Management Private Limited	None		Singapore
MassMutual Ventures Southeast Asia I LLC	None		Delaware
MassMutual Ventures UK LLC	None		Delaware
MassMutual Ventures US I LLC	47-1296410		Delaware
MassMutual Ventures US II LLC	None		Delaware
MM Rothesay Holdco US LLC	04-1590850		Delaware
MML Investors Services, LLC	04-1590850		Massachusetts
MML Insurance Agency, LLC	04-1590850		Massachusetts
MMLISI Financial Alliances, LLC	41-2011634		Delaware
LifeScore Labs, LLC	47-1466022		Massachusetts
MM Asset Management Holding LLC	45-4000072		Delaware
Barings LLC	51-0504477		Delaware
Baring Asset Management (Asia) Holdings Limited	98-0524271		Hong Kong, Special Administrative Region of China
Baring International Fund Managers (Bermuda) Limited	98-0457465		Bermuda
Baring Asset Management (Asia) Limited	98-0457463		Hong Kong, Special Administrative Region of China
Baring Asset Management Korea Limited	None		Korea
Baring SICE (Taiwan) Limited	98-0457707		Taiwan ROC
Barings Japan Limited	98-0236449		Japan
Baring Asset Management (Australia) Pty Limited	98-0457456		Australia
Barings Investment Advisors (Hong Kong) Limited	None		Hong Kong, Special Administrative Region of China
Barings Australia Holding Company Pty Ltd	None		Australia
Barings Australia Pty Ltd	98-0457456		Australia
Barings Finance LLC	80-0875475		Delaware
BCF Europe Funding Limited	None		Ireland
BCF Senior Funding I LLC	None		Delaware
Barings Securities LLC	04-3238351		Delaware
Barings Guernsey Limited	98-0437588		Guernsey
Barings Europe Limited	None		United Kingdom
Barings Real Estate UK Holdings Limited	None		Delaware
BREAE AIFM LLP	None		United Kingdom
Barings Real Estate Advisers (Continental Europe) Limited	98-0654401		United Kingdom
Barings Real Estate Advisers Europe LLP	98-0654388		United Kingdom
Barings Real Estate Advisers Europe Finance LLP	98-0654412		United Kingdom
Barings Real Estate Advisers GmbH	98-1194368		Germany
Baring Asset Management Limited	98-0241935		United Kingdom
Barings Global Advisors Limited	98-1012393		United Kingdom
BCGSS 2 GP LLP	None		United Kingdom
Barings European Direct Lending 1 GP LLP	None		United Kingdom

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

	Federal Tax ID	NAIC Co Code	State of Domicile
Baring International Investment Limited	98-0457328		United Kingdom
Baring International Investment Management Holdings	98-0457587		United Kingdom
Baring Asset Management UK Holdings Limited	98-0457576		United Kingdom
Baring Asset Management GmbH	98-0465031		Germany
Baring International Fund Managers (Ireland) Limited	98-0524272		Ireland
Baring Asset Management Switzerland Sarl	None		Switzerland
Baring France SAS	98-0497550		France
Baring Fund Managers Limited	98-0457586		United Kingdom
Baring Pension Trustees Limited	98-0457574		United Kingdom
Baring Investment Services Limited	98-0457578		United Kingdom
Barings Investment Fund (LUX) GP S.à. r.l.	None		Luxembourg
Barings GPC GP S.à. r.l.	None		Luxembourg
Almack Mezzanine GP III Limited	None		United Kingdom
Almack Holding Partnership GP Limited	None		United Kingdom
Almack Mezzanine Fund Limited	None		United Kingdom
Almack Mezzanine Fund II Limited	None		United Kingdom
Barings (U.K.) Limited	98-0432153		United Kingdom
Barings Multifamily Capital Holdings LLC	None		Delaware
Barings Multifamily Capital LLC	None		Michigan
Barings Multifamily Capital Corporation	None		Delaware
Barings Real Estate Advisers Inc.	04-3238351		California
MassMutual Baring Holding LLC	04-1590850		Delaware
MassMutual Holdings (Bermuda) Limited	None		Bermuda
Agspring Holdco, LLC	None		Delaware
Chassis Acquisition Holding LLC	81-2244465		Delaware
CRA Aircraft Holding LLC*	81-4258759		Delaware Delaware
Aland Royalty Holdings LP	None 46-2344300		Delaware Delaware
Intermodal Holding II LLC Milastone Apprinting II LLC	47-3055009		Delaware Delaware
Milestone Acquisition Holding, LLC. Red Lake Ventures, LLC	46-5460309		Delaware Delaware
Remington L & W Holdings LLC*	81-4065378		Connecticut
Solar Acquisition Holding, LLC	None		Delaware
Tamiami Citrus, LLC	None		Delaware
Teaktree Acquisition, LLC	None		Delaware
U.S. Pharmaceuticals Holdings I, LLC	46-0687392		Delaware
U.S. Pharmaceuticals Holdings II, LLC	47-5436800		Delaware
Validus Pharmaceuticals LLC	None		Delaware
VGS Acquisition Holding, LLC	None		Delaware
Aland Royalty GP, LLC	None		Delaware
BAI GP, LLC	None		Delaware
2.1. 01, 220	1.5110		2 214 11410

^{*}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
Barings Alternative Investments SLP, LLC	None		Delaware
Baring Asset-Based Income Fund (US) GP, LLC	None		Delaware
Barings Global Equity Fund	46-1197222		Delaware
Barings Global Investment Funds (U.S.) Management LLC	04-1590850		Delaware
Babson Global Loan Feeder Management, LLC	None		Delaware
Baring North America LLC	98-0241935		Massachusetts
Barings ABIF SLP, LLC	None		Delaware
Barings CLO Investment Partners GP, LLC	None		Delaware
Barings Core Property Fund GP LLC	None		Delaware
Barings Direct Lending GP Ltd.	None		Cayman Islands
Barings Global Energy Infrastructure Advisors, LLC	None		Delaware
Barings Global Real Assets Fund GP, LLC	None		Delaware
Barings Multi Asset Income Fund	None		Hong Kong
Barings North American Private Loan Fund Management, LLC	None		Delaware
Barings/LAZ Parking Fund GP LLC	None		Delaware
Benton Street Advisors, Inc.	98-0536233		Cayman Islands
BREBF I GP LLC	None		Delaware
BRECS VII GP LLC	None		Delaware
CCM Fund I REIT Manager LLC	None		Delaware
CCM Venture I GP LLC	None		Delaware
CCM Venture I REIT Manager LLC	None		Delaware
CEMF I GP LLC	None		Delaware
CHY Venture GP LLC	None		Delaware
CREF X GP LLC	None		Delaware
CREF VIII GP, LLC	None		Delaware
Great Lakes III GP, LLC	04-1590850		Delaware
Lake Jackson LLC	None		Delaware
Loan Strategies Management LLC	04-1590850		Delaware
Mezzco LLC	04-1590850		Delaware
Mezzco II LLC	02-0767001		Delaware
Mezzco III LLC	41-2280126		Delaware
Mezzco IV LLC	80-0920285		Delaware
Mezzco Australia LLC	90-0666326		Delaware
Mezzco Australia II LLC	None		Delaware
RECSA-NY GP LLC	None		Delaware
Somerset Special Opportunities Management LLC	04-1590850		Delaware
Oppenheimer Acquisition Corp.	84-1149206		Delaware
OppenheimerFunds, Inc.	13-2527171		Colorado
OppenheimerFunds Distributor, Inc.	13-2953455		New York
Oppenheimer Real Asset Management, Inc.	84-1106295		Delaware
OFI Global Institutional, Inc.	13-4160541		New York

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

	Federal Tax ID	NAIC Co Code	State of Domicile
HarbourView Asset Management Corporation	22-2697140		New York
OC Private Capital, LLC	None		Delaware
OFI Global Trust Company	13-3459790		New York
OFI International. Ltd.	None		United Kingdom
SNW Asset Management Corporation	None		Delaware
Seattle Northwest Asset Management LLC	None		Washington
Trinity Investment Management Corporation	25-1951632		Pennsylvania
OFI SteelPath, Inc.	84-1128397		Delaware
Shareholder Services, Inc.	84-1066811		Colorado
OFI Advisors, LLC	None		Delaware
Index Management Solutions, LLC	None		Pennsylvania
OFI Global Asset Management, Inc.	84-0765063		Delaware
OFI Private Investments Inc.	91-2036414		New York
Tremont Group Holdings, LLC	62-1210532		New York
Tremont Partners, LLC	06-1121864		Connecticut
Tremont GP, LLC	20-8215352		Delaware
Settlement Agent, LLC	90-0874510		Delaware
Tremont (Bermuda) Limited	None		Bermuda
MassMutual International LLC	04-3313782		Delaware
MassMutual Asia Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Asia Investors Ltd.	None		Hong Kong, Special Administrative Region of China
MassMutual Guardian Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Insurance Consultants Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Services Limited	None		Hong Kong, Special Administrative Region of China
MassMutual Trustees Limited	None		Hong Kong, Special Administrative Region of China
Protective Capital (International) Limited	98-0610331		Hong Kong, Special Administrative Region of China
MassMutual Life Insurance Company	None		Japan
MassMutual Internacional (Chile) SpA	98-1033127		Chile
MML Management Corporation	04-2443240		Massachusetts
MassMutual International Holding MSC, Inc.	04-3548444		Massachusetts
MassMutual Holding MSC, Inc.	04-3341767		Massachusetts
MML Mezzanine Investor II, LLC	04-1590850		Delaware
MML Mezzanine Investor III, LLC	04-1590850		Delaware
MassMutual External Benefits Group LLC	27-3576835		Delaware
Cornerstone Global REIT Corporation	20-8730751		Delaware
Other Affiliates & Funds:			
100 w. 3 rd Street LLC	04-1590850		Delaware
300 South Tryon Hotel LLC	82-2432216		Delaware
300 South Tryon LLC	04-1590850		Delaware
54 West Capital LLC	20-3887968		Delaware
Almack Mezzanine Fund I LP*	None		United Kingdom

^{*}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
Almack Mezzanine Fund II Unleveraged LP	None		United Kingdom
Almack Mezzanine Fund III LP*	None		United Kingdom
Barings Asset-Based Income Fund (US) LP	36-4868350		Delaware
Barings Emerging Markets Corporate Bond Fund	None		Ireland
Barings Global Special Situations Credit Fund 1	None		Ireland
Babson Capital Global Special Situation Credit Fund 2*	98-1206017		Delaware
Babson Capital Loan Strategies Fund, L.P.*	37-1506417		Delaware
Barings US High Yield Bond Fund*	None		Ireland
Babson CLO Ltd. 2012-II	None		Cayman Islands
Babson CLO Ltd. 2013-I	None		Cayman Islands
Babson CLO Ltd. 2014-I	None		Cayman Islands
Babson CLO Ltd. 2014-II	None		Cayman Islands
Babson CLO Ltd. 2015-I	None		Cayman Islands
Babson CLO Ltd. 2015-II	None		Cayman Islands
Babson CLO Ltd. 2016-I	None		Cayman Islands
Babson CLO Ltd. 2016-II	None		Cayman Islands
Barings CLO Ltd. 2017-I	None		Cayman Islands
Babson Euro CLO 2014-I BV	None		Netherlands
Babson Euro CLO 2014-II BV	None		Netherlands
Babson Euro CLO 2015-I BV	None		Netherlands
Babson Euro CLO 2016-I BV	None		Netherlands
Barings Euro Equity Income Fund	None		Hong Kong
Baring Focused EAFE Equity Fund	11-3789446		Delaware
Barings Global Energy Infrastructure Fund I LP	98-1332384		Cayman Islands
Barings Global Private Loan Fund	None		Luxembourg
Barings Global Real Assets Fund LP	82-3867745		Delaware
Barings Global Special Situations Credit Fund 3	None		Ireland
Barings Middle Market CLO 2017-I Ltd & LLC	None		Cayman Islands
Barings North American Private Loan Fund LP	38-4010344		Delaware
Barings RE Credit Strategies VII LP	98-1332384		Delaware
Baring International Small Cap Equity Fund	26-4142796		Delaware
Barings CLO Investment Partners LP	81-0841854		Delaware
Barings Real Estate European Value Add I SCSp*	None		United Kingdom
Braemar Energy Ventures I, L.P. *	None		Delaware
Barings European Core Property Fund SCSp	None		Luxembourg
Benchmark 2018-B2 Mortgage Trust	38-4059932		New York
Cornerstone Core Mortgage Venture I LP	27-1701622		Delaware
Cornerstone Enhanced Mortgage Fund I LP	45-3751572		Delaware
Cornerstone Global Real Estate LP*	20-8730751		Delaware
Cornerstone High Yield Venture LP	36-4770946		Delaware
Barings/LAZ Parking Fund LP	46-5437441		Delaware

^{*}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
	Barings Core Property Fund LP	20-5578089	Delaware
	Cornerstone Real Estate Fund VIII LP	27-0547156	Delaware
	Cornerstone Real Estate Fund X LP	46-5432619	Delaware
	Cornerstone Permanent Mortgage Fund III LLC	35-2531693	Massachusetts
	Duchess VII CLO B.V.	None	United Kingdom
	E-Wise Land Venture LLC	20-3887968	Delaware
	Gateway Mezzanine Partners I LP	80-0691253	Delaware
	Gateway Mezzanine Partners II LP*	90-0991195	Delaware
	Gillem GA Industrial LLC	04-1590850	Delaware
	Great Lakes III, L.P.	37-1708623	Delaware
	JPMCC Commercial Mortgage Securities Trust 2017-JP7	38-4041011; 38-4041012	New York
	JPMDB Commercial Mortgage Securities Trust 2017-C5	38-4032059	New York
	Kazwell Realty Partners LLC	20-3887968	Delaware
	KKR-MM Vector LP	82-1512591	Delaware
	Marco Hotel LLC	46-4255307	Delaware
	MM Debt Participations LLC	81-3000420	Delaware
	Oakley Grove Development LLC	20-3887968	Delaware
	Old Pasco Properties LLC	20-3887968	Delaware
	RB Apartments LLC	82-4411267	Delaware
	Reston Arboretum LLC	75-2901061	Delaware
	Riva Portland LLC	30-0713071	Delaware
	Rockall CLO B.V.	None	United Kingdom
	Rockville Town Center LLC	54-2055778	Virginia
	Somerset Special Opportunities Fund L.P.*	20-8856877	Delaware
	South Pasco Properties LLC	20-3887968	Delaware
	Ten Fan Pier Boulevard LLC	35-2553915	Delaware
	Tower Square Capital Partners II, L.P.*	30-0336246	Delaware
	Tower Square Capital Partners II-A, L.P.	32-0160190	Delaware
	Tower Square Capital Partners III, L.P.	41-2280127	Delaware
	Tower Square Capital Partners IIIA, L.P.	41-2280129	Delaware
	Tower Square Capital Partners IV-A, L.P.	80-0920367	Delaware
	West 46 th Street Hotel LLC	05-1590850	Delaware
Barings A	ffiliates & Funds:		
	Barings Emerging Markets Debt Blended Total Return Fund	None	Ireland
	Barings Emerging Markets Debt Short Duration Fund	None	Ireland
	Barings Emerging Markets Sovereign Debt Fund	None	Ireland
	Babson Capital Loan Strategies Master Fund LP	None	Cayman Islands
	Barings Emerging Markets Debt Blended Total Return Fund	47-3758432	Massachusetts
	Barings Emerging Markets Local Currency Debt Fund	47-3774453	Massachusetts
	Barings Global High Yield Fund	47-3790192	Massachusetts
	Baring Greater China Equity Fund	None	Hong Kong

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PART 1 – ORGANIZATIONAL CHART

	Federal Tax ID	NAIC Co Code	State of Domicile
Barings Total Return Bond Fund	47-3734770		Massachusetts
Barings U.S. High Yield Fund	47-3801860		Massachusetts
Great Lakes II LLC*	71-1018134		Delaware
Somerset Special Opportunities Master Fund LP	None		Cayman Islands
Barings Real Estate Affiliates & Funds:	110110		
Wood Creek Venture Fund LLC	04-1590850		Delaware
50 Liberty LLC*	36-4823011		Delaware
One Harbor Shore LLC*	80-0948028		Delaware
Budapester Strasse LLC	81-4382111		Delaware
Calgary Railway Holding LLC*	82-2285211		Delaware
Cornbrook PRS Holdings LLC	82-3307907		Delaware
Cornerstone California Mortgage Fund I LLC	95-4207717		California
Cornerstone California Mortgage Fund II LLC	95-4207717		California
Cornerstone California Mortgage Fund III LLC	95-4207717		California
Cornerstone Fort Pierce Development LLC*	56-2630592		Delaware
Cornerstone Permanent Mortgage Fund	45-2632610		Massachusetts
Cornerstone Permanent Mortgage Fund II	61-1750537		Massachusetts
Cornerstone Permanent Mortgage Fund III	35-2531693		Massachusetts
Cornerstone Permanent Mortgage Fund IV	61-1793735		Massachusetts
CREA Madison Member LLC	81-0890084		Delaware
CCB Montford Park LLC*	82-1563809		Delaware
Danville Riverwalk Venture, LLC	82-2783393		Delaware
Fan Pier Development LLC*	20-3347091		Delaware
Farringdon London Holdings LLC*	46-3880526		Delaware
Johnston Groves LLC	20-4819358		Delaware
Landmark Manchester Holdings LLC	81-5360103		Delaware
NoHo West Venture LLC	83-0881588		Delaware
PACO France Logistics LLC	04-1590850		Delaware
PACO France Logistics 3 LLC	04-1590850		Delaware
Portland 400 Sixth Manager LLC	82-3393166		Delaware
Salomon Brothers Commercial Mortgage Trust 2001-MM	None		Delaware
Sawgrass Village Shopping Center LLC*	27-2977720		Delaware
Spain Avalon Holding LLC	04-1590850		Delaware
Three PW Office Holding LLC	81-5273574		Delaware
Twenty Two Liberty LLC*	35-2484550		Massachusetts
UK LIW Manager LLC	45-4606547		Delaware
UK LIW Member LLC	45-4606547		Delaware
Unna, Dortmund Holding LLC	82-3250684		Delaware
Via Ceresio Milan LLC	82-3281588		Delaware
Washington Gateway Apartments Venture LLC*	45-5401109		Delaware
Waterford Development Associates	20-2970495		Delaware

^{*}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
	Waterloo London Holdings LLC	47-1993493		Delaware
	WeHo Domain LLC*	46-3122029		Delaware
	Willowwood Lakeside Master LLC	81-1552222		Delaware
	Ygnatio Valley Funding	20-5481477		Delaware
MassMi	utual Premier Funds:	200101177		2 cia mare
1124001121	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
MassMi	itual 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 S	eries Investment Funds:			
	MML Series International Equity Fund	46-4257056		Massachusetts
MML S	eries Investment Funds II:			
	MML Series II Asset Momentum Fund	47-3517233		Massachusetts
	MML Series II Dynamic Bond Fund	47-3529636		Massachusetts
	MML Series II Equity Rotation Fund	47-3544629		Massachusetts
	MML Series II Special Situations Fund	47-3559064		Massachusetts
MassMi	itual RetireSMART Funds:			
	MassMutual RetireSMART 2055 Fund	46-3289207		Massachusetts
	MassMutual RetireSMART 2060 Fund	47-5326235		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.

PART 1 – ORGANIZATIONAL CHART

Federal Tax ID NAIC Co Code State of Domicile

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

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

SCHEDULE Y

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						Exchange		Domi-	ship		Management,	ship		Filing	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)	*
							Massachusetts Mutual Life Insurance Company			Massachusetts Mutual Life Insurance					1
0435	Massachusetts Mut Life Ins Co	65935	04-1590850	3848388			(MMLIC)	MA	UDP	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					1
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, LLC	DE	DS	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
0000			06-1041383				CML Mezzanine Investor L, LLC	DE		C.M. Life Insurance Company	Ownership	100.000	MMLIC		l
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		l
0000		1	04-1590850				Mill Mannanina Investor 1 110	DE	NIA	Massachusetts Mutual Life Insurance	Ownership	100.000	MMLIC		
0000		l	U4-109U85U				MML Mezzanine Investor L, LLC	UE	A.INI	Company	OWNERSHIP	100.000	MMLIV		
0000		1	1				MM Coosial Citystians Investor 110	DE	NIA	Massachusetts Mutual Life Insurance	O-manahi-	100.000	MML1C		
0000							MML Special Situations Investor LLC	UE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	100.000	MMLIV		
0000			47-5322979				Timberland Farest Helding LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
0000			47-5322979				Timberland Forest Holding LLCTimberland Forest Holding LLC	DE	NI A	C.M. Life Insurance Company	Owner Ship	0.000	MMLIC		
0000			47-5322979				Timberland Forest Holding LLC	DE	NIA	Wood Creek Capital Management LLC	Management		MMLIC		
0000			41-3022313				Lyme Adirondack Forest Company, LLC	DE	NIA	Timberland Forest Holding LLC	Ownership.	100.000	MMLIC		
0000			20-5305426				Lyme Adirondack Timber Sales, Inc.	NY	NI A	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
0000			20 0000420				Lyme Adirondack Timber Gares, Inc.	DE	NI A	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
0000							Lyme Adirondack Timberlands II, LLC	DE	NI A	Timberland Forest Holding LLC	Ownership	100.000	MMLIC		
							Lymo Adri ordaok Trimbor rando TT, EEO			Massachusetts Mutual Life Insurance	omior on p	100.000	I I I I I I I I I I I I I I I I I I I		
0000			04-1590850				Berkshire Way LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
							Dornount may be a			Massachusetts Mutual Life Insurance	5				
0000			26-4441097				WP-SC, LLC	DE	NI A	Company	Ownership	81.400	MMLIC		.[
0000			26-4441097				WP-SC, LLC	DE	NI A	C.M. Life Insurance Company	Ownership	18.600	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			04-1590850				MSP-SC, LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			27-1435692				Country Club Office Plaza LLC	DE	NI A	Company	Ownership	88.100	MMLIC		
0000			27-1435692				Country Club Office Plaza LLC	DE	NI A	C.M. Life Insurance Company	Ownership	11.900	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000							EM Opportunities LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
1							1			Massachusetts Mutual Life Insurance	L				
0000			04-1590850				Insurance Road LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			04-1590850				MassMutual Trad Private Equity LLC	DE	NI A	Insurance Road LLC	Ownership	100.000	MMLIC		
0000			04-1590850				MassMutual Intellectual Property LLC	DE	NI A	Insurance Road LLC	Ownership	100.000	MMLIC		
0000		l					Trad Investments I LLC	DE	NI A	Insurance Road LLC	Ownership	100.000	MMLIC		
0000		1	27-0105644				Jefferies Finance LLC	DE	NIA		Ownership	50.000	MML1C		1
VVVV			21-0103044				Jerreries Finance LLC	UE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	000.000	MMLIC		
0000							MassMutual Mortgage Lending LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
0000		l					Apex Credit Partners LLC	DE	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		1
0000							JFIN GP Adviser LLC	DE		Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver Fund, L.P.	DE		Jefferies Finance LLC	Ownership.	100.000	MMLIC		
0000							JFIN Fund III LLC	DE		Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000		l					JFIN Asset Management LLC	DE		Jefferies Finance LLC	Ownership	100.000	MMLIC		[
0000							JFAM GP LLC	DE		JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
0000							JFAM GP LP	DE	NI A	JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
0000							JFAM Loan Fund, LP	DE		JFIN Asset Management, LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver Holdings LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver Holdings II LLC	DE		Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Co-Issuer Corporation	DE		Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000			l	l			JFIN Europe GP, S.a.r.I.	LUX	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC	[.1

SCHEDULE Y

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						Name of Constition			Deletion						
						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							Jefferies Finance Europe, SCSp	LUX	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							Jefferies Finance Business Credit LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Business Credit Fund LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN High Yield Investments LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN LC Fund LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver CLO Holdings LLC	DE	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN CLO 2007 Ltd	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN CLO 2012 Ltd	CYM	NI A NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN CLO 2013 Ltd	CYM	NIA	Jefferies Finance LLC	Ownership.	70.000	MMLIC		
0000							JFIN CLO 2014 Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	30.000	MMLIC		
0000							JFIN CLO 2014-11 Ltd.	CYM.	NIA	Jefferies Finance LLC	Ownership.	100.000	MMLIC		
0000							JFIN MM CLO 2014-11 Etd.	CYML	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN CLO 2014 Ltd.	CYM	NIA	Jefferies Finance LLC	Owner ship	44.000	MMLIC		
0000							JFIN CLO 2015 Ltd.	CYML	NIA	Apex Credit Partners LLC	Ownership.	56.000	MMLIC		
0000							Apex Credit CLO 2015-II Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership.	33.000	MMLIC		
0000							Apex Credit CLO 2015-II Ltd.	CYM	NIA	Apex Credit Partners LLC	Ownership	53.000	MMI IC		
0000							JFIN Revolver CLO 2014 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver CLO 2015 Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	_100.000	MMLIC		
.0000							JFIN Revolver CLO 2017 Ltd.	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver CLO 2017-II Ltd.	CYM	NI A	Jefferies Finance LLC	Ownership	_100.000	MMLIC		
0000							JFIN Revolver CLO 2017-III Ltd.	CYM	NIA	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							JFIN Revolver CLO 2018 Ltd.	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							Apex Credit CLO 2016 Ltd.	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							Apex Credit CLO 2017 Ltd.	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							Apex Credit CLO 2017-II Ltd	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
0000							Apex Credit CLO 2018-II Ltd	CYM	NI A	Jefferies Finance LLC	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 04-1590850				MassMutual Retirement Services, LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 04-1590850				MM Copper Hill Road LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 04-3356880				MML Distributors LLC	MA MA	NI A	Company	Ownership	99.000	MMLIC		
0000			04-3356880				MML Distributors LLC	MA	NI A	MassMutual Holding LLC	Ownership	1.000	MMLIC		
0000								DE	NII A	Massachusetts Mutual Life Insurance		400 000	188 10		
0000							MML Investment Advisers, LLC	DE	NI A	Company	Ownership	100.000	MMLIC		·
0000			04 4500050					DE	NII A	Massachusetts Mutual Life Insurance		400 000	188 10		
0000			. 04-1590850				MML Mezzanine Investor, LLC	DE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	100.000	MMLIC		
0000			46-3238013				MML Strategic Distributors, LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			40-3230013				INML Strategic distributors, LLC	VE	NI A	Massachusetts Mutual Life Insurance	Owner Strip	100.000	- MMLIC		+
0000			06-1563535	2881445			The MassMutual Trust Company, FSB	CT	NIA	Company	Ownership	100.000	MML IC	v	
0000			. 00-1000000	. 200 1443			The wassmutual frust company, rob			Massachusetts Mutual Life Insurance	Owner strip	100.000	I IIIILIO		
0000			26-0073611				MassMutual Asset Finance LLC	DE	NIA	Company	Ownership	99.600	MML IC		
0000			26-0073611				MassMutual Asset Finance LLC	DE	NIA	C.M. Life Insurance Company	Ownership	0.400	MMLIC		
0000			27-1379258				MMAF Equipment Finance LLC 2009-A	DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
0000			45-2589019				MMAF Equipment Finance LLC 2011-A	DE	NIA	MassMutual Asset Finance LLC	Ownership	100.000	MMLIC		
							MML Private Placement Investment Company	I,		Massachusetts Mutual Life Insurance					
0000			04-1590850				LLC	DE	NI A	Company	Ownership	100.000	MMLIC		ļl
1										Massachusetts Mutual Life Insurance			1		1 1
0000			04-1590850				MML Private Equity Fund Investor LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			. 04-1590850				MML Private Equity Fund Investor LLC	DE	NI A	Baring Asset Management Limited	. Management		MMLIC		
0000			04-1590850				MM Private Equity Intercontinental LLC	DE	NI A	MML Private Equity Fund Investor LLC	Ownership	100.000	MMLIC		

SCHEDULE Y

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						Name of Securities			Relation-		Board,	Owner-		SCA	,
						Exchange		Domi-	ship		Management,	ship		Filing	,
		NIAIO					Name of		- 1-						,
0		NAIC	ID.	Fadanal		if Publicly Traded	Names of	ciliary	to	Dina atta O anatus II ad bar	Attorney-in-Fact,	Provide	Lillation and Communities of	Re-	
Group	O N	Company	, ID	Federal	0117	(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)	
			45 0700407					25		Massachusetts Mutual Life Insurance		400.000			
0000			45-2738137				Pioneers Gate LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			04 0054040	0000040			W W A T U L U C	DE		Massachusetts Mutual Life Insurance		100 000	MW 10		
0000			04-2854319 06-1597528	2392316			MassMutual Holding LLC	DE	NI A NI A	Company	Ownership	100.000	MMLIC	Y	
0000			37-1732913				MassMutual Assignment Company Fern Street LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000			62-0951563	1160004			First Mercantile Trust Company	DE	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000			46-2252944	1100004			Haven Life Insurance Agency, LLC		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			04 1000000				MassMutual Ventures Holding LLC	DE	NIA	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000							MassMutual Ventures Management LLC	DE	NIA	MassMutual Holding LLC	Ownership	100.000	MMLIC		
							MassMutual Ventures SEA Management Private			massimataa iista iig 225					
0000							Limited	DE	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		,
0000							MassMutual Ventures Southeast Asia I LLC	DE	NI A	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000							MassMutual Ventures UK LLC	DE	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		<u> </u>
0000			47-1296410				MassMutual Ventures US I LLC	DE	NI A	MassMutual Holding LLC	Ownership.	100.000	MMLIC		
0000							MassMutual Ventures US II LLC	DE	NI A	MassMutual Holding LLC	Ownership	100.000	. MMLIC		. !
0000			04-1590850				MM Rothesay Holdco US LLC	DE	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		!
0000			47-1466022				LifeScore Labs, LLC	MA	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		ļ!
0000			04-1590850				MML Investors Services, LLC	MA	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		
0000			04-1590850				MML Insurance Agency, LLC	MA	NI A	MML Investors Services, LLC	Ownership	100.000	MMLIC		. !
0000			41-2011634				MMLISI Financial Alliances, LLC	DE	NI A	MML Investors Services, LLC	Ownership	100.000	. MMLIC		!
0000			45-4000072				MM Asset Management Holding LLC	DE	NI A	MassMutual Holding LLC	Ownership	100.000	MMLIC		.
0000			51-0504477				Barings LLC	DE	NI A	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
							Baring Asset Management (Asia) Holdings								,
0000			98-0524271				Limited	HKG	NI A	Barings LLC	Ownership	100.000	MMLIC		ļl
							Baring International Fund Managers (Bermuda)	D		Baring Asset Management (Asia) Holdings		400.000			,
0000			98-0457465				Limited	BMU	NI A	Limited	Ownership	100.000	MMLIC		
0000			00 0457400				Denies Assat Newscount (Asia) Limited	LIVO	NIA	Baring Asset Management (Asia) Holdings Limited	0	100,000	MM 10		
0000			98-0457463				Baring Asset Management (Asia) Limited Baring Asset Management Korea Limited	HKG KOR	NIA	Baring Asset Management (Asia) Limited	Ownership	100.000	MMLIC		
0000							baring Asset Management Norea Limited	NUH	NIA	Baring Asset Management (Asia) Holdings	owner snrp	100.000	. MMLIC		
0000			98-0457707				Baring SICE (Taiwan) Limited	TWN	NIA	Limited	Ownership	100.000	MMLIC		
0000			30-0431101				Dailing STOL (Talwall) Elilited		NI 7	Baring Asset Management (Asia) Holdings	owner strip	100.000	I MINILIO		
0000			98-0236449				Barings Japan Limited	JPN	NIA	Limited	Ownership	100.000	MMLIC		
							Baring Asset Management (Australia) Pty			Baring Asset Management (Asia) Holdings	551 6111 p				
0000		l	98-0457456				Limited	AUS	NI A	Limited	Ownership.	100.000	MMLIC	[l'
							Barings Investment Advisors (Hong Kong)			Baring Asset Management (Asia) Holdings					
0000							Limited	HKG	NI A	Limited	Ownership.	100.000	MMLIC		
										Baring Asset Management (Asia) Holdings					
0000							Barings Australia Holding Company Pty Ltd	AUS	NI A	Limited	Ownership	100.000	MMLIC		ļ [,]
0000			98-0457456				Barings Australia Pty Ltd	AUS	NI A	Baring Australia Holding Company Pty Ltd	Ownership	100.000	MMLIC		ļ!
0000			80-0875475				Barings Finance LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							BCF Europe Funding Limited	IRL	NI A	Barings Finance LLC	Ownership	100.000	MMLIC		.l!
0000							BCF Senior Funding LLC	DE	NI A	Barings Finance LLC	Ownership	100.000	MMLIC		ļl
0000			04-3238351				Barings Securities LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		ļ!
0000		-	98-0437588				Barings Guernsey Limited	GGY	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000		-					Barings Europe Limited	GBR	NI A	Barings Guernsey Limited	Ownership	100.000	- MMLIC		ļ!
0000							Barings Real Estate UK Holdings Limited	DE	NI A	Barings Europe Limited	Ownership	100.000	- MMLIC		l
0000		-					BREAE AIFM LLP	GBR	NI A	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		ļ
0000			00 005440				Barings Real Estate Advisers (Continental	ODD				100.000	IIII 10	- 1	1
0000		-	98-0654401				Europe) Limited	GBR	NI A	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC	[·····
0000			98-0654388				Barings Real Estate Advisers Europe LLP	GBR	NI A	Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		

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											Type	If			
											of Control	Control			
											(Ownership,	is		ls an	
						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-			Management,	ship		Filing	
		NAIC				if Dublish Traded	Names of	_	- 1-					9	
0		NAIC	ID	F11		if Publicly Traded	Names of	ciliary	to	Discorder Constructional leads	Attorney-in-Fact,	Provide	Lillations and a Company little or	Re-	
Group	O N	Company	, ID	Federal	0114	(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			00 0054440				Barings Real Estate Advisers Europe Finance	ODD	NII 4			400 000	188 10		
0000			98-0654412 98-1194368				Barings Real Estate Advisers GmbH	GBR DEU	NI A	Barings Real Estate UK Holdings Limited Barings Real Estate UK Holdings Limited	Ownership	100.000	MMLIC		
0000			98-1194368				Baring Asset Management Limited	GBR	NIA		Ownership	100.000	MMLIC		
0000			98-1012393				Barings Global Advisors Limited	GBR	NIA	MassMutual Holdings (Bermuda) Limited Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			. 30-1012333				BCGSS 2 GP LLP	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		·
0000							Barings European Direct Lending 1 GP LLP	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0457328				Baring International Investment Limited	GBR	NIA	Baring Asset Management Limited	Ownership.	100.000	MMLIC		
		-	00 010/020				Baring International Investment Management			Darring 7,000 t management Ermitted	omici dirip		mmE10		
0000			98-0457587				Holdings	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
		-	00 0107007				Tiorumgo			Baring International Investment Management	omici dirip				
0000			98-0457576				Baring Asset Management UK Holdings Limited .	GBR	NI A	Holdings	Ownership	100.000	MMLIC		
										Baring Asset Management UK Holdings Limited	1				
0000			98-0465031				Baring Asset Management GmbH	DEU	NIA		Ownership	100.000	MMLIC		
							Baring International Fund Managers (Ireland)			Baring Asset Management UK Holdings Limited					
0000			98-0524272				Limited	IRL	NI A		Ownership	100.000	MMLIC		
										Baring Asset Management UK Holdings Limited	1				
0000							Baring Asset Management Switzerland Sarl	CHE	NI A		Ownership	100.000	MMLIC		
										Baring Asset Management UK Holdings Limited	i				
0000			98-0497550				Baring France SAS	FRA	NI A		Ownership	100.000	MMLIC		
0000			98-0457586				Baring Fund Managers Limited	GBR		Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0457574				Baring Pension Trustees Limited	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0457578				Baring Investment Services Limited	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		4
0000							Barings GPC GP S.à. r.I	LUX	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Barings Investment Fund (LUX) GP S.à. r.I	LUX	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Almack Mezzanine GP III Limited	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000							Almack Holding Partnership GP Limited	GBR	NI A	Baring Asset Management Limited	Ownership	100.000	MMLIC		4
0000							Almack Mezzanine Fund Limited	GBR	NIA	Baring Asset Management Limited	Ownership	100.000	MMLIC		
0000			98-0432153				Almack Mezzanine Fund II Limited	GBR GBR	NI A	Baring Asset Management Limited Barings Guernsey Limited	Ownership	100.000	MMLIC		
0000			90-0432133				Barings (U.K.) Limited Barings Multifamily Capital Holdings LLC	ubn	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Multifamily Capital Holdings LLC	MI	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Multifamily Capital Corporation	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			04-3238351	3456895			Barings Real Estate Advisers Inc.	CA	NIA	Barings Real Estate Advisers LLC	Ownership	100.000	MMLIC		
0000			04-1590850	. 0400000			MassMutual Baring Holding LLC	DE	NIA	MassMutual Asset Management Holding LLC	Ownership	100.000	MMLIC		
0000			101 1000000				MassMutual Holdings (Bermuda) Limited	BMU	NIA	MassMutual Baring Holding LLC	Ownership	100.000	MMLIC		
		1	1							Massachusetts Mutual Life Insurance					ļ
0000							Agspring Holdco, LLC	DE	NIA	Company	Ownership	15.400	MMLIC		
2000										Massachusetts Mutual Life Insurance					
0000			81-2244465				Chassis Acquisition Holding LLC	DE	NI A	Company	Ownership/Influence	30.000	MMLIC		
0000			81-2244465				Chassis Acquisition Holding LLC	DE	NI A	Barings LLC	Influence.		MMLIC		
							,			Massachusetts Mutual Life Insurance					
0000			81-4258759				CRA Aircraft Holding LLC	DE	NI A	Company	Ownership/Influence	40.000	MMLIC		
0000		.	81-4258759	.			CRA Aircraft Holding LLC	DE	NI A	Barings LLC	Influence		MMLIC		4
		I		1						Massachusetts Mutual Life Insurance					1 1
0000		.	83-0560183	.			Aland Royalty Holdings LP	DE	NI A	Company	Ownership	26.700	MMLIC		l
0000			83-0560183				Aland Royalty Holdings LP	DE	NIA	Barings LLC	Management		MMLIC		
				1						Massachusetts Mutual Life Insurance					1 1
0000			46-2344300				Intermodal Holdings II LLC	DE	NI A	Company	Ownership	18.000	_ MMLIC		
0000		-	47-3055009	-			Milestone Acquisition Holding, LLC	DE	NI A	MassMutual Holding LLC	Ownership/Influence	18.300	MMLIC		4
1				1						Massachusetts Mutual Life Insurance	L		I		1 1
0000			. 47–3055009	-			Milestone Acquisition Holding, LLC.	DE	NI A	Company	Ownership	0.000	MMLIC	[
0000		.	47-3055009		I		Milestone Acquisition Holding, LLC.	DE	NI A	Barings LLC	Influence		MMLIC		

SCHEDULE Y

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											of Control	Control			
											(Ownership,	is		ls an	
						Name of Securities			Relation-		Board,	Owner-		SCA	
						Exchange		Domi-	ship		Management,	ship		Filing	
		NAIC					Names of		- 1-			- 1		9	
0		NAIC	ID	Fastanal		if Publicly Traded	Names of Parent, Subsidiaries	ciliary	to	Dina atha Canatas II ad Isaa	Attorney-in-Fact,	Provide Percen-	Lillaine et e Construction e	Re-	
Group	O No	Company		Federal RSSD	Olle	(U.S. or	Or Affiliates	Loca-	Reporting	Directly Controlled by	Influence,		Ultimate Controlling	quired?	
Code	Group Name	Code	Number	R55D	CIK	International)	Or Affiliates	tion	Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance	Other)	tage	Entity(ies)/Person(s)	(Y/N)	
0000			46-5460309				D 11 1 W 4 110	DE	NIA			31.500	MMLIC		
0000			46-5460309				Red Lake Ventures, LLC	DE	NIA	Company	Ownership/Influence	31.500	MMLIC		
0000			40-0400009				ned Lake Ventures, LLC	VE	NI A	Massachusetts Mutual Life Insurance	Initiuence	· -	. MMLIC		
0000			81-4065378				Remington L & W Holdings LLC	CT	NIA	Company	Ownership/Influence	66.300	MMLIC		
0000			81-4065378				Remington L & W Holdings LLC	CT	NIA	Barings LLC	Influence		MMLIC		
			01 4000070				Tionington E & Whordings EEO	01		Massachusetts Mutual Life Insurance	- Initiaciec		I MINICIO		
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	NI A	Barings LLC	Influence		MMLIC		
							, , , , , , , , , , , , , , , , , , , ,			Massachusetts Mutual Life Insurance					
0000			46-0687392				US Pharmaceutical Holdings I, LLC	DE	NI A	Company	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			20-2970495				US Pharmaceutical Holdings II, LLC	DE	NI A	Company	Ownership/Influence	42.600	MMLIC		
0000			20-2970495				US Pharmaceutical Holdings II, LLC	DE	NI A	Barings LLC	Influence		MMLIC		
										Massachusetts Mutual Life Insurance					
0000							Solar Acquisition Holding, LLC	DE	NI A	Company	Ownership/Influence	20.000	MMLIC		
0000							Solar Acquisition Holding, LLC	DE	NI A	Barings LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance			l		
0000							Validus Pharmaceuticals LLC	DE	NI A	Company	Ownership/Influence	100.000	MMLIC		
0000		-					VGS Acquisition Holding, LLC	DE	NI A	MassMutual Holding LLC	Ownership/Influence	33.300	MMLIC		
0000							VGS Acquisition Holding, LLC	DE	NI A	Barings LLC	Management	400 000	MMLIC		
0000							Aland Royalty GP, LLCBAI GP. LLC	DE	NI A NI A	Barings LLCBarings LLC	Ownership	100.000	MMLIC		
0000							Barings Alternative Investments SLP, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							Baring Asset-Based Income Fund (US) GP, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000			46-1197222				Barings Global Equity Fund	DE	NIA	Baring Asset Management Limited	Ownership.	100.000	MMLIC		
0000			40-1131222				Barings Global Investment Funds (U.S.)	DL		Dailing Asset management Enimited	Owner Sirry		I IIIILIO		
0000			04-1590850				Management LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							Babson Global Loan Feeder Management, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			98-0241935				Baring North America LLC	MA	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings ABIF SLP, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings CLO Investment Partners GP, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Core Property Fund GP LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							Barings Direct Lending GP Ltd.	CYM	NI A	Barings LLC	Ownership	100.000	MMLIC		
1			I			1	Barings Global Energy Infrastructure		l						
0000							Advisors, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000			1				D : W.W. A . I	11/2		Massachusetts Mutual Life Insurance		70 000	188.10		
0000							Barings Multi Asset Income Fund	HKG	NIA	Company	Ownership	72.600	MMLIC		
0000			I			1	Barings North American Private Loan Fund	DE	NIA	Barings LLC	O-manahi -	_100.000	100 10		
0000							Management, LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		· · · · · · · · · · · · · · · · · · ·
0000		-					Barings Global Real Assets Fund GP, LLC Barings/LAZ Parking Fund GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		1
0000			98-0536233				Benton Street Advisors, Inc.	CYM	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000		-					BREBF I GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000							BRECS VII GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			1				CCM Fund I REIT Manager LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000							CCM Venture I GP LLC	DE	NIA	Barings LLC	Ownership.	100.000	MMLIC		
0000			l				CCM Venture REIT Manager LLC	DE	NI A	Barings LLC	Ownership.	100.000	MMLIC		
0000							CEMF I GP LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							CHY Venture GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			l				CREF X GP LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000							CREF VIII GP, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		
0000		.	04-1590850	.			Great Lakes III GP, LLC	DE	NI A	Barings LLC	Ownership	100.000	MMLIC		

SCHEDULE Y

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											Type	If			
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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							Lake Jackson LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			04-1590850				Loan Strategies Management LLC	DE	NI A	Barings LLC	Ownership	100.000	. MMLIC		
0000			04-1590850				Mezzco LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			02-0767001				Mezzco II LLC	DE	NI A	Barings LLC	Ownership	98.400	MMLIC		
0000			41-2280126				Mezzco III LLC	DE	NI A	Barings LLC	Ownership	99.300	MMLIC		
0000			80-0920285 90-0666326				Mezzco IV LLC	DE	NI A	Barings LLC	. Ownership	99.300	MMLIC		
0000			90-0000320				Mezzco Australia LLC	DE	NIA NIA	Barings LLC	Ownership	72.000	MMLIC		
0000							RECSA-NY GP LLC	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
							Somerset Special Opportunities Management LLC			Dai ringo LEO	owner strip.		mine 10		
0000			04-1590850				Somer set special opportunities management EEs	DE	NIA	Barings LLC	Ownership	100.000	MMLIC		
0000			84-1149206	2897101			Oppenheimer Acquisition Corp.	DE	NI A	MassMutual Asset Management Holding LLC	Ownership.	97.000	MMLIC		
0000			13-2527171	2679183			OppenheimerFunds, Inc.	CO	NI A	Oppenheimer Acquisition Corp.	Ownership	100.000	MMLIC		
0000			13-2953455				OppenheimerFunds Distributor, Inc.	NY	NI A	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000			84-1106295				Oppenheimer Real Asset Management, Inc	DE	NI A	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000			13-4160541	3458125			OFI Global Institutional, Inc.	NY	NI A	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000			22-2697140				HarbourView Asset Management Corporation	NY	NI A	OFI Institutional Asset Management, Inc	Ownership	100.000	- MMLIC		
0000			13-3459790	2914875			OC Private Capital, LLC OFI Global Trust Company	DE NY	NIA	OFI Institutional Asset Management, Inc OFI Institutional Asset Management, Inc	Ownership	51.000	MMLIC		
0000			13-3459790	29148/5			OFI International. Ltd.	INY	NIA	OFI Institutional Asset Management, Inc	Ownership	100.000	MMLIC		
0000							SNW Asset Management Corporation	DE	NIA	OFI Institutional Asset Management, Inc	Ownership	100.000	MMLIC		
0000			60-2233720				Seattle Northwest Asset Management LLC	WA	NI A	OFI Institutional Asset Management, Inc	Ownership	100.000	MMLIC		
0000			25-1951632				Trinity Investment Management Corporation	PA	NI A	OFI Institutional Asset Management, Inc	Ownership	100.000	MMLIC		
0000			84-1128397				OFI SteelPath, Inc.	DE	NIA	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000			84-1066811				Shareholder Services, Inc.	CO	NI A	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000							OFI Advisors , LLC	DE	NI A	OppenheimerFunds, Inc.	Ownership	100.000	_ MMLIC		
0000							Index Management Solutions, LLC	PA	NI A	OppenheimerFunds, Inc.	Ownership	100.000	MMLIC		
0000			84-0765063				OFI Global Asset Management, Inc.	DE	NI A	OppenheimerFunds, Inc.	Ownership	100.000	- MMLIC		
0000			91-2036414 62-1210532				OFI Private Investments Inc.	NY NY	NIA NIA	OppenheimerFunds, Inc	Ownership	100.000	MMLIC		
0000			06-1121864				Tremont Group Holdings, LLC	CT	NIA	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
0000			20-8215352				Tremont GP, LLC	DE	NIA	Tremont Group Holdings, Inc.	Ownership	100.000	MMLIC		
0000			90-0874510				Settlement Agent, LLC	DE	NI A	Tremont GP	Ownership	100.000	MMLIC		
0000							Tremont (Bermuda) Limited	BMU	NI A	Tremont Group Holdings, Inc.	Ownership	_100.000	MMLIC		
		1			1				1	Massachusetts Mutual Life Insurance					1
0000			04-3313782				MassMutual International LLC	DE	NI A	Company	Ownership	100.000	MMLIC	Y	
0000							MassMutual Asia Limited	HKG	IA	MassMutual International LLC	Ownership	100.000	MMLIC		
0000							MassMutual Asia Investors Ltd	HKG	NI A	MassMutual Asia Limited	Ownership	100.000	- MMLIC		ļ
0000							MassMutual Guardian Limited	HKG	NIA	MassMutual Asia Limited	Ownership	100.000	MMLIC		l
0000							MassMutual Insurance Consultants Limited MassMutual Services Limited	HKG HKG	NIA	MassMutual Asia Limited	Ownership	100.000	MMLIC		
0000							MassMutual Trustees Limited	HKG	NIA	MassMutual Asia Limited	Ownership	80.000	MMLIC		
0000			98-0610331				Protective Capital (International) Limited	HKG	NIA	MassMutual Asia Limited	Ownership	100.000	MMLIC		
0000			98-1033127				MassMutual Internacional (Chile) SpA	CHL	NIA	MassMutual International LLC	Ownership	100.000	MMLIC		
0000							MassMutual Life Insurance Company	JPN	IA	MassMutual International LLC	Ownership.	100.000	MMLIC		
							,			Massachusetts Mutual Life Insurance					
0000			04-2443240				MML Management Corporation	MA	NI A	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	NI A	MML Management Corporation	Ownership	100.000	MMLIC		
		1						25		Massachusetts Mutual Life Insurance	l	400.00-			
0000			04-1590850				MML Mezzanine Investor II, LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000		1	04 1500050				Mil Marranina Investor III IIC	DE	NIA	Massachusetts Mutual Life Insurance	Ownership	100,000	IMILIC		
0000			04-1590850				MML Mezzanine Investor III, LLC	DE	NI A	Company	Ownership	100.000	MMLIC		l

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						Name of Securities			Relation-		Board,	Owner-		SCA	
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		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	G. 64p . 146	0000			0		G. 7			Massachusetts Mutual Life Insurance	0	lage		(1,11)	1
0000			27-3576835				MassMutual External Benefits Group LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			20-8730751				Cornerstone Global REIT Corporation	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 04-1590850				100 w. 3rd Street LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			82-2432216				300 South Tryon Hotel LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
0000			. 02-2432210				300 South Tryon note: LLC	VE	NI A	Massachusetts Mutual Life Insurance	Owner Strip				
0000			. 04-1590850				300 South Tryon LLC	DE	NI A	Company	Ownership.	100.000	MMLIC		
3000			1000000				ood oodtii ii yon EEO			Massachusetts Mutual Life Insurance	omioi dirip		- mile 10		
0000			20-3887968				54 West Capital LLC	DE	NI A	Company	Ownership.	100.000	MMLIC		
							·			Massachusetts Mutual Life Insurance					
0000							Almack Mezzanine Fund I LP	GBR	NI A	Company	Ownership/Influence	41.400	MMLIC		
0000							Almack Mezzanine Fund I LP	GBR	NI A	C.M. Life Insurance Company	Ownership	4.600	MMLIC		
										Massachusetts Mutual Life İnsurance		70.000			
0000							Almack Mezzanine Fund II Unleveraged LP	GBR	NI A	Company	Ownership/Influence	72.900	MMLIC		
0000							Almack Mezzanine Fund III LP	GBR	NIA	Company	Ownership/Influence	34.200	MMLIC		
0000							Almack Mezzanine Fund III LP	GBR	NIA	C.M. Life Insurance Company	Ownership	3.800	MMLIC		
0000							Almack Mezzanine Fund III LP	GBR	NIA	Barings (U.K.) Limitied	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NI A	Company	Ownership/Influence	13.400	MMLIC		
0000			36-4868350				Barings Asset-Based Income Fund (US) LP	DE	NIA	Barings LLC	Management		MMLIC		
							Barings Emerging Markets Corporate Bond Fund			Massachusetts Mutual Life Insurance		07.400			
0000							Desires Francis Nation Community Desired	IRL	NIA	Company	Ownership/Influence	97.400	MMLIC		
0000							Barings Emerging Markets Corporate Bond Fund	IRL	NIA	Barings LLC	Management		MMLIC		
0000							Barings Global Special Situations Credit Fund			Massachusetts Mutual Life Insurance	. Imaria yenieri t		MIMETO		
0000							1	IRL	NIA	Company	Ownership/Influence	79.300	MMLIC		
							Barings Global Special Situations Credit Fund								
0000							1	IRL	NI A	Barings LLC	Management		MMLIC		
							Babson Capital Global Special Situation			Massachusetts Mutual Life Insurance					
0000			98-1206017				Credit Fund 2	DE	NI A	Company	Ownership/Influence	23.700	MMLIC		
0000		1	98-1206017		1		Babson Capital Global Special Situation Credit Fund 2	DE	NIA	C.M. Life Insurance Company	Ownership	1.500	MMLIC		
		I	11 000 17				Babson Capital Global Special Situation		NIV	O.m. Life Hisurance company	omioi ani p	1.000			1
0000		I	98-1206017		I		Credit Fund 2	DE	NIA	Barings LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			. 37-1506417				Babson Capital Loan Strategies Fund, L.P	DE	NI A	Company	Ownership/Influence	79.900	MMLIC		
0000			37-1506417				Babson Capital Loan Strategies Fund, L.P	DE	NI A	C.M. Life Insurance Company	Ownership	3.700	MMLIC		
0000			. 37-1506417				Babson Capital Loan Strategies Fund, L.P	DE	NI A	Barings LLC	Management		MMLIC		
0000							B : 10 11: 1 V: 11 B 1 E 1	LDI	NIA	Massachusetts Mutual Life Insurance		47, 400	188 10		
0000		l					Barings US High Yield Bond Fund Barings US High Yield Bond Fund	IRL	NIA	Company	Ownership/Influence	47.400	MMLIC		1
0000							Barings US High Yield Bond Fund	IRL	NIA	Barings LLC	Management		- MMLIC		
0000							Babson CLO Ltd. 2013-I	CYM	NI A	Barings LLC	Influence		MMLIC		3
0000							Babson CLO Ltd. 2014-I	CYM	NI A	Barings LLC	Influence		MMLIC		2
0000							Babson CLO Ltd. 2014-II	CYM	NIA	Barings LLC	Influence	-	MMLIC		4
0000			-				Babson CLO Ltd. 2015-I	CYM	NI A	Barings LLC	Influence	 -	MMLIC		5
0000							Babson CLO Ltd. 2015-II	CYM	NIA	Barings LLC	Influence		MMLIC		6
0000							Babson CLO Ltd. 2016-I	CYM	NIA	Barings LLC	Influence	 	MMLIC		
0000							Barings CLO Ltd. 2017-1	CYM	NIA	Barings LLC	Influence	 	MMLIC		
0000							Dai iiiys ULU Liu. 2017-1	NIM	NI A	Datings LLC	Inniuence	-	[mmL16		

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						Name of Securities			Relation-		Board,	Owner-		SCA	
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		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							Babson Euro CLO 2014-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
0000							Babson Euro CLO 2014-II BV	NLD	NI A	Barings LLC	Influence		MMLIC		
0000							Babson Euro CLO 2015-I BV	NLD	NIA	Barings LLC	Influence		MMLIC		
0000							Babson Euro CLO 2016-I BV	NLD	NI A	Barings LLC	. Influence		MMLIC		
0000							Barings Euro Equity Income Fund	HKG	NIA	Baring Asset Management Limited	Ownership/Influence	93.900	MMLIC		
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	NI A	Barings LLC	Management		MMLIC		
							Barings Real Estate European Value Add I SCSp			Massachusetts Mutual Life Insurance					
0000								GBR	NI A	Company	Ownership/Influence	90.400	MMLIC		
							Barings Real Estate European Value Add I SCSp								
0000							D D F.A.A. F V.I Add 000	GBR	NI A	C.M. Life Insurance Company	Ownership	9.600	MMLIC		
0000							Barings Real Estate European Value Add I SCSp	GBR	NI A	Barings LLC	Management		MMLIC		
0000								UDI 1		Massachusetts Mutual Life Insurance	. management.		I MMLTO		
0000			11-3789446				Baring Focused EAFE Equity Fund	DE	NIA	Company	Ownership/Influence	49.600	MMLIC		
0000			11-3789446				Baring Focused EAFE Equity Fund	DE	NI A	Baring Asset Management Limited	Management		MMLIC		
							Barings Global Energy Infrastructure Fund I			Massachusetts Mutual Life Insurance					
0000			98-1332384				LP	CYM	NI A	Company	Ownership/Influence	95.500	MMLIC		.
							Barings Global Energy Infrastructure Fund I								
0000			98-1332384				LP	CYM	NI A	Baring Asset Management Limited	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000							Barings Global Private Loan Fund	LUX	NI A	Company	Ownership/Influence	11.500	MMLIC		
							Barings Global Private Loan Fund	LUX	NIA	Massachusetts Mutual Life Insurance	Management		MMLIC		
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NI A	Company	Ownership/Influence	48.300	MMLIC		
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	C.M. Life Insurance Company	Ownership	13.200	MMLIC		
0000			82-3867745				Barings Global Real Assets Fund LP	DE	NIA	Barings LLC	Management		MMLIC		
							Barings Global Special Situations Credit Fund			Massachusetts Mutual Life Insurance					
0000							3	IRL	NI A	Company	Ownership/Influence	18.900	MMLIC		
							Barings Global Special Situations Credit Fund								
0000							3	IRL	NIA	Barings LLC	Management		MMLIC		
0000							Barings Middle Market CLO 2017-I Ltd & LLC	CYM	NI A	Barings LLC	Influence	-	MMLIC		
0000			38-4010344				Barings North American Private Loan Fund LP .	DE	NI A	Massachusetts Mutual Life Insurance Company	Ownership/Influence	51.400	MMLIC		
0000			38-4010344				Barings North American Private Loan Fund LP .	DE	NIA	Baring Asset Management Limited	Management	51.400	MMLIC		
		-					Darringo North Amorroan Frivate Leaf Fullu Li			Massachusetts Mutual Life Insurance	- managonorit		mile IV		
0000		.	98-1332384				Barings RE Credit Strategies VII LP	DE	NI A	Company	Ownership/Influence	32.800	MMLIC		<u> </u>
0000			98-1332384				Barings RE Credit Strategies VII LP	DE	NIA	Baring Asset Management Limited	Management.		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			26-4142796				Baring International Small Cap Equity Fund	DE	NI A	Company	Ownership/Influence	29.400	MMLIC		
0000			26-4142796				Baring International Small Cap Equity Fund	DE	NI A	Baring Asset Management Limited	Management		MMLIC		
0000							Daniera Francis Vantura III II D	DE	A// A	Massachusetts Mutual Life Insurance	0	00.000	188 10		
0000		-	-				Braemar Energy Ventures I, L.P Braemar Energy Ventures I, L.P	DE	NI A	Company	Ownership/Influence		MMLIC		
0000							Braemar Energy Ventures I, L.P	DE	NIA	Barings LLC	Ownership	1.300	MMLIC		
0000		-					Barings European Core Property Fund SCSp	LUX	NIA	MassMutual Holding LLC	Ownership/Influence	17.000	MMLIC		
0000]				Barings European Core Property Fund SCSp	LUX	NIA	C.M. Life Insurance Company	Ownership	1.100	MMLIC		
0000							Barings European Core Property Fund SCSp	LUX	NIA	Barings Real Estate Advisers LLC	Management.		MMLIC		
0000			38-4059932	.			Benchmark 2018-B2 Mortgage Trust	NY	NI A	Barings LLC	Influence.		MMLIC		
0000			27-1701622				Cornerstone Core Mortgage Venture LP	DE	NIA	MassMutual Holding LLC	Ownership/Influence	50.000	MMLIC		
0000			27-1701622				Cornerstone Core Mortgage Venture LP	DE	NI A	Barings Real Estate Advisers LLC	Management	· 	MMLIC		
			45 075					25		Massachusetts Mutual Life Insurance					
0000		-	45-3751572				Cornerstone Enhanced Mortgage Fund I LP	DE	NI A	Company	Ownership/Influence	2.800	MMLIC		.1

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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-	
Craun			ID	Federal		(U.S. or	Parent, Subsidiaries			Directly Controlled by	Influence,	Provide Percen-	Liltimata Cantrallina		
Group Code	Group Name	Company Code	Number	RSSD	CIK	International)	Or Affiliates	Loca- tion	Reporting Entity	Directly Controlled by (Name of Entity/Person)	Other)		Ultimate Controlling Entity(ies)/Person(s)	quired? (Y/N)	*
0000	Group Name	Code	45-3751572	RSSD	CIK	international)	Cornerstone Enhanced Mortgage Fund LP	DE	NIA	Barings Real Estate Advisers LLC	Management	tage	MMLIC	(Y/IN)	
			45-3751572				Corner Storie Erinanceu moi tyaye Fund i EF		NIA	Massachusetts Mutual Life Insurance	_ management	·····	. MMLIC		
0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Company	Ownership/Influence	92.300	MMLIC		
0000			20-8730751				Cornerstone Global Real Estate LP	DE	NI A	C.M. Life Insurance Company	Ownership.	7.600	MMLIC		
0000			20-8730751				Cornerstone Global Real Estate LP	DE	NIA	Barings Real Estate Advisers LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			36-4770946				Cornerstone High Yield Venture LP	DE	NIA	Company	Ownership/Influence	49.700	MMLIC		
0000			36-4770946				Cornerstone High Yield Venture LP	DE	NI A	Barings Real Estate Advisers LLC	Management		MMLIC		
0000			20-5578089				Barings Core Property Fund LP	DE	NI A	MassMutual Holding LLC	Ownership/Influence	12.000	MMLIC		
0000			20-5578089				Barings Core Property Fund LP	UE	NI A	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance	Management		MMLIC		
0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NI A	Company	Ownership/Influence	24.800	MMLIC		
0000			46-5432619			***************************************	Cornerstone Real Estate Fund X LP	DE	NIA	C.M. Life Insurance Company	Ownership	2.800	MMLIC		
0000			46-5432619				Cornerstone Real Estate Fund X LP	DE	NIA	Barings Real Estate Advisers LLC	Management	2.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC .	MA	NIA	Company	Ownership/Influence	98.300	MMLIC		
0000			35-2531693				Cornerstone Permanent Mortgage Fund III LLC .	MA	NI A	Barings Real Estate Advisers LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NI A	Company	Ownership/Influence	99.900	- MMLIC		
0000			46-5437441				Barings/LAZ Parking Fund LP	DE	NI A	Barings Real Estate Advisers LLC	Management		MMLIC		
0000				4007502			Duchess VII CLO B.V	GBR	NI A	Barings LLC	Influence	 -	MMLIC		
0000			20-3887968				E-Wise Land Venture LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			. 20-3007300				L-Wise Land Venture LLC	UL		Massachusetts Mutual Life Insurance	Owner Strip		I IIIILIO		
0000			80-0691253				Gateway Mezzanine Partners I, L.P	DE	NIA	Company	Ownership/Influence	71.600	MMLIC		
							, , , , , , , , , , , , , , , , , , , ,			Massachusetts Mutual Life Insurance					
0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NI A	Company	Ownership/Influence	35.100	. MMLIC		
0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NIA	C.M. Life Insurance Company	Ownership	5.200	MMLIC		
0000			90-0991195				Gateway Mezzanine Partners II LP	DE	NI A	Barings LLC	Management		MMLIC		
0000			37-1708623				Onest Labora III. I. D.	חר	NI A	Massachusetts Mutual Life Insurance	0	35.700	MMLIC		
0000			37-1708623				Great Lakes III, L.P	DE	NIA NIA	Company	Ownership/Influence	35.700	MMLIC		
			37-1700023				uleat Lanes III, L.I.	UL		Massachusetts Mutual Life Insurance	- management				
0000			04-1590850				Gillem GA Industrial LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
							JPMCC Commercial Mortgage Securities Trust					T			
0000			38-4041011	.			2017-JP7	NY	NI A	Barings LLC	Management		MMLIC		
							JPMDB Commercial Mortgage Securities Trust								
0000			38-4032059	-			2017-05	NY	NI A	Barings LLC	Management		MMLIC	[
							v	25		Massachusetts Mutual Life Insurance		400.000			
0000			20-3887968				Kazwell Realty Partners LLC	DE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	100.000	MMLIC		
0000			82-1512591				KKR-MM Vector LP	DE	NIA	Company	Ownership/Influence	100.000	MML1C		
0000			02-1312391				NAN-WWW Vector LP	UE	NI A	Massachusetts Mutual Life Insurance	. Owner Ship/ Initiaence	100.000	. MMLTC		
0000			46-4255307				Marco Hotel LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			1200001 111							Massachusetts Mutual Life Insurance					
Ω000			81-3000420				MM Debt Participations LLC	DE	NI A	Company	Ownership/Influence	100.000	MMLIC		
0000			81-3000420				MM Debt Participations LLC	DE	NIA	Barings LLC	Management		MMLIC		
			I	1						Massachusetts Mutual Life Insurance		1			
0000			20-3887968				Oakley Grove Development LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			00 0007000	1			OLL B. B. A. L. C.	DE		Massachusetts Mutual Life Insurance		400 000	188.10		
0000			20-3887968				Old Pasco Properties LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			82-4411267				RB Apartments LLC	DE	NI A	Massachusetts Mutual Life Insurance Company	Ownership	100.000	MMLIC		
			02-4411201				ווט האמו נוופוונט בבט	UE	N1N	vulipaity	Owner 2111h	100.000	mmL10		

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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)	*
	G. Cup Hamo	0000			0		O. 7 mmatos			Massachusetts Mutual Life Insurance	J	lago	=::::::y(:::::);:::::::::(0)	(1,11)	
0000			75-2901061				Reston Arboretum LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			. 73-2301001				neston Arboretum LLC		NI /	Massachusetts Mutual Life Insurance	Owner Sirrp		MINILIO		
0000			30-0713071				Riva Portland LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
0000			30-07 1307 1				Rockall CLO B.V.	GBR	NIA	Barings LLC	Influence		MMLIC		
0000							NUCKATI OLU B.V.	ubn	NI A	Massachusetts Mutual Life Insurance	. IIII luelice	·····			·
0000			54-2055778				Rockville Town Center LLC	VA	NIA	Company	Ownership	100.000	MMLIC		
			. 34-2033776				ROCKVITTE TOWN CENTER LLC	VA	NIA	Massachusetts Mutual Life Insurance	Owner Ship	100.000	MMLIC		
0000			20-8856877				O	DE	NIA		Ownership/Influence	58.500	MML1C		
0000							Somerset Special Opportunities Fund L.P.	DE		Company					
0000			20-8856877				Somerset Special Opportunities Fund L.P	DE	NI A	C.M. Life Insurance Company	Ownership	2.900	MMLIC		
										Massachusetts Mutual Life Insurance		400 000			
0000			20-3887968				South Pasco Properties LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			35-2553915				Ten Fan Pier Boulevard LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			30-0336246				Tower Square Capital Partners II, L.P	DE	NI A	Company	Ownership/Influence	22.400	MMLIC		
0000			30-0336246				Tower Square Capital Partners II, L.P	DE	NI A	C.M. Life Insurance Company	Ownership	3.900			
										Massachusetts Mutual Life Insurance					
0000			32-0160190				Tower Square Capital Partners II-A, L.P	DE	NI A	Company	Ownership/Influence		MMLIC		
0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NI A	Barings LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance					
0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NI A	Company	Ownership/Influence	0.000	MMLIC		
0000			41-2280127				Tower Square Capital Partners III, L.P.	DE	NIA	MassMutual Holding LLC	Ownership/Influence	16.700	MMLIC		
							Tonor oquaro oupritur rurtinoro riri, Eri i			Massachusetts Mutual Life Insurance	a more on p, miraone e				
0000			41-2280129				Tower Square Capital Partners IIIA, L.P	DE	NI A	Company	Ownership/Influence	96.200	MMLIC		
0000			41-2280129				Tower Square Capital Partners IIIA, L.P.	DE	NI A.	Barings LLC	Management		MMLIC		
							Total oqual o capital rai thoro iiii, 211			Massachusetts Mutual Life Insurance	- management t	-			
0000			80-0920367				Tower Square Capital Partners IV-A, L.P.	DE	NIA	Company	Ownership/Influence	21.300	MMLIC		
							Tower oquare oupritur ranthers iv A, E.i.			Massachusetts Mutual Life Insurance	owner strip/ trit tuelice	21.000	minL10		
0000			04-1590850				West 46th Street Hotel LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
0000			. 04-100000				Barings Emerging Markets Debt Blended Total		NI /	Company	Owner strip				
0000							Return Fund	IRL	NIA	Barings LLC	Management		MMLIC		
0000								INL	NIA	bai riigs LLC	. management				·
0000							Barings Emerging Markets Debt Short Duration	IRL	NIA	Barings LLC	Management		MMLIC		
0000							Fund	ITL	NIA	Dai Higo LLC	_ management				·
0000		1					Barings Emerging Markets Sovereign Debt Fund	IRL	NII A	Paringe II C	Managament		MMLIC		
0000							Debago Occided Loro Observation No. 1 . 5 . 115		NI A	Barings LLC	Management		MMLIC		
0000		I]		Babson Capital Loan Strategies Master Fund LF		N: -	ls	l., .		144 10		1
0000							B	CYM	NI A	Barings LLC	Management		MMLIC		·····
1		1			l		Barings Emerging Markets Debt Blended Total	l		L	I	1			1
0000			47-3758432				Return Fund	MA	NI A	Barings LLC	Management		MMLIC		ļ
							Barings Emerging Markets Local Currency Debt								
0000			47-3774453				Fund	MA	NI A	Barings LLC	Management		MMLIC		ļ
0000			47-3790192				Barings Global High Yield Fund	MA	NI A	Barings LLC	Management		MMLIC		
0000							Baring Greater China Equity Fund	HKG	NI A	Baring Asset Management Limited	Management		MMLIC		
0000			47-3734770				Barings Total Return Bond Fund	MA	NI A	Barings LLC	Management		MMLIC		
0000			47-3801860				Barings U.S. High Yield Fund	MA	NI A	Barings LLC	Management		. MMLIC		ļ
										Massachusetts Mutual Life Insurance					
0000			71-1018134				Great Lakes II LLC	DE	NI A	Company	Ownership	11.200			
0000			71-1018134				Great Lakes II LLC	DE	NI A	C.M. Life Insurance Company	Ownership	1.000	MMLIC		
1 1		1			1		Somerset Special Opportunities Master Fund	1				1			1
0000			l				LP	CYM	NI A	Barings LLC	Management		MMLIC		l
										Massachusetts Mutual Life Insurance					
0000		1	04-1590850		İ		Wood Creek Venture Fund LLC	DE	NI A	Company	Ownership	40.000	MMLIC		1
							0. 0. 0. TOITCHIO I WING ELO		·		1 o o				

SCHEDULE Y

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											Type	If]]
											of Control	Control			
											(Ownership,	is		ls 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			ID	Federal		(U.S. or	Parent, Subsidiaries	Loca-	Reporting	Directly Controlled by	Influence,	Percen-	Ultimate Controlling	quired?	,
Group	Craun Nama	Company		RSSD	CIK	International)	Or Affiliates			(Name of Entity/Person)	Other)		Entity(ies)/Person(s)	(Y/N)	*
Code	Group Name	Code	Number	หออบ	CIK	international)	Or Allillates	tion	Entity	Massachusetts Mutual Life Insurance	Other)	tage	Entity(les)/Person(s)	(Y/IN)	+
0000			00 4000044				50.1:1 + 11.0	DE	NII A			59.100	188.10		
0000			36-4823011 36-4823011				50 Liberty LLC	DE	NI A NI A	Company	Ownership		MMLIC		
0000			36-4823011				50 Liberty LLC	UE	NIA	C.M. Life Insurance Company	Ownership	5.800	MMLIC		
0000			80-0948028				One Harbor Shore LLC	DE	NIA		O-manahi -	49.900	MMLIC		
0000			80-0948028				One Harbor Shore LLC	DE	NIA	Company	Ownership	49.900	MMLIC		
			00-0940020				one harbor shore LLC	VE	NI A	C.M. Life Insurance Company Massachusetts Mutual Life Insurance	Ownership	4.900	MMLIC		
0000			81-4382111				Budapester Strasse LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			01-4302111				budapester Strasse LLC	UE	NIA	Massachusetts Mutual Life Insurance	owner sirrp	100.000	MMLIC		
0000			82-2285211				Calgary Railway Holding LLC	DE	NI A	Company	Ownership.	90.000	MMLIC		
0000			82-2285211				Calgary Railway Holding LLC	DE	NIA	C.M. Life Insurance Company	Owner ship	10.000	MMLIC		
9000			02-2200211				Cargary Harrway Horuring LLC	UL		Massachusetts Mutual Life Insurance	Owner strip				
0000			82-3307907				Cornbrook PRS Holdings LLC	DE	NIA	Company	Ownership	100.000	MMLIC		
			02-0001901				COMBTOOK THE HOTCHIGS ELC	UL		Massachusetts Mutual Life Insurance	Owner strip		MMLTO		
0000			95-4207717				Cornerstone California Mortgage Fund LLC	CA	NIA	Company	Ownership	100.000	MMLIC		
			35-4201111				Corners tone carriornia wortgage runu r EEC	07		Massachusetts Mutual Life Insurance	Owner strip		MMLTO		
0000			95-4207717				Cornerstone California Mortgage Fund II LLC _	CA	NIA	Company	Ownership	100.000	MMLIC		
			33 4201111				Cornerstone California Mortgage Fund III LLC	Un.		Massachusetts Mutual Life Insurance	Owner strip		MINETO		
0000			95-4207717				Corners tone Carriornia mortgage Fund TIT ELC	CA	NI A	Company	Ownership	100.000	MMLIC		
			33 4201111					Un.		Massachusetts Mutual Life Insurance	Owner strip		MINETO		
0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NIA	Company	Ownership	84.400	MMLIC		
0000			56-2630592				Cornerstone Fort Pierce Development LLC	DE	NI A	C.M. Life Insurance Company	Ownership	5.600	MMLIC		
							Control of the Control of Service Serv			Massachusetts Mutual Life Insurance					
0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NI A	Company	Ownership	97.700	MMLIC		
0000			45-2632610				Cornerstone Permanent Mortgage Fund	MA	NI A	Barings LLC	Management		MMLIC		1
							19-92			Massachusetts Mutual Life Insurance					1
0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NI A	Company	Ownership	99.500	MMLIC		.
0000			61-1750537				Cornerstone Permanent Mortgage Fund II	MA	NIA	Baring LLC	Management		MMLIC		
										Massachusetts Mutual Life Insurance	, and the second				
0000			35-2531693				Cornerstone Permanent Mortgage Fund III	MA	NIA	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			61-1793735				Cornerstone Permanent Mortgage Fund IV	MA	NI A	Company	Ownership	100.000	MMLIC		
0000			81-0890084				CREA Madison Member LLC	DE	NI A	C.M. Life Insurance Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance				1	1 1
0000			82-1563809				CCB Montford Park LLC	DE	NI A	Company	Ownership	75.200	MMLIC		
0000			82-1563809				CCB Montford Park LLC	DE	NI A	C.M. Life Insurance Company	Ownership	4.800	. MMLIC		
										Massachusetts Mutual Life Insurance				1	1 1
0000			82-2783393				Danville Riverwalk Venture, LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
]	l							Massachusetts Mutual Life Insurance				1	1 1
0000			20-3347091				Fan Pier Development LLC	DE	NI A	Company	Ownership	59.300	MMLIC		
0000			20-3347091				Fan Pier Development LLC	DE	NI A	C.M. Life Insurance Company	Ownership	5.900	MMLIC		
0000			40.0000500				E	DE		Massachusetts Mutual Life Insurance		04 500	144 10	1	1 1
0000			46-3880526				Farringdon London Holdings LLC	DE	NI A	Company	Ownership	94.500	MMLIC		
0000			46-3880526				Farringdon London Holdings LLC	DE	NI A	C.M. Life Insurance Company	Ownership	5.500	- MMLIC		
0000]	00 4040050				Internation Common III C	DE	ALL A	Massachusetts Mutual Life Insurance	0	F7 000	100		1
0000		l	20-4819358				Johnston Groves LLC	DE	NI A	Company	Ownership	57.200	MMLIC		-
0000			04 5000400				Landmant Manakaskan Haldinas II O	DE	ALLA	Massachusetts Mutual Life Insurance	0	100,000	100	1	1 1
0000			81-5360103				Landmark Manchester Holdings LLC	DE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	100.000	MMLIC		
0000]	02 0001500				Nelle West Vesture II C	DE	NII A		O-marah i	95.000	MAIL LC	1	1 1
0000			83-0881588				NoHo West Venture LLC	UE	NI A	Company Massachusetts Mutual Life Insurance	Ownership	95.000	MMLIC		
0000]	04-1590850				PACO France Logistics LLC	DE	NIA	Company	Ownership.	100.000	MMLIC		1
0000			04-1030000				I NOU I Tallee Lugistics LLC	UĽ	NI A	Massachusetts Mutual Life Insurance	Owner Stilb	100.000			-
0000]	04-1590850				PACO France Logistics 3 LLC	DE	NI A	Company	Ownership.	100.000	MMLIC	1	1 1
VUUU		I	104-1030000			I	TI NOU I I AIRE LOUISTICS & LLC	I UE		UUIIIPairy	I OMITE 9111 D			1	

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1	2	3	4	5	6	7	8	9	10	11	12 Type of Control	13 If Control	14	15	16
						Name of Securities			Relation-		(Ownership, Board,	is Owner-		ls an SCA	1
						Exchange		Domi-	ship		Management,	ship		Filing	1
		NAIC				if Publicly Traded	Names of	ciliary	to		Attorney-in-Fact,	Provide		Re-	1
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	G. Gap Ttamo	0000		1.002	<u> </u>	miomational)	3. 7 tillingto0		2	Massachusetts Mutual Life Insurance	5	iago		(1,11)	
0000			82-3393166				Portland 400 Sixth Manager LLC	DE	NI A	Company	Ownership	95.000			
							Salomon Brothers Commercial Mortgage Trust								1
0000							2001–MM	DE	NI A	Barings Real Estate Advisers LLC Massachusetts Mutual Life Insurance	Influence	·	MMLIC		
0000			. 27-2977720				Sawgrass Village Shopping Center LLC	DE	NI A	Company	Ownership	84.200	MML1C		1
0000			27-2977720				Sawgrass Village Shopping Center LLC	DE	NIA	C.M. Life Insurance Company	Ownership	15.800	MMLIC		
			1				g			Massachusetts Mutual Life Insurance					
0000			04-1590850				Spain Avalon Holding LLC	DE	NI A	Company	Ownership	100.000			
			0.4 5070574				T. DW 0111 1111			Massachusetts Mutual Life Insurance		05.000			1
0000			81-5273574				Three PW Office Holding LLC	DE	NI A	Company	Ownership	95.000	MMLIC		ł
0000			35-2484550				Twenty Two Liberty LLC	MA	NI A	Company	Ownership	59.200	MMLIC		1
0000			35-2484550				Twenty Two Liberty LLC	MA	NIA	C.M. Life Insurance Company	Ownership.	5.900	MMLIC		
							,			Massachusetts Mutual Life İnsurance					
0000			45-4606547				UK LIW Manager LLC	DE	NI A	Company	Ownership	1.000			
			45 4000547							Massachusetts Mutual Life Insurance					1
0000			45-4606547				UK LIW Member LLC	DE	NI A	Company	Ownership	99.000	MMLIC		
0000			82-3250684				Unna, Dortmund Holding LLC	DE	NIA	Company	Ownership	100.000	MMLIC		1
			02 0200004				offina, bot tiliana noranig ELO			Massachusetts Mutual Life Insurance	Office Strip		millio		
0000			82-3281588				Via Ceresio Milan LLC	DE	NI A	Company	Ownership	100.000	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			45-5401109				Washington Gateway Apartments Venture LLC	DE	NI A	Company	Ownership	92.000	MMLIC		
0000			. 45–5401109				Washington Gateway Apartments Venture LLC	DE	NI A	C.M. Life Insurance Company Massachusetts Mutual Life Insurance	Ownership	4.800	MMLIC		ł
0000			. 20-2970495				Waterford Development Associates	DE	NI A	Company	Ownership	90.000	MML1C		1
0000			20-23/0433				materioru beveropiilerit Associates	UL		Massachusetts Mutual Life Insurance	Owner Strip		LIC		
0000			47-1993493				Waterloo London Holdings LLC	DE	NI A	Company	Ownership	100.000	. MMLIC		L
							, and the second			Massachusetts Mutual Life Insurance					1
0000			46-3122029				WeHo Domain LLC	DE	NI A	Company	Ownership	77.400	MMLIC		
0000			. 46-3122029				WeHo Domain LLC	DE	NI A	C.M. Life Insurance Company	Ownership	12.600	MMLIC		ł
0000			81-1552222				Willowwood Lakeside Master LLC	DE	NIA	Massachusetts Mutual Life Insurance Company	Ownership	50.000	MMLIC		1
			. 01-1332222				WITTOWWOOD Lakestue master LLC			Massachusetts Mutual Life Insurance	Owner Strip		I MINIL 10		
0000			20-5481477				Ygnatio Valley Funding	DE	NI A	Company	Ownership	90.000	MMLIC		
										Massachusetts Mutual Life Insurance					1
0000			45-3168892	-			MassMutual Barings Dynamic Allocation Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
			54 050000							Massachusetts Mutual Life Insurance		44.000			1
0000			51-0529328		0000927972	00	MassMutual Premier Main Street Fund MassMutual Premier Strategic Emerging Markets	MA	NI A	Company Massachusetts Mutual Life Insurance	Ownership	14.800	- MMLIC		ł
0000			. 26-3229251		0000927972	00	Fund	MA	NI A	Company	Ownership	2.300	MMLIC		1
			20 0220201		0000027072	04	T GITG			Massachusetts Mutual Life Insurance	omior on p	2.000			[
0000			. 04-3277550		0000927972	0Q	MassMutual Premier Value Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
l							MassMutual Select Diversified International			Massachusetts Mutual Life Insurance					1
0000			. 14-1980900		0000916053	00	Fund	MA	NI A	Company	Ownership	0.000	MMLIC		ł
0000			. 01-0821120		0000916053	00	MassMutual Select Diversified Value Fund	MA	NI A	Massachusetts Mutual Life Insurance Company	Ownership	2.300			1
0000			. 0 1-002 1 120		0000310003	υ ν	massmutual select biversilled value Fund	MA	NI M	Massachusetts Mutual Life Insurance	Owner on th	2.000			
0000			04-3512593		0000916053	0Q	MassMutual Select Fundamental Growth Fund	MA	NI A	Company	Ownership	0.000	MMLIC		l
										Massachusetts Mutual Life Insurance					1
0000			. 04-3513019		0000916053	00	MassMutual Select Large Cap Value Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
0000			40 4740005		0000040050	00	Herekani Orleat Hid O. W. J. E. J.	147	AU A	Massachusetts Mutual Life Insurance	0	07.000	IIII 10		1
0000			42-1710935		0000916053	UQ	MassMutual Select Mid-Cap Value Fund	MA	NI A	Company	Ownership	27.800			l

SCHEDULE Y

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		_									Type	If		-	
											of Control	Control			
											(Ownership,	is		ls 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)	*
						,	MassMutual Select Small Capital Value Equity		ĺ	Massachusetts Mutual Life Insurance	,	Ŭ	, , ,		
0000			02-0769954		0000916053	0Q	Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			04–3584140		0000916053	0Q	MassMutual Select Small Company Value Fund	MA	NI A	Company	Ownership	12.400	MMLIC		
0000			00 0047400		0000916053	00	MassMutual Select T. Rowe Price Retirement 2005 Fund		NIA	Massachusetts Mutual Life Insurance	0	0.000	MML IC		
0000			82-3347422		0000916053	00	MassMutual Select T. Rowe Price Retirement	MA	NI A	CompanyMassachusetts Mutual Life Insurance	Ownership	0.000	MMLIC		
0000			82-3355639		0000916053	00	2010 Fund	MA	NIA	Company	Ownership.	0.000	MML1C		
			02 0000000		0000010000	O4	MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance	omor on p.		mmL10		
0000			82-3382389		0000916053	0Q	2015 Fund	MA	NI A	Company	Ownership.	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3396442		0000916053	0Q	2020 Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3417420		0000916053	0Q	2025 Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
0000			00 0400050		0000040050	00	MassMutual Select T. Rowe Price Retirement		NII 4	Massachusetts Mutual Life Insurance		0.000	188 10		
0000			82-3430358		0000916053	0Q	2030 Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
0000			82-3439837		0000916053	00	2035 Fund	MA	NIA	Company	Ownership.	0.000	MMLIC		
			02 0403007		0000010000	OQ	MassMutual Select T. Rowe Price Retirement		IVIA	Massachusetts Mutual Life Insurance	owner arr p		mile 10		
0000			82-3451779		0000916053	00	2040 Fund	MA	NI A	Company	Ownership.	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3472295		0000916053	0Q	2045 Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
							MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance					
0000			82-3481715		0000916053	0Q	2050 Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
0000			00 000011		0000040000	00	MassMutual Select T. Rowe Price Retirement		NIA	Massachusetts Mutual Life Insurance	0	0.000	100		
0000			82-3502011		0000916053	00	2055 Fund	MA	NI A	CompanyMassachusetts Mutual Life Insurance	Ownership	0.000			
0000			82-3525148		0000916053	00	2060 Fund	MA	NIA	Company	Ownership	2.800	MMLIC		
			02 0020110			ou	MassMutual Select T. Rowe Price Retirement			Massachusetts Mutual Life Insurance	owner on p				
0000			82-3533944		0000916053	0Q	Balanced Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
										Massachusetts Mutual Life Insurance					
0000			46-4257056				MML Series International Equity Fund	MA	NI A	Company	Ownership	0.000	MMLIC		
			47 05 47000							Massachusetts Mutual Life Insurance		400 000			
0000			47-3517233				MML Series II Asset Momentum Fund	MA	NIA	Company	Ownership	100.000	. MMLIC		·
0000			47-3529636				MML Series II Dynamic Bond Fund	MA	NIA	Massachusetts Mutual Life Insurance Company	Ownership	0.000	MMLIC		1
			00000000				mme del 163 11 Dyllamic Dona Luna		NI 7	Massachusetts Mutual Life Insurance	omici sirip	0.000			1
0000		l	47-3544629	l			MML Series II Equity Rotation Fund	MA	NI A	Company	Ownership	95.000	MMLIC	. I	1
										Massachusetts Mutual Life Insurance					
0000			47-3559064				MML Series II Special Situations Fund	MA	NI A	Company	Ownership	97.600	MMLIC		ļ
										Massachusetts Mutual Life Insurance					
0000			27-1933828		0000916053	0Q	MassMutual RetireSMART 2015 Fund	MA	NI A	Company	Ownership	100.000	MMLIC		·
0000			07 4000000		0000010050	00	Name Alabara Dating ONADT COOK F		ALI A	Massachusetts Mutual Life Insurance	0hi	70 000	188 10		
0000			27-1933389		0000916053	UU	MassMutual RetireSMART 2035 Fund	MA	NI A	Company Massachusetts Mutual Life Insurance	Ownership	78.600	. MMLIC		·
0000			27-1932769		0000916053	00	MassMutual RetireSMART 2045 Fund	MA	NI A	Company	Ownership	70.700	MMLIC		
			1302103		0000310000	υ પ	massmataa Hetii comanii 2040 I unu		NI 7	Massachusetts Mutual Life Insurance	omici sirip				1
0000			46-3289207		0000916053	0Q	MassMutual RetireSMART 2055 Fund	MA	NI A	Company	Ownership	19.600	MMLIC		1
										Massachusetts Mutual Life Insurance					
0000			47-5326235		0000916053	00	MassMutual RetireSMART 2060 Fund	MA	NI A	Company	Ownership	83.900	MMLIC		ļ
										Massachusetts Mutual Life Insurance					
0000			45-1618155		0000916053	00	MassMutual RetireSMART Conservative Fund	MA	NI A	Company	Ownership	0.000	MMLIC		ļ
0000			45 4040000		0000040050	20	W W A A D A: 00007 0 7		N11 *	Massachusetts Mutual Life Insurance		0.000	IIII 10		
0000			45-1618222		0000916053	UQ	MassMutual RetireSMART Growth Fund	MA	NI A	Company	Ownership	0.000	MMLIC		

SCHEDULE Y

Group Code0000	Group Name	NAIC Company Code	ID Number 45-1618262 45-1618046 81-5311583 93-6305075	Federal		Names of Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund	Domiciliary Location	NI A	Directly Controlled by (Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance Company	12 Type of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other) Ownership	13 If Control is Owner- ship Provide Percen- tage	Ultimate Controlling Entity(ies)/Person(s) MLIC	Is an SCA Filing Re- quired? (Y/N)	*
	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	Exchange if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	ship to Reporting Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	of Control (Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	Control is Owner-ship Provide Percentage	Entity(ies)/Person(s)	SCA Filing Re- quired?	*
0000	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	Exchange if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	ship to Reporting Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	(Ownership, Board, Management, Attorney-in-Fact, Influence, Other)	is Owner- ship Provide Percen- tage	Entity(ies)/Person(s)	SCA Filing Re- quired?	*
0000	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	Exchange if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	ship to Reporting Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Board, Management, Attorney-in-Fact, Influence, Other)	is Owner- ship Provide Percen- tage	Entity(ies)/Person(s)	SCA Filing Re- quired?	*
0000	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	Exchange if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	ship to Reporting Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Board, Management, Attorney-in-Fact, Influence, Other)	ship Provide Percen- tage	Entity(ies)/Person(s)	SCA Filing Re- quired?	*
	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	Exchange if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	ship to Reporting Entity	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Management, Attorney-in-Fact, Influence, Other)	ship Provide Percen- tage	Entity(ies)/Person(s)	Filing Re- quired?	*
	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	if Publicly Traded (U.S. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	ciliary Loca- tion	to Reporting EntityNIA	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Attorney-in-Fact, Influence, Other)	Provide Percen- tage	Entity(ies)/Person(s)	Re- quired?	*
	Group Name	Company	Number 45-1618262 45-1618046 81-5311583	RSSD C	(U.Ś. or International)	Parent, Subsidiaries Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	Loca- tion	Reporting Entity NIA	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Influence, Other)	Percentage	Entity(ies)/Person(s)	quired?	*
0000	Group Name		Number 45-1618262 45-1618046 81-5311583	RSSD C	6053 00	Or Affiliates MassMutual RetireSMART Moderate Fund MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	tionMA	EntityNIA	(Name of Entity/Person) Massachusetts Mutual Life Insurance Company Massachusetts Mutual Life Insurance	Other)	tage	Entity(ies)/Person(s)		*
0000	Group Name	Code	45-1618262 45-1618046 81-5311583	000091	6053 00	MassMutual RetireSMART Moderate Fund	MA d	NIA	Massachusetts Mutual Life Insurance Company	. Ownership	0.000	MMLIC	(Y/N)	
0000			45–1618046 81–5311583			. MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	MA	NI A	Company					
0000			45–1618046 81–5311583			. MassMutual RetireSMART Moderate Growth Fund . OFI Pictet Global Environmental Solution Fund	MA	NI A	Massachusetts Mutual Life Insurance					
0000 0000 0000		-	81–5311583	000091	6053 00	OFI Pictet Global Environmental Solution Fund	d	NI A		Ownership	0.000	MMLIC		
0000 0000 0000			81–5311583		6053 0Q	OFI Pictet Global Environmental Solution Fund	d		Company	Ownership	0.000	, MML1C		
0000												1		1
0000							. DE			I., .				1
0000			93-6305075					NI A	OppenheimerFunds, Inc.	Management		MMLIC		'
0000			93-6305075						Massachusetts Mutual Life Insurance					1
0000						Oppenheimer Developing Markets Fund	DE	NI A	Company	Ownership	0.000	MMLIC		
0000									Massachusetts Mutual Life Insurance					
0000						Oppenheimer Developing Markets Equity UCITS .	IRL	NI A	Company	Ownership	77.100	MMLIC		'
						Oppenheimer Developing Markets Equity UCITS .		NI A	OppenheimerFunds, Inc	Management		MMLIC		
		1				Oppenheimer Emerging Markets Innovators UCITS								1
							IRL	NI A	OppenheimerFunds, Inc	Management		MMLIC		
						Oppenheimer Emerging Markets Local Debt UCITS								1
			34-40740DH				IRL	NI A	OppenheimerFunds, Inc.	Management		MMLIC		'
0000			46-2984739			Oppenheimer Emerging Markets Revenue ETF	IRL	NI A	OppenheimerFunds, Inc.	Management		MMLIC		
						Oppenheimer Emerging Markets Ultra Dividend								1
0000			82-2237734			Revenue ETF	DE	NI A	OppenheimerFunds, Inc.	Management		MMLIC		
			81-3492794			Oppenheimer ESG Revenue ETF	DE		OppenheimerFunds, Inc.	Management		MMLIC		'
0000						Oppenheimer Global Equity UCITS	IRL		OppenheimerFunds, Inc.	Management		MMLIC		
0000			81-3480754			Oppenheimer Global ESG Revenue ETF	DE	NI A	OppenheimerFunds, Inc.	Management		MMLIC		'
							D=		Massachusetts Mutual Life Insurance			MMI IC		1
			46-1604428	000156	2689 00	Oppenheimer Global Real Estate Fund	DE	NI A	Company	Ownership	0.000			'
			47-3676235			Oppenheimer Global Multi-Asset Growth Fund		NI A	OppenheimerFunds, Inc.	Management		MMLIC		
0000			81-5010075			Oppenheimer Global Revenue ETF	DE	NI A NI A	OppenheimerFunds, Inc.	Management		MMLIC		
0000						Oppenheimer Global Value Equity UCITS	IRL DE		OppenheimerFunds, Inc.	Management		MMLIC		'
0000			82-2693880 81-4969331			Oppenheimer Global Unconstrained Bond Fund		NI A NI A	OppenheimerFunds, Inc.	Management		MMLIC		
0000			81-4909331			Oppenheimer International Revenue ETF	DE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
0000			00 0074540			Oppenheimer International Ultra Dividend Revenue ETF	DE	NIA	O	N		MMLIC		1
0000			82-2271542			Oppenheimer Preferred Securities & Income	UE	NIA	OppenheimerFunds, Inc.	Management		MMLIC		
0000			00 0400700				DE	NIA	O	Management		MMI IC		1
			82-3462739			Fund Oppenheimer Russell 2000 Dynamic Multifactor		NIA	OppenheimerFunds, Inc.	Management		MMLIC		
0000			82-2794856			oppenneimer Hussell 2000 Dynamic Multitactor	DE	NIA	OppenheimerFunds. Inc.	Management		MMI IC		1
			82-2/94806			Oppenheimer Russell 1000 Momentum Factor ETF		NIA	OppenneimerFunds, Inc.	Management		MMLIC		·
0000			82-2716323			Oppenneimer Hussell 1000 Momentum Factor Elf	DE	NIA	OppenheimerFunds, Inc.	N		MMLIC		1
0000			82-2759921			0	DE	NIA	OppenheimerFunds, Inc.	Management		MMI IC		
			82-2759921			Oppenheimer Russell 1000 Value Factor ETF	UE	NIA	OppenneimerFunds, Inc.	Management		MMLIC		
0000		1	00 0701707			Oppenheimer Russell 1000 Low Volatility Factor ETF	DE	NI A	OppenheimerFunds, Inc.	Managament		MMLIC		1
0000			82-2701797 82-2740997			Oppenheimer Russell 1000 Size Factor ETF			OppenheimerFunds, Inc.	Management		MMLIC		
0000			82-2740997			Oppenheimer Russell 1000 Size Factor EIF	DE		OppenheimerFunds, Inc.	Management		MMLIC		
0000			82-2732571			Oppenheimer Russell 1000 Quality Factor EIF		NIA NIA	OppenheimerFunds, Inc.	Management		MMLIC		
			02-2/08498				DE	NI A	oppennermerrungs, Inc.	Management		MMLIV		
0000		1	00.0000400			Oppenheimer SteelPath MLP & Energy	DE	NIA	A contribute les	W		MMI IC		1
0000			82-2222426			Infrastructure Fund	. UE	NI A	OppenheimerFunds, Inc.	Management	+	MMLIC		·

Aster	risk	Explanation
1		Massachusetts Mutual Life Insurance Company owns .85% of the affiliated debt of Jefferies Finance LLC
2		Debt investors own 6.7% and includes only Great Lakes III, L.P.
3		Debt investors own 9.6% and includes only Babson Capital Loan Strategies Fund, L.P.
4		Debt investors own 7.7% and includes only Great Lakes III, L.P.

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

SUPPLEMENTAL EXHIBITS AND SCHEDULES INTERROGATORIES

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

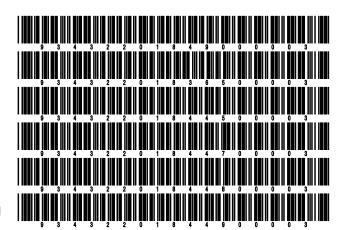
	<u>-</u>	Response
1.	Will the Trusteed Surplus Statement be filed with the state of domicile and the NAIC with this statement?	NO
2.	Will the Medicare Part D Coverage Supplement be filed with the state of domicile and the NAIC with this statement?	NO
3.	Will the Reasonableness of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC?	NO
4.	Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXV be filed with the state of domicile and electronically with the NAIC?	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
6.	Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Average Market Value) be filed with the state of domicile and electronically with the NAIC?	NO
7.	Will the Reasonableness and Consistency of Assumptions Certification required by Actuarial Guideline XXXVI (Updated Market Value) be filed with the state of domicile and electronically with the NAIC?	NO

Explanation:

- 1. Not required
- 2. This line of business is not written by the company.
- 3. Not required
- Not required
- 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]
- 6. 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]



OVERFLOW PAGE FOR WRITE-INS

Additional Write-ins for Liabilities Line 25

Nadition	at Write-ins for Elabilities Line 25		
		1	2
		Current	December 31
		Statement Date	Prior Year
2504.	Funds awaiting escheat and other miscellaneous	4,299,334	3,475,167
2597.	Summary of remaining write-ins for Line 25 from overflow page	4,299,334	3,475,167

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 yilk var		
7.	Deduct current year's other than temporary impair ent recommendation zed		
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

	wortgage Loans		
		1	2
		Veer to Data	Prior Year Ended
		Year to Date	December 31
1.	Book value/recorded investment excluding accrued interest, December 31 of prior year	937,488,060	966,906,414
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition 2.2 Additional investment made after acquisition Capitalized deferred interest and other Accrual of discount	38,517,482	90,944,788
	2.2 Additional investment made after acquisition	7,938,783	6,054,895
3.	Capitalized deferred interest and other	774,963	1,231,199
4.	Accrual of discount	97, 179	196,304
5.	Unrealized valuation increase (decrease)		
6.	Total gain (loss) on disposals	(1,091,600)	(1,777,299)
7.	Deduct amounts received on disposals	66,477,295	133,376,815
8.	Unrealized valuation increase (decrease) Total gain (loss) on disposals Deduct amounts received on disposals Deduct amortization of premium and mortgage interest points and commitment fees	(7,709)	297,796
9.	Total foreign exchange change in book value/recorded investment excluding accrued interest	[(2,063,304)	7,606,370
10.	Deduct current year's other than temporary impairment recognized		
11.	Book value/recorded investment excluding accrued interest at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	915, 191,977	937,488,060
12.	Total valuation allowance		
13.	Subtotal (Line 11 plus Line 12)	915, 191,977	937,488,060
14.	Deduct total nonadmitted amounts		
15.	Statement value at end of current period (Line 13 minus Line 14)	915, 191, 977	937,488,060

SCHEDULE BA - VERIFICATION

Other Long-Term Invested Assets

	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	186,063,997	201,480,523
2.	Cost of acquired:		
	2.1 Actual cost at time of acquisition	11,677,973	7,927,118
	2.2 Additional investment made after acquisition	20,603,627	30,436,099
3.	Capitalized deferred interest and other		
4.	Accrual of discount		
5.	Unrealized valuation increase (decrease)	22,300,324	33,025,208
6.	Unrealized valuation increase (decrease)	(713,467)	(971,054)
7.	Deduct amounts received on disposals	66.724.902	87.051.539
8.	Deduct amortization of premium and depreciation	7.933	10.506
9.	Total foreign exchange change in book/adjusted carrying value	815,974	1,807,499
10.	Deduct current year's other than temporary impairment recognized	123,613	579,350
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5+6-7-8+9-10)	173,891,981	186,063,997
12.	Deduct total nonadmitted amounts	1,379,182	424,747
13.	Statement value at end of current period (Line 11 minus Line 12)	172,512,799	185,639,250

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	4,466,803,023	4,414,366,679
2.	Cost of bonds and stocks acquired		
3.	Accrual of discount	4,822,515	7,450,962
4.	Unrealized valuation increase (decrease)	15 , 137 , 785	10,659,841
5.	Total gain (loss) on disposals	1,995,166	(3,818,124)
6.	Deduct consideration for bonds and stocks disposed of	549,822,024	1, 198, 916, 654
7.	Deduct amortization of premium	2, 135, 863	3,826,992
8.	Total foreign exchange change in book/adjusted carrying value	(18,642,589)	49,712,831
9.	Deduct current year's other than temporary impairment recognized	5,021,818	4, 136, 579
10.	Total investment income recognized as a result of prepayment penalties and/or acceleration fees	2,091,105	
11.	Book/adjusted carrying value at end of current period (Lines 1+2+3+4+5-6-7+8-9+10)	4,611,619,385	4,466,803,023
12.	Deduct total nonadmitted amounts		
13.	Statement value at end of current period (Line 11 minus Line 12)	4,611,619,385	4,466,803,023

15. Total Bonds and Preferred Stock

STATEMENT AS OF SEPTEMBER 30, 2018 OF THE C.M. Life Insurance Company

SCHEDULE D - PART 1B

Showing the Acquisitions, Dispositions and Non-Trading Activity

During the Current Quarter for all Bonds and Preferred Stock by NAIC Designation Book/Adjusted Book/Adjusted Book/Adjusted Book/Adjusted Book/Adjusted Dispositions Non-Trading Activity Carrying Value Acquisitions Carrying Value Carrying Value Carrying Value Carrying Value End of Beginning During During During End of End of December 31 NAIC Designation of Current Quarter Current Quarter Current Quarter Current Quarter First Quarter Second Quarter Third Quarter Prior Year **BONDS** ...1,989,276,969 ..245,679,643 ..95,402,011 ...(1,324,211) ...2,020,819,432 ..1,989,276,969 ...2, 138, 230, 390 ...1,987,056,572 1. NAIC 1 (a)1,791,351,672 ...1, 111, 843, 658 1.289.013.658 ... 11.005.557 1.630.345.393 .1.791.351.672 ..1,625,187,229 ..1,794,027,179 2. NAIC 2 (a)172,984,693 ...2,446,866 ..20,661,777 _(12,019,497) ..219,419,600 ..172,984,693 142,750,285 ..259,208,744 ..255,602,421 ...21,330,556 ..14,159,840 ..(49, 378, 105) ...252,413,887 .255,602,421 ..213,395,032 ..248, 103, 386 4. NAIC 4 (a) 110.710.321 9.212.962 115.553.974 .155.642.833 5. NAIC 5 (a)2,210,273 ..51.935.201 .110.710.321 ..99,721,760 25,889,532 24,062 703,751 (2,789,581)23,763,656 25,889,532 22,420,262 27,001,342 6. NAIC 6 (a) .. 7. Total Bonds 4.345.815.608 1,383,535,058 1,429,153,999 (2,570,636) 4,262,315,942 4,345,815,608 4,297,626,031 4,415,118,983 PREFERRED STOCK 8. NAIC 14.200.000 ...4.200.000 4.200.000 ..4.200.000 ..4,200,000 ..9, 138, 214 ..1,685,924 ..(499,487) ..9, 138, 214 ..9, 138, 214 .10,324,651 ..8,713,737 9. NAIC 29.836.458 ...744.370 1.501.934 .502.148 10.264.922 ...9.836.458 ..9.581.042 .10.718.547 10. NAIC 3 ...997,904 .697,225 6.505 2.498.516 1.143.121 545.503 ...1, 143, 121 453.813 11. NAIC 42,399,755 ...(1,429) ...344,569 ...2,399,755 ...2,398,326 ..2,413,440 12. NAIC 5. 60.753 60,753 60,753 60,753 60,753 13. NAIC 6 26.778.301 2.975.797 2.199.159 7.737 26.506.974 26.778.301 27.562.676 26.560.290 Total Preferred Stock

1.386.510.855

1.431.353.158

(2.562.899)

4.288.822.916

4.372.593.909

4.325.188.707

4,441,679,273

(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:

4.372.593.909

SCHEDULE DA - PART 1

Short-Term Investments

	1 Book/Adjusted	2	3	4 Interest Collected	5 Paid for Accrued Interest
	Carrying Value	Par Value	Actual Cost	Year-to-Date	Year-to-Date
9199999 Totals	24,916,854	XXX	24,839,056		

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	4,973,791	17,482,743
2.	Cost of short-term investments acquired		
3.	Accrual of discount	404,602	124,219
4.	Unrealized valuation increase (decrease)		
5.	Total gain (loss) on disposals	(531)	344
6.	Deduct consideration received on disposals	52,893,479	34,747,778
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)	24,916,854	4,973,791
11.	Deduct total nonadmitted amounts		
12.	Statement value at end of current period (Line 10 minus Line 11)	24,916,854	4,973,791

SCHEDULE DB - PART A - VERIFICATION

Options, Caps, Floors, Collars, Swaps and Forwards

1.	Book/Adjusted Carrying Value, December 31, prior year (Line 9, prior year)	(68,401,349)
2.	Cost Paid/(Consideration Received) on additions	2,295,213
3.	Unrealized Valuation increase/(decrease)	(48,465,135)
4.	Total gain (loss) on termination recognized	3,325,269
5.	Considerations received/(paid) on terminations	6,859,882
6.	Amortization	
7.	Adjustment to the Book/Adjusted Carrying Value of hedged item	
8.	Total foreign exchange change in Book/Adjusted Carrying Value	
9.	Book/Adjusted Carrying Value at End of Current Period (Lines 1+2+3+4-5+6+7+8)	(118, 105, 883)
10.	Deduct nonadmitted assets	
11.	Statement value at end of current period (Line 9 minus Line 10)	(118, 105, 883)

SCHEDULE DB - PART B - VERIFICATION

Futures Contracts

	i didies ool	illacis			
1.	Book/Adjusted carrying value, December 31 of prior year (Line 6, prior year)				
2.	Cumulative cash change (Section 1, Broker Name/Net Cash Deposits Footnote - Co	umulative Cash Cha	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	(21,791,424)			
	3.14 Section 1, Column 18, prior year	3,502,776	(25,294,201)	(25,294,201)	
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	(21,791,424)			
	3.24 Section 1, Column 19, prior year	3,502,776	(25,294,201)	(25,294,201)	
3.3	Subtotal (Line 3.1 minus Line 3.2)				
4.1	Cumulative variation margin on terminated contracts during the year		(23, 103, 187)		
4.2	Less:				
	4.21 Amount used to adjust basis of hedged item				
	4.22 Amount recognized	(26,605,963)	(26,605,963)		
4.3	Subtotal (Line 4.1 minus Line 4.2)				3,502,776
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				(3,502,776
6.	Book/Adjusted carrying value at end of current period (Lines 1+2+3.3-4.3-5.1-5.2)				
7.	Deduct total nonadmitted amounts				
8.	Statement value at end of current period (Line 6 minus Line 7)				

Schedule DB - Part C - Section 1 - Replication (Synthetic Asset) Transactions (RSATs) Open **NONE**

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 Value Check	
1.	Part A, Section 1, Column 14	(118, 105, 883)	
2.	Part B, Section 1, Column 15 plus Part B, Section 1 Footnote - Total Ending Cash Balance		
3.	Total (Line 1 plus Line 2)	(118, 105,	883)
4.	Part D, Section 1, Column 5	295,917,612	
5.	Part D, Section 1, Column 6	(435,814,920)	
6.	Total (Line 3 minus Line 4 minus Line 5)	21,791,	424
		Fair Value Check	
7.	Part A, Section 1, Column 16	(118,105,883)	
8.	Part B, Section 1, Column 13	(21,791,424)	
9.	Total (Line 7 plus Line 8)		307)
10.	Part D, Section 1, Column 8	295,917,612	
11.	Part D, Section 1, Column 9	(435,814,920)	
12	Total (Line 9 minus Line 10 minus Line 11)		
		Potential Exposure Check	
13.	Part A, Section 1, Column 21		
14.	Part B, Section 1, Column 20	11,992,400	
15.	Part D, Section 1, Column 11	180,205,221	
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	287,825,540	131,990,044
2.	Cost of cash equivalents acquired	4, 120, 042, 909	7,272,103,557
3.	Accrual of discount	2,807,953	2,792,546
4.	Unrealized valuation increase (decrease)		
5.	Total gain (loss) on disposals	285	1,716
6.	Deduct consideration received on disposals	4,392,351,934	7,119,062,323
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)	18,324,753	287,825,540
11.	Deduct total nonadmitted amounts		
12.	Statement value at end of current period (Line 10 minus Line 11)	18,324,753	287,825,540