MassMutual Global Funding II

USD 17,000,000,000
GLOBAL DEBT ISSUANCE PROGRAM

This base prospectus supplement dated August 30, 2017 (this **"Supplement"**) is in addition to and must be read in conjunction with the base prospectus dated June 9, 2017, (the **"Base Prospectus"**) prepared by MassMutual Global Funding II (the **"Issuer"**) under the Issuer's Global Debt Issuance Program (the **"Program"**). Capitalized terms used herein and not otherwise defined shall have the meanings of such terms set forth in the Base Prospectus.

This Supplement comprises a supplement in accordance with Article 16 of the Directive 2003/71/EC. This Supplement has been approved by the Central Bank of Ireland, as competent authority under the Directive 2003/71/EC. The Central Bank of Ireland only approves this Supplement as meeting the requirements imposed under Irish and EU law pursuant to the Directive 2003/71/EC.

On August 10, 2017, Massachusetts Mutual Life Insurance Company (**"MassMutual"**) published its unconsolidated quarterly unaudited condensed statutory statements (including any notes thereto, the **"Second Quarter 2017 Condensed Statutory Financial Statements"**), which are attached hereto as Annex 1.

Except as disclosed in this Supplement, there has been no other significant new factor, material mistake or inaccuracy relating to the information included in the Base Prospectus since the publication of the Base Prospectus.

Where there is any inconsistency between this Supplement and the Base Prospectus, the language used in this Supplement shall prevail.

The Issuer accepts responsibility for the information contained in this Supplement. To the best of the knowledge and belief of the Issuer (which has taken all reasonable care to ensure that such is the case), the information contained in this Supplement is in accordance with the facts and does not omit anything likely to affect the import of such information.

Supplement dated August 30, 2017

Risk Factors

In addition to the other information set forth in the Base Prospectus, this Supplement and any Final Terms (as defined in the Base Prospectus), prospective purchasers of Notes should carefully consider the factors discussed under "Risk Factors" in the Base Prospectus, which could materially affect the Program, the Notes or the business, financial condition, cash flows or future results of MassMutual. The risk factor below is an addition to the risk factors set forth in the Base Prospectus under "Risk Factors—Risk Factors Related to the Notes and the Series Trusts".

Risks Related To Changes in the Method Pursuant to Which the LIBOR Rates are Determined and Potential Phasing Out of LIBOR After 2021

In September 2012, the government of the United Kingdom published the results of its review of LIBOR (commonly referred to as the "**Wheatley Review**"). The Wheatley Review made a number of recommendations for changes with respect to LIBOR including the introduction of statutory regulation of LIBOR, the transfer of responsibility for LIBOR from the British Bankers' Association (the "**BBA**") to an independent administrator, changes to the method of compilation of lending rates and new regulatory oversight and enforcement mechanisms for rate setting. Based on the Wheatley Review, final rules for the regulation and supervision of LIBOR by the Financial Conduct Authority (the "**FCA**") were published and came into effect on April 2, 2013 (the "**FCA Rules**"). In particular, the FCA Rules include requirements that (1) an independent LIBOR administrator monitor and survey LIBOR submissions to identify breaches of practice standards and/or potentially manipulative behavior, and (2) firms submitting data to LIBOR establish and maintain a clear conflicts of interest policy and appropriate systems and controls. In addition, in response to the Wheatley Review recommendations, ICE Benchmark Administration Limited (the "**ICE Administration**") was appointed as the independent LIBOR administrator, effective February 1, 2014. On July 27, 2017, the FCA announced that it expects it will no longer persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021 (the "**FCA Announcement**").

It is not possible to predict the effect of the FCA Rules, the FCA Announcement, any changes in the methods pursuant to which the LIBOR rates may be determined and any other reforms to LIBOR or the establishment of any alternative reference rates that may be enacted in the United Kingdom and elsewhere, any of which may adversely affect the trading market for LIBOR-based securities or result in the phasing out of LIBOR as a reference rate for securities. In addition, any changes announced by the FCA, the ICE Administration or any other successor governance or oversight body, or future changes adopted by such body, in the method pursuant to which the LIBOR rates are determined may result in a sudden or prolonged increase or decrease in reported LIBOR rates. If that were to occur, and to the extent that the value of the Notes issued under the Program is affected by reported LIBOR rates, the level of interest payments and the value of such Notes may be affected. In addition, uncertainty as to the extent and manner in which the Wheatley Review recommendations will be adopted and the timing of such changes may adversely affect the current trading market for LIBOR-based securities, including any of such Notes issued under the Program.

Interim Update for the Six Months Ended June 30, 2017

The unaudited statements of operations and statements of financial position of MassMutual for the six months ended June 30, 2017 and June 30, 2016, and as of June 30, 2017, respectively, presented below should be read in conjunction with, and is qualified in its entirety by reference to, the Statutory Financial Statements, Notes to Statutory Financial Statements, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Analysis of Results of Operations – For the Years Ended December 31, 2016, 2015 and 2014" and "Management's Discussion and Analysis of Financial Condition and Results of Operations - Statement of Financial Position at December 31, 2016 compared to December 31, 2015," in each case, included in the Base Prospectus and the Second Quarter 2017 Condensed Statutory Financial Statements of MassMutual as of and for the six months ended June 30, 2017, which are attached hereto as Annex 1.

Analysis of Results of Operations – For the Six Months Ended June 30, 2017 Compared to the Six Months Ended June 30, 2016

The following table sets forth the components of MassMutual's statement of operations for the periods presented:

	Six Months Ended June 30,		
	2017	**2016**	**% Change**
	(unaudited)	**(unaudited)**	
	($ In Millions)		
Revenue:			
Premium income	$ 9,662	$ 10,026	(4)%
Net investment income	3,459	3,071	13
Fees and other income	559	433	29
Total revenue	13,680	13,530	1
Benefits and expenses:			
Policyholders' benefits	10,074	8,266	22
Change in policyholders' reserves	1,136	4,167	(73)
Change in group annuity reserves assumed	(394)	(797)	51
General insurance expenses	1,408	956	47
Commissions	497	442	12
State taxes, licenses and fees	105	113	(7)
Total benefits and expenses	12,826	13,147	(2)
Net gain from operations before dividends and federal income taxes	854	383	123
Dividends to policyholders	761	796	(4)
Net gain (loss) from operations before federal income taxes	93	(413)	123
Federal income tax benefit	(127)	(187)	32
Net gain (loss) from operations	220	(226)	197
Net realized capital (losses) gains	(315)	71	(544)
Net loss	**$ (95)**	**$ (155)**	39 **%**

The $60 million decrease in net loss to $95 million for the six months ended June 30, 2017 is due to an increase in net gain from operations of $446 million, partially offset by an increase in net realized capital losses of $386 million. The major components of the decrease to net loss from operations includes a decrease in the change in policyholders' reserves of $3.0 billion, an increase in net investment income of $388 million and an increase in fees and other income of $126 million, partially offset by an increase in policyholders' benefits of $1.8 billion, an increase in general insurance expenses of $452 million, an increase in the change in group annuity reserves assumed of $403 million and a decrease in premium income of $364 million.

Selected premium income information is presented below:

	Six Months Ended June 30,		
	2017	2016	% Change
	(unaudited)	(unaudited)	
	($ In Millions)		
Premium income:			
Group annuity	$ 4,942	$ 5,277	(6)%
Whole life	2,594	2,344	11
Individual annuity and supplemental contracts	1,081	1,128	(4)
Universal, variable, group and other life	746	991	(25)
Disability income	245	241	2
Other	54	45	20
Total	**$ 9,662**	**$ 10,026**	**(4)%**

Premium income decreased $364 million in 2017, primarily in group annuity, driven by decreases in workplace pension plans totaling $839 million, and in other life of $214 million, partially offset by increases in group annuity pension buyout of $476 million and whole life of $250 million driven by the effect of an increased sales force and a higher level of renewal premium.

Net investment income increased $388 million to $3.5 billion for the six months ended June 30, 2017. The increase was primarily due to higher asset levels, an increase in partnership income of $164 million, as well as a $203 million increase in the dividend received from MassMutual Holding LLC (**"MMHLLC"**), with yields relatively unchanged from the prior year. MassMutual's overall net annualized portfolio yield, less affiliated dividends from MMHLLC, was 4.57% for the six months ended June 30, 2017 and 4.60% for the six months ended June 30, 2016.

Policyholders' benefits, which include payments for supplementary contracts involving life contingencies, matured endowments, death, annuity, disability and surrender benefits and interest, increased $1.8 billion for the six months ended June 30, 2017. The increase was primarily in group annuity, which included higher defined contributions surrenders of $1.0 billion and investment-only product surrenders of $481 million, partially offset by lower defined benefit plan surrenders of $158 million. The increase was also driven by increases in individual annuity surrenders of $233 million and in pension buyout group annuity benefits of $88 million.

Change in policyholders' reserves, including transfers to and from separate accounts, decreased $3.0 billion for the six months ended June 30, 2017. The decrease was primarily due to lower contributions and higher benefits for group annuity and a reduction in the reserves for annuity guarantees, partially offset by increased premium from higher whole life sales and renewals.

The change in group annuity reserves assumed reflects the RPG modified coinsurance assumption contract. This $403 million increase in change in reserves was primarily due to a lower level of transfers from an RPG separate account to a MassMutual contract.

General insurance expenses increased $452 million for the six months ended June 30, 2017. The increase was primarily due to the operating costs related to an increased sales force, the impairment of previously capitalized software and other increases in service, technology and administrative fees.

Commissions increased $55 million for the six months ended June 30, 2017, primarily due to increases in whole life sales.

Dividends to policyholders decreased $35 million for the six months ended June 30, 2017 primarily due to a reduction in the dividend interest rate.

Federal income tax benefits decreased $60 million for the six months ended June 30, 2017. The decrease was primarily due to the current year's non-recognition for tax purposes of the impairment of previously capitalized software, an increase in statutory pretax income, net of intercompany dividends, partially offset by a greater increase in tax basis policyholder reserves than statutory basis reserves relative to 2016.

Net realized capital gains (losses), which include other-than-temporary impairments (**"OTTI"**), comprised the following:

	Six Months Ended June 30,	
	2017	**2016**
	(unaudited)	**(unaudited)**
	(In Millions)	
Net realized capital gains (losses):		
Bonds	$ (57)	$ (117)
Preferred stocks	-	4
Common stocks - subsidiaries and affiliates	9	(2)
Common stocks - unaffiliated	(8)	(25)
Mortgage loans	(10)	(9)
Real estate	28	(1)
Partnerships and LLCs	(57)	(47)
Derivatives	(124)	497
Other	(270)	(25)
Net realized capital (losses) gains before federal and state taxes and deferral to the IMR	(489)	275
Net federal and state tax benefit	155	13
Net realized capital (losses) gains before deferral to the IMR	(334)	288
Net after tax losses (gains) deferred to the IMR	19	(217)
Net realized capital (losses) gains	**$ (315)**	**$ 71**

Net realized capital losses were $315 million for the six months ended June 30, 2017, compared to gains of $71 million in the prior year. The decrease reflects increased losses on derivatives of $621 million and a $271 million loss in 2017 in connection with the tender offer for certain surplus notes, partially offset by an increase in loss deferrals to the interest maintenance reserve **("IMR")** of $236 million, an increase in federal and state tax benefits of $142 million and a decrease in losses on bonds of $60 million.

OTTI decreased $16 million to $95 million for the six months ended June 30, 2017. OTTI decreased $32 million for bonds, $7 million for mortgage loans and $5 million for partnerships and LLCs, partially offset by an increase of $29 million for common stocks. The book values of investments are written down when a decline in value is considered to be other than temporary. OTTI is determined in a disciplined manner using available evidence in both quantitative and qualitative processes.

Residential mortgage-backed exposure

During the six months ended June 30, 2017, there were no significant credit downgrades for the securities held by MassMutual that were backed by residential mortgage pools.

The actual cost reduced by paydowns, carrying value, fair value and related gross realized losses from OTTI of MassMutual's investments with significant Alt-A and subprime exposure were as follows:

	June 30, 2017			Six Months Ended June 30, 2017
	Actual Cost	Carrying Value	Fair Value	OTTI
	(In Millions)			
Alt-A:				
Residential mortgage-backed securities	$ 301	$ 325	$ 393	$ -
Subprime:				
Residential mortgage-backed securities	261	301	362	-
Total subprime	**261**	**301**	**362**	**-**
Total Alt-A and subprime	**$ 562**	**$ 626**	**$ 755**	**$ -**

	December 31, 2016			Year Ended December 31, 2016
	Actual Cost	Carrying Value	Fair Value	OTTI
	(In Millions)			
Alt-A:				
Residential mortgage-backed securities	$ 475	$ 347	$ 422	$ -
Subprime:				
Residential mortgage-backed securities	427	339	403	-
Collateralized debt obligations	3	-	-	-
Total subprime	**430**	**339**	**403**	**-**
Total Alt-A and subprime	**$ 905**	**$ 686**	**$ 825**	**$ -**

Derivative financial instruments

MassMutual uses derivative financial instruments in the normal course of business to manage risks, primarily to reduce currency, interest rate and duration imbalances determined in asset/liability analyses. MassMutual also uses a combination of derivatives and fixed income investments to create synthetic investments. These synthetic investments are created when they are economically more attractive than the actual instrument or when similar instruments are unavailable. Synthetic investments are created either to hedge and reduce MassMutual's credit and foreign currency exposure or to create an investment in a particular asset. MassMutual held synthetic investments with a notional amount of $13.0 billion as of June 30, 2017 and $12.1 billion as of December 31, 2016. These notional amounts included replicated asset transaction values of $11.3 billion as of June 30, 2017 and $10.7 billion as of December 31, 2016, as defined under statutory accounting practices as the result of pairing of a long derivative contract with cash instruments.

MassMutual's principal derivative market risk exposures are interest rate risk, which includes the impact of inflation, and credit risk. Interest rate risk pertains to the change in fair value of the derivative instruments as market interest rates move. MassMutual is exposed to credit-related losses in the event of nonperformance by counterparties to derivative financial instruments. To minimize credit risk for bilateral transactions (individual contracts entered between Mass Mutual and a counterparty), MassMutual and its derivative counterparties generally enter into master netting agreements that allow the use of credit support annexes and require collateral to be posted in the amount owed under each transaction, subject to certain minimums. For over the counter cleared derivative transactions between MassMutual and a counterparty, the parties enter into a series of master netting and other agreements that govern, among other things, clearing and collateral requirements. These transactions are cleared through a clearinghouse and each derivative counterparty is only exposed to the default risk of the clearinghouse. Certain interest rate swaps and credit default swaps are considered cleared transactions. These cleared transactions require initial and daily variation margin collateral postings. These same agreements allow for contracts in a positive position, in which amounts are due to MassMutual, to be offset by contracts in a negative position. This right of offset, combined with collateral obtained from counterparties, reduces MassMutual's credit exposure. Net collateral pledged by the counterparties was $3.2 billion as of June 30, 2017 and $3.3 billion as of December 31, 2016. MassMutual had the right to rehypothecate or repledge securities totaling $780 million of the $3.2 billion as of June 30, 2017 and $998 million of the $3.3 billion as of December 31, 2016, of net collateral pledged by counterparties. There were no securities rehypothecated to other counterparties as of June 30, 2017 and December 31, 2016. In the event of default, the full market value exposure at risk in a net gain position, net of offsets and collateral, was $74 million as of June 30, 2017 and $250 million as of December 31, 2016. The statutory net amount at risk, defined as net collateral pledged and statement values excluding accrued interest, was $610 million as of June 30, 2017 and $747 million as of December 31, 2016. MassMutual regularly monitors counterparty credit ratings, derivative positions, valuations and the value of collateral posted to ensure counterparties are credit-worthy and the concentration of exposure is minimized. MassMutual monitors its derivative credit exposure as part of its overall risk management program.

Analysis of Financial Condition – at June 30, 2017 Compared to at December 31, 2016

The following table sets forth MassMutual's significant assets, liabilities and surplus for the dates presented:

	June 30, 2017 (unaudited)	December 31, 2016	% Change
	($ In Millions)		
Assets:			
Bonds	$ 87,851	$ 83,821	5 %
Preferred stocks	479	465	3
Common stocks – subsidiaries and affiliates	14,212	14,244	-
Common stocks – unaffiliated	1,198	1,120	7
Mortgage loans	22,068	20,961	5
Policy loans	12,752	12,461	2
Real estate	942	977	(4)
Partnerships and LLCs	7,478	7,187	4
Derivatives	9,381	9,763	(4)
Cash, cash equivalents and short-term investments	1,655	3,726	(56)
Other invested assets	185	161	15
Total invested assets	158,201	154,886	2
Investment income due and accrued	2,555	1,914	33
Federal income taxes	433	44	884
Deferred income taxes	1,384	1,606	(14)
Other than invested assets	3,057	3,016	1
Total assets excluding separate accounts	165,630	161,466	3
Separate account assets	66,135	62,204	6
Total assets	**$ 231,765**	**$ 223,670**	**4 %**
Liabilities and Surplus:			
Policyholders' reserves	$ 114,498	$ 112,186	2 %
Liabilities for deposit-type contracts	12,319	11,574	6
Contract claims and other benefits	400	402	-
Policyholders' dividends	1,645	1,609	2
General expenses due or accrued	986	1,121	(12)
Asset valuation reserve	3,314	3,178	4
Repurchase agreements	4,234	4,729	(10)
Commercial paper and other borrowed money	250	250	-
Collateral	2,909	2,839	2
Derivatives	6,063	6,014	1
Other liabilities	3,611	2,150	68
Total liabilities excluding separate accounts	150,229	146,052	3
Separate account liabilities	66,136	62,195	6
Total liabilities	**216,365**	**208,247**	**4**
Surplus	15,400	15,423	-
Total liabilities and surplus	**$ 231,765**	**$ 223,670**	**4 %**

Assets

Total assets increased $8.1 billion as of June 30, 2017, primarily due to increases in bonds of $4.0 billion, separate account assets of $3.9 billion, mortgage loans of $1.1 billion, investment income due and accrued of $641 million, federal income taxes of $389 million and policy loans of $291 million, partially offset by decreases in cash, cash equivalents and short-term investments of $2.1 billion and derivatives of $382 million.

Bonds increased $4.0 billion to $87.9 billion as of June 30, 2017 from $83.8 billion as of December 31, 2016. The increase was primarily due to $3.5 billion of net acquisitions and $500 million of unrealized foreign exchange gains mainly due to the strengthening of the British Pound and Euro against the U.S. Dollar.

Unrealized gains and losses on bonds do not generally impact surplus, because bonds are carried primarily at amortized cost. The total net unrealized gain on bonds as of June 30, 2017 was $4.2 billion, including $4.7 billion of unrealized gains and $497 million of unrealized losses. The total net unrealized gain on bonds as of December 31, 2016 was $2.9 billion, including $3.8 billion of unrealized gains and $901 million of unrealized losses. The increase in the net unrealized gain position on bonds was mainly a result of lower interest rates and credit spreads since December 31, 2016.

The following is a summary of the fair values and gross unrealized losses aggregated by bond category and length of time that the securities were in a continuous unrealized loss position:

	June 30, 2017					
	Less Than 12 Months			**12 Months or Longer**		
	Fair Value	**Unrealized Losses**	**Number of Issuers**	**Fair Value**	**Unrealized Losses**	**Number of Issuers**
	($ In Millions)					
U.S. government and agencies	$ 361	$ 14	13	$ 46	$ 2	4
All other governments	323	6	22	15	1	4
States, territories and possessions	186	5	7	-	-	-
Political subdivisions	59	1	5	9	-	1
Special revenue	722	9	94	36	1	16
Industrial and miscellaneous	19,360	267	1,026	4,363	200	437
Parent, subsidiaries and affiliates	3,200	15	3	170	2	9
Total	**$ 24,211**	**$ 317**	**1,170**	**$ 4,639**	**$ 206**	**471**

The June 30, 2017 gross unrealized losses include $26 million of losses included in the carrying value. These losses include $21 million from National Association of Insurance Commissioners **("NAIC")** Class 6 bonds and $5 million from residential mortgage backed securities **("RMBS")** and commercial mortgage backed securities **("CMBS")** whose ratings were obtained from outside modelers. These losses were primarily included in the industrial and miscellaneous or parent, subsidiaries and affiliates categories.

	December 31, 2016					
	Less Than 12 Months			12 Months or Longer		
	Fair Value	Unrealized Losses	Number of Issuers	Fair Value	Unrealized Losses	Number of Issuers
	($ In Millions)					
U.S. government and agencies	$ 757	$ 51	13	$ 87	$ 3	4
All other governments	451	24	47	20	1	8
States, territories and	63	1	5	42	4	2
Political subdivisions.....	55	2	13	-	-	-
Special revenue.....	779	24	172	41	2	138
Industrial and miscellaneous...	15,535	452	1,257	7,330	324	666
Parent, subsidiaries and	3,878	29	8	409	7	20
Total.....	**$ 21,518**	**$ 583**	**1,515**	**$ 7,929**	**$ 341**	**838**

The December 31, 2016 gross unrealized losses include $23 million of losses included in the carrying value. These losses include $19 million from NAIC Class 6 bonds and $4 million from RMBS and CMBS whose ratings were obtained from outside modelers. These losses were primarily included in the industrial and miscellaneous or parent, subsidiaries and affiliates categories.

Common stocks of subsidiaries and affiliates decreased $32 million to $14.2 billion as of June 30, 2017, primarily due to a decrease in unrealized gains for MMHLLC of $228 million, partially offset by an increase in unrealized gains for MassMutual International of $110 million and C.M. Life Insurance Company of $44 million. The decrease in unrealized gains for MMHLLC is mainly due to the payment of $403 million of dividends to MassMutual, partially offset by income from subsidiaries.

Mortgage loans increased $1.1 billion to $22.1 billion as of June 30, 2017, primarily due to $1.0 billion of net acquisitions and $76 million of net unrealized foreign currency revaluation gains primarily related to the strengthening of the British Pound against the U.S. Dollar, partially offset by $10 million of net realized foreign exchange losses. Residential mortgage loans are primarily seasoned pools of homogeneous residential mortgage loans that are predominantly Federal Housing Administration insured or Veterans Administration guaranteed, though the pools may contain mortgages of subprime credit quality. MassMutual had residential mortgage loan pools with a carrying value of $1.8 billion as of June 30, 2017 and December 31, 2016.

Policy loans increased $291 million to $12.8 billion as of June 30, 2017 primarily due to new loans of $585 million and interest capitalization of $125 million, partially offset by loan repayments and surrenders of $419 million.

Real estate decreased $35 million to $942 million as of June 30, 2017, due to a $120 million net change of sales, depreciation of $51 million and a $9 million increase in encumbrances, partially offset by $145 million of capital improvements.

Partnerships and LLCs increased $291 million to $7.5 billion as of June 30, 2017, primarily due to additional investments of $642 million, earnings of $546 million, unrealized foreign exchange valuation gains of $59 million and mark-to market unrealized gains of $40 million, partially offset by distributions of $693 million and liquidation proceeds of $284 million.

Derivative assets decreased $382 million to $9.4 billion as of June 30, 2017, primarily due to a decrease in foreign currency hedge values resulting from the strengthening of the British Pound and Euro relative to the U.S. Dollar, decreased equity related hedge values resulting from the strengthening of equity markets, and decreased interest related hedge values resulting from the decrease in the swap curve rates, as well as changes in notional amounts related to the repositioning of the portfolio as part of ongoing asset-liability management activity.

Cash, cash equivalents and short-term investments decreased $2.1 billion to $1.7 billion as of June 30, 2017. The decrease was primarily due to net cash applied to investing activities of $4.8 billion, partially offset by net cash from operations of $2.4 billion and net cash used by financing and other sources of $325 million.

Other invested assets increased $24 million to $185 million as of June 30, 2017 due to increases in pending securities settlements and collateral posted to counterparties.

Investment income due and accrued increased $641 million to $2.6 billion as of June 30, 2017. The change is primarily due to income accrual increases in policy loans of $298 million related to policy loans on institutional business, bonds of $208 million, and common stocks of $115 million related to an accrual of a dividend from MMHLLC.

Federal income taxes increased $389 million to $433 million as of June 30, 2017 primarily due to the period's operations and taxable capital loss activity and net tax payments to the Internal Revenue Service associated with an audit advance payment and settle up with MMHLLC for 2016 estimated tax payments.

The deferred income tax assets decreased $222 million to $1.4 billion as of June 30, 2017, primarily due to greater limitations from reductions in both the available inventory of deferred tax items and the ability to realize the available deferred benefits.

Separate account assets increased $3.9 billion to $66.1 billion as of June 30, 2017, primarily due to net market appreciation of $4.3 billion, partially offset by fees of $183 million, net customer cash outflows of $146 million and decreases in pending security settlements of $21 million.

Liabilities

Total liabilities increased $8.1 billion to $216.4 billion as of June 30, 2017, primarily due to increases in separate account liabilities of $3.9 billion, policyholders' reserves of $2.3 billion, other liabilities of $1.5 billion and liabilities for deposit-type contracts of $745 million, partially offset by decreases in repurchase agreements of $495 million.

Policyholders' reserves increased $2.3 billion to $114.5 billion as of June 30, 2017. Whole life products reflected an increase from sales and renewal premium of $2.5 billion, partially offset by reserves released due to benefits of $1.1 billion. Group life products increased $885 million primarily from bank owned life sales, individual annuity products increased $344 million driven by income annuity sales and group annuity products increased $296 million from longevity insurance sales. These increases were partially offset by a decrease in other group annuity products of $815 million, which includes defined benefit, investment-only and workplace pension products primarily due to lower premium and higher surrenders.

Liabilities for deposit-type contracts increased $745 million to $12.3 billion as of June 30, 2017, primarily due to net deposits for medium-term notes and pension buyout of $668 million.

Certain variable annuity contracts include additional death or other insurance benefit features, such as guaranteed minimum death benefits (**"GMDBs"**), guaranteed minimum income benefits (**"GMIBs"**), guaranteed minimum accumulation benefits (**"GMABs"**) and guaranteed minimum withdrawal benefits (**"GMWBs"**). In general, living benefit guarantees require the contract holder or policyholder to adhere to a company-approved asset allocation strategy. Election of these benefits is generally only available at contract issue.

The following shows the liabilities for GMDSs, GMIBs, GMABs and GMWBs (in millions):

Liability as of January 1, 2016	$ 572
Incurred guarantee benefits	84
Paid guarantee benefits	(5)
Liability as of December 31, 2016	651
Incurred guarantee benefits	(98)
Paid guarantee benefits	(2)
Liability as of June 30, 2017	$ 551

MassMutual held reserves for variable annuity guarantees in accordance with the stochastic scenarios as of June 30, 2017 and December 31, 2016. As of June 30, 2017 and December 31, 2016, MassMutual held additional reserves above those indicated based on the stochastic scenarios in order to maintain a prudent level of reserve adequacy.

The following table summarizes the account values, net amount at risk and weighted average attained age for variable annuity contracts with GMDB, GMIB, GMAB and GMWB classified as policyholders' reserves and separate account liabilities. The net amount at risk is defined as the minimum guarantee less the account value calculated on a policy-by-policy basis, but not less than zero.

	June 30, 2017			December 31, 2016		
	Account Value	Net Amount at Risk	Weighted Average Attained Age	Account Value	Net Amount at Risk	Weighted Average Attained Age
	($ In Millions)					
GMDB	$ 19,562	$ 27	63	$ 18,800	$ 36	63
GMIB Basic	904	59	67	894	92	67
GMIB Plus	3,153	478	66	3,059	589	66
GMAB	3,237	12	59	3,158	22	58
GMWB	212	11	69	206	15	69

As of June 30, 2017, the GMDB account value above consisted of $4.1 billion within the general account and $15.5 billion within the separate accounts that includes $4.5 billion of modified coinsurance. As of December 31, 2016, the GMDB account value above consisted of $4.0 billion within the general account and $14.8 billion within the separate accounts that includes $4.2 billion of modified coinsurance.

General expenses due or accrued decreased $135 million as of June 30, 2017, primarily due to the 2017 payout of annual incentive compensation accrued for as of December 31, 2016.

AVR increased $136 million to $3.3 billion as of June 30, 2017. The increase was primarily due to net unrealized capital gains of $221 million and a change in reserve contributions of $112 million, partially offset by an adjustment down to the maximum reserve balance of $104 million and net realized capital losses of $93 million. AVR is a formula driven reserve, the purpose of which is to reduce the surplus volatility of after-tax credit-related realized and unrealized gains and losses. It is calculated based on statement values by asset type, credit quality and reserve factors. AVR can range from zero to a maximum allowable reserve. Any amounts calculated in excess of the maximum allowable reserve will not be included in the calculation of AVR. Any losses that exceed their related component of the AVR will not be absorbed. Changes in statement values, credit quality and capital gains or losses will affect the reserve balance.

Repurchase agreements decreased $495 million to $4.2 billion as of June 30, 2017. Proceeds from repurchase agreements are used in overall portfolio management to help ensure MassMutual has the assets needed to provide yield, spread and duration to support liabilities and other corporate needs. MassMutual increases and decreases repurchase agreements in response to changing market conditions and changing liability needs.

Collateral increased $70 million to $2.9 billion as of June 30, 2017. This increase in collateral liability was consistent with the change in net derivative asset values. In addition, securities that were held as collateral by a trustee off the balance sheet, which MassMutual has the right to rehypothecate or repledge, decreased by $218 million to $780 million as of June 30, 2017 from $998 million as of December 31, 2016. The derivative collateral liability is a function of contractual requirements. When certain threshold exposure levels and transfer amount levels are reached, MassMutual requires additional collateral or returns excess collateral held.

Derivative liabilities increased $49 million to $6.1 billion as of June 30, 2017, primarily due to a decrease in foreign currency hedge values resulting from the strengthening of the British Pound and Euro relative to the U.S. Dollar, partially offset by increased interest related hedge values resulting from the decrease in the swap curve and treasury rates, as well as changes in notional amounts related to the repositioning of the portfolio as part of ongoing asset-liability management activity.

Other liabilities increased $1.5 billion to $3.6 billion as of June 30, 2017, primarily due to a $1.2 billion increase due to timing of policy activity in separate accounts and unsettled investment purchases.

Separate account liabilities increased $3.9 billion to $66.1 billion as of June 30, 2017. See analysis related to separate account assets.

Surplus

Surplus decreased $23 million to $15.4 billion as of June 30, 2017. The following table shows the change in surplus:

	June 30, 2017
	(In Millions)
Beginning surplus	$ 15,423
Net loss	(95)
Change in net unrealized capital gains (losses), net of tax	(198)
Change in net unrealized foreign exchange capital gains (losses), net of tax	411
Change in other net deferred income taxes	2
Change in nonadmitted assets	(24)
Change in AVR	(136)
Change in surplus notes	35
Prior period adjustments	(6)
Other	(12)
Net decrease	(23)
Ending surplus	**$ 15,400**

MassMutual's total adjusted capital, as defined by the NAIC, remained at $17.3 billion as of June 30, 2017 compared to December 31, 2016.

The following table sets forth the calculation of total adjusted capital:

	June 30, 2017	December 31, 2016
	(In Millions)	
Surplus	$ 15,400 [1]	$ 15,423
AVR[2]	3,409	3,264
One-half of the apportioned dividend liability[2]	817	800
Foreign insurance subsidiaries deduction	(2,324)	(2,211)
Total adjusted capital [3]	**$ 17,302**	**$ 17,276**

[1] *Surplus as of June 30, 2017 includes surplus notes with a carrying value of $2,267 million, comprised of the following surplus notes at face value issued and outstanding: $250 million of surplus notes maturing in 2023, $100 million of surplus notes maturing in 2024, $250 million of surplus notes maturing in 2033, $310 million of surplus notes maturing in 2039, $400 million of surplus notes maturing in 2041, $500 million of surplus notes maturing in 2065 and $475 million of surplus notes maturing in 2077.*

[2] *Consolidated for MassMutual, C.M. Life Insurance Company and MML Bay State Life Insurance Company.*

[3] *Defined by the NAIC as surplus plus consolidated AVR and one-half of the consolidated apportioned dividend liability and a deduction for applicable foreign insurance subsidiaries.*

Annex 1

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

CONDENSED STATUTORY FINANCIAL STATEMENTS

As of June 30, 2017 and December 31, 2016 and for the six months ended
June 30, 2017 and 2016

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
CONDENSED STATUTORY FINANCIAL STATEMENTS
(UNAUDITED)

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MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
CONDENSED STATUTORY STATEMENTS OF FINANCIAL POSITION
(UNAUDITED)

	June 30, 2017	December 31, 2016	$ Change	% Change
	($ In Millions)			
Assets:				
Bonds	$ 87,851	$ 83,821	$ 4,030	5 %
Preferred stocks	479	465	14	3
Common stocks – subsidiaries and affiliates	14,212	14,244	(32)	-
Common stocks – unaffiliated	1,198	1,120	78	7
Mortgage loans	22,068	20,961	1,107	5
Policy loans	12,752	12,461	291	2
Real estate	942	977	(35)	(4)
Partnerships and limited liability companies	7,478	7,187	291	4
Derivatives	9,381	9,763	(382)	(4)
Cash, cash equivalents and short-term investments	1,655	3,726	(2,071)	(56)
Other invested assets	185	161	24	15
Total invested assets	158,201	154,886	3,315	2
Investment income due and accrued	2,555	1,914	641	33
Federal income taxes	433	44	389	884
Deferred income taxes	1,384	1,606	(222)	(14)
Other than invested assets	3,057	3,016	41	1
Total assets excluding separate accounts	165,630	161,466	4,164	3
Separate account assets	66,135	62,204	3,931	6
Total assets	$ 231,765	$ 223,670	$ 8,095	4 %
Liabilities and Surplus:				
Policyholders' reserves	$ 114,498	$ 112,186	$ 2,312	2 %
Liabilities for deposit-type contracts	12,319	11,574	745	6
Contract claims and other benefits	400	402	(2)	-
Policyholders' dividends	1,645	1,609	36	2
General expenses due or accrued	986	1,121	(135)	(12)
Asset valuation reserve	3,314	3,178	136	4
Repurchase agreements	4,234	4,729	(495)	(10)
Commercial paper and other borrowed money	250	250	-	-
Collateral	2,909	2,839	70	2
Derivatives	6,063	6,014	49	1
Other liabilities	3,611	2,150	1,461	68
Total liabilities excluding separate accounts	150,229	146,052	4,177	3
Separate account liabilities	66,136	62,195	3,941	6
Total liabilities	216,365	208,247	8,118	4
Surplus	15,400	15,423	(23)	-
Total liabilities and surplus	$ 231,765	$ 223,670	$ 8,095	4 %

NM = not meaningful

See notes to condensed statutory financial statements

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
CONDENSED STATUTORY STATEMENTS OF OPERATIONS
(UNAUDITED)

	June 30, 2017	June 30, 2016	$ Change	% Change
	($ In Millions)			
Revenue:				
Premium income	$ 9,662	$ 10,026	$ (364)	(4) %
Net investment income	3,459	3,071	388	13
Fees and other income	559	433	126	29
Total revenue	13,680	13,530	150	1
Benefits and expenses:				
Policyholders' benefits	10,074	8,266	1,808	22
Change in policyholders' reserves	1,136	4,167	(3,031)	(73)
Change in group annuity reserves assumed	(394)	(797)	403	51
General insurance expenses	1,408	956	452	47
Commissions	497	442	55	12
State taxes, licenses and fees	105	113	(8)	(7)
Total benefits and expenses	12,826	13,147	(321)	(2)
Net gain from operations before dividends and federal income taxes	854	383	471	123
Dividends to policyholders	761	796	(35)	(4)
Net gain (loss) from operations before federal income taxes	93	(413)	506	123
Federal income tax (benefit) expense	(127)	(187)	60	32
Net gain (loss) from operations	220	(226)	446	197
Net realized capital (losses) gains	(315)	71	(386)	(544)
Net loss	$ (95)	$ (155)	$ 60	39 %

NM = not meaningful

See notes to condensed statutory financial statements

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
CONDENSED STATUTORY STATEMENTS OF CHANGES IN SURPLUS
(UNAUDITED)

	June 30, 2017	June 30, 2016	$ Change	% Change
	($ In Millions)			
Surplus, beginning of year	$ 15,423	$ 14,983	$ 440	3 %
Increase (decrease) due to:				
Net loss	(95)	(155)	60	39
Change in net unrealized capital gains (losses), net of tax	(198)	1,903	(2,101)	(110)
Change in net unrealized foreign exchange capital gains (losses), net of tax	411	(158)	569	360
Change in other net deferred income taxes	2	60	(58)	(97)
Change in nonadmitted assets	(24)	(129)	105	81
Change in asset valuation reserve	(136)	(517)	381	74
Change in surplus notes	35	-	35	NM
Prior period adjustments	(6)	(22)	16	73
Other	(12)	-	(12)	NM
Net (decrease) increase	(23)	982	(1,005)	(102)
Surplus, end of period	$ 15,400	$ 15,965	$ (565)	(4) %

NM = not meaningful

See notes to condensed statutory financial statements

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY
CONDENSED STATUTORY STATEMENTS OF CASH FLOWS
(UNAUDITED)

	Six Months Ended June 30, 2017	2016	$ Change	% Change
	($ In Millions)			
Cash from operations:				
Premium and other income collected	$ 9,986	$ 10,453	$ (467)	(4)%
Net investment income	3,084	2,933	151	5
Benefit payments	(10,072)	(8,197)	(1,875)	(23)
Net transfers from separate accounts	1,862	22	1,840	NM
Net receipts from RPG reinsurance agreement	394	797	(403)	(51)
Commissions and other expenses	(1,981)	(1,605)	(376)	(23)
Dividends paid to policyholders	(725)	(765)	40	5
Federal and foreign income taxes (paid) recovered	(107)	227	(334)	(147)
Net cash from operations	2,441	3,865	(1,424)	(37)
Cash from investments:				
Proceeds from investments sold, matured or repaid:				
Bonds	11,554	6,435	5,126	80
Preferred and common stocks – unaffiliated	227	205	22	11
Common stocks – affiliated	200	11	189	NM
Mortgage loans	1,067	1,634	(567)	(35)
Real estate	109	4	105	NM
Partnerships and limited liability companies	587	368	219	60
Derivatives	61	727	(666)	(92)
Other	(388)	(349)	(39)	(11)
Total investment proceeds	13,417	9,035	4,389	49
Cost of investments acquired:				
Bonds	(14,722)	(11,644)	(3,085)	(26)
Preferred and common stocks – unaffiliated	(292)	(220)	(72)	(33)
Common stocks – affiliated	(178)	(680)	502	74
Mortgage loans	(2,090)	(1,420)	(670)	(47)
Real estate	(97)	(88)	(9)	(10)
Partnerships and limited liability companies	(642)	(827)	185	22
Derivatives	(308)	(258)	(50)	(19)
Other	366	276	90	33
Total investments acquired	(17,963)	(14,861)	(3,109)	(21)
Net increase in policy loans	(291)	(208)	(83)	(40)
Net cash from investing activities	(4,837)	(6,034)	1,197	20
Cash from financing and miscellaneous sources:				
Net deposits on deposit-type contracts	668	278	390	140
Net cash provided by surplus notes	35	-	35	NM
Change in repurchase agreements	(495)	(273)	(222)	(81)
Change in collateral	68	1,634	(1,566)	(96)
Other cash provided	49	399	(350)	(88)
Net cash from financing and miscellaneous sources	325	2,038	(1,713)	(84)
Net change in cash, cash equivalents and short-term investments	(2,071)	(131)	$ (1,940)	NM%
Cash, cash equivalents and short-term investments:				
Beginning of year	3,726	3,049	677	22
End of period	$ 1,655	$ 2,918	$ (1,263)	(43)%

NM = not meaningful

See notes to condensed statutory financial statements

1. Nature of operations

Massachusetts Mutual Life Insurance Company (the Company), a mutual life insurance company domiciled in the Commonwealth of Massachusetts, and its domestic life insurance subsidiaries provide individual and group life insurance, disability insurance, individual and group annuities and guaranteed interest contracts (GICs) to individual and institutional customers in all 50 states of the United States of America (U.S.), the District of Columbia and Puerto Rico. Products and services are offered primarily through the Company's MM Financial Advisors (MMFA), Direct to Consumer, Institutional Solutions and Workplace Solutions distribution channels.

MMFA is a sales force that includes financial advisors that operate in the U.S. MMFA sells individual life, individual annuities and disability insurance. The Company's Direct to Consumer distribution channel sells individual life primarily through direct response television advertising, digital media, search engine optimization and search engine marketing. The Company's Institutional Solutions distribution channel sells group annuities, group life and GICs primarily through retirement advisory firms, actuarial consulting firms, investment banks, insurance benefit advisors and investment management companies. The Company's Workplace Solutions distribution channel sells group annuities as well as individual and group life products distributed through investment advisors.

2. Summary of significant accounting policies

a. Basis of presentation

The condensed statutory financial statements have been prepared in conformity with the statutory accounting practices of the National Association of Insurance Commissioners (NAIC) and the accounting practices for The Company prescribed or permitted by the Commonwealth of Massachusetts Division of Insurance (the Division).

The condensed statutory financial statements and notes as of June 30, 2017 and December 31, 2016, and for the six months ended June 30, 2017 and 2016, are unaudited. These condensed statutory financial statements, in the opinion of management, reflect the fair presentation of the financial position, results of operations, changes in surplus and cash flows for the interim periods. These condensed statutory financial statements and notes should be read in conjunction with the statutory financial statements and notes thereto included in the Company's 2016 audited yearend financial statements as these condensed statutory financial statements disclose only significant changes from year end 2016. The results of operations for the interim periods should not be considered indicative of results to be expected for the full year. The Condensed Statutory Statements of Financial Position as of December 31, 2016 have been derived from the audited financial statements at that date, but do not include all of the information and footnotes required by statutory accounting practices for complete financial statements.

For the full description of accounting policies, see *Note 2. "Summary of significant accounting policies"* of Notes to Statutory Financial Statements included in the Company's 2016 audited yearend financial statements.

b. Corrections of errors and reclassifications

For the six months ended June 30, 2017, corrections of prior year errors were recorded in surplus, net of tax:

	Increase (Decrease) to:		Correction
	Prior Years Net Income	Current Year Surplus	of Asset or Liability Balances
	(In Millions)		
Partnerships and limited liability companies	$ -	$ (2)	$ (2)
Cash, cash equivalents and short-term investments	(9)	(9)	(9)
Other than invested assets	(1)	(1)	(1)
Policyholders' reserves	5	5	(5)
Total	$ (5)	$ (7)	$ (17)

Of the $7 million decrease to surplus for prior year errors, $5 million was recorded as prior period adjustments and $2 million recorded as a change in nonadmitted assets, net of tax in the Condensed Statutory Statements of Changes in Surplus.

For the six months ended June 30, 2016, corrections of prior year errors were recorded in surplus, net of tax:

	Increase (Decrease) to:		Correction
	Prior Years Net Income	Current Year Surplus	of Asset or Liability Balances
	(In Millions)		
Federal income tax receivable	$ (19)	$ (19)	$ 19
Partnerships and limited liability companies	-	(5)	5
Total	$ (19)	$ (24)	$ 24

Of the $24 million decrease to surplus for prior year errors, $19 million was recorded as prior period adjustments and $5 million was recorded as a change in net unrealized capital gains (losses), net of tax in the Condensed Statutory Statements of Changes in Surplus.

Certain prior year amounts within these financial statements have been reclassified to conform to the current year presentation.

c. Common stocks – subsidiaries and affiliates

Common stocks of unconsolidated subsidiaries, primarily C.M. Life Insurance Company (C.M. Life), MML Bay State Life Insurance Company (MML Bay State), MMHLLC and MassMutual International LLC (MMI), are accounted for using the statutory equity method. The Company accounts for the value of MMHLLC and MMI at its underlying U.S. GAAP equity value adjusted to remove certain nonadmitted and intangible assets. MMHLLC's value is also adjusted by a portion of its noncontrolling interests (NCI) and appropriated retained earnings, after consideration of MMHLLC's fair value and the Company's capital levels. The Division has affirmed the statutory recognition of the Company's application of the NCI guidelines in MMHLLC's statutory carrying value. However, the Company has limited this recognition to $2,582 million as of June 30, 2017 and $2,675 million as of December 31, 2016. Operating results, less dividend distributions, for MMHLLC are reflected as net unrealized capital gains (losses) in the Statutory Statements of Changes in Surplus. Dividend distributions declared from MMHLLC are recorded in net investment income and are limited to MMHLLC's U.S. GAAP retained earnings. The cost basis of common stocks – subsidiaries and affiliates is adjusted for impairments deemed to be other than temporary.

Refer to *Note 4b. "Common stocks – subsidiaries and affiliates"* for further information on the valuation of MMHLLC and MMI.

3. New accounting standards

Adoption of new accounting standards

In April 2016, the NAIC adopted modifications to SSAP No. 41, *Surplus Notes*, which were effective January 1, 2017. These modifications required that the surplus notes with a designation equivalent to NAIC 3 through 6 be reported at the lesser of amortized cost or fair value. Currently these surplus notes are reported at amortized cost. The modifications also incorporate guidance to clarify when surplus notes shall be nonadmitted, an unrealized loss should be recognized, and an other-than-temporary (OTTI) assessment should be performed. These modifications did not have an impact on the Company's financial statements.

In June 2016, the NAIC adopted modifications to SSAP No. 26, *Bonds, Excluding Loan-backed and Structured Securities*, and SSAP No. 43R, *Loan-backed and Structured Securities*, which were effective January 1, 2017 and should be prospectively applied. These modifications clarified that the amount of prepayment penalties or acceleration fees reported as investment income should equal the total proceeds received less the par value of the investment; and any difference between the carrying value and the par value at the time of disposal will be reported as realized capital gains and losses. These modifications also added specific disclosures related to securities sold, redeemed or otherwise disposed of as a result of a callable feature. These modifications did not have a significant impact on the Company's financial statements.

In June 2016, the NAIC adopted modifications to SSAP No. 103R, *Transfers and Servicing of Financial Assets and Extinguishment of Liabilities*, which were effective January 1, 2017. These modifications required that obligations to deliver securities resulting from short sales be accounted for as contra-assets, and measured at fair value with changes in fair value recognized as unrealized gains and losses. The modifications also required new disclosures about short sale transactions. The unrealized gains and losses are realized upon settlement of the short sale obligation. Interest on short sale positions is accrued periodically and reported as interest expense. These modifications did not have an impact on the Company's financial statements.

In June 2016, the NAIC adopted substantive revisions to SSAP No. 51, *Life Contracts*, to incorporate references to the Valuation Manual (VM) and to facilitate the implementation of 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.51 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 August 2016, the NAIC adopted modifications to SSAP No. 51, *Life Contracts*, which were effective January 1, 2017. These modifications clarified that annual assumption changes from reserving methods used in principles-based reserving (PBR) would not qualify as a change in valuation basis. Changes in valuation basis are recorded directly to surplus instead of through income. These modifications were made to accommodate PBR which became effective January 1, 2017. These modifications did not have an impact on the Company's financial statements.

In June 2017, the NAIC adopted modifications to SSAP No. 30, *Investment in Common Stock*, SSAP No. 48, *Joint Ventures, Partnerships and Limited Liability Method of Accounting*, and SSAP No. 97, *Investments in Subsidiary Controlled and Affiliated Entities* as they relate to ASU 2016-07, *Simplifying the Transition to the Equity Method of Accounting* which were effective January 1, 2017. These modifications included the definition of control and provided guidance as to when an investment qualified (or no longer qualifies) for the equity method of accounting. These modifications further specified that when the level of investment in a subsidiary, controlled or affiliated (SCA) entity fell below the level of control, defined as the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of the investee in SSAP No. 97, the reporting entity should discontinue the use of the equity method of accounting. When an entity becomes qualified to use the equity method of accounting, the entity should add the cost of acquiring the additional interest in the investee to the current basis of the previously held interest and apply the equity method of accounting, prospectively. The Company has adopted these modifications.

Future adoption of new accounting standards

In December 2016, the NAIC adopted modifications to SSAP No. 2R, *Cash, Drafts, and Short-Term Investments*, which will be effective December 31, 2017. These modifications require that money market mutual funds shall be (a) reclassified from short-term investments to cash equivalents and (b) valued at fair value or NAV as a practical expedient. The adoption of these modifications is not expected to have an impact on the Company's financial statements.

In April 2017, the NAIC adopted modifications to SSAP No. 26R, *Bonds*, which will be effective December 31, 2017. These modifications are part of an ongoing investment classification project. These modifications (a) provide a definition of a security, (b) update the description of bonds included in scope of the guidance, and (c) require fair value accounting for certain Securities Valuation Office identified investments, such as bond exchange traded funds, unless a systematic value has been elected. While the scope specifically includes bank loans acquired through participation, syndication or assignment, additional guidance on bank loans is being redeliberated as a separate topic. The Company is currently assessing the impact of these modifications on the Company's financial statements.

In April 2017, the NAIC adopted modifications to SSAP No. 69, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments*, to adopt ASU No. 2016-15, *Classification of Certain Cash Receipts and Cash Payments*, in its entirety, including the related effective date and transition guidance which will be effective January 1, 2018 with early adoption permitted. These modifications address the classification of: (a) debt prepayment or extinguishment costs; (b) interest accretion and principal payment on zero coupon debt; (c) contingent consideration payments made after a business combination; (d) proceeds from the settlement of insurance claims; (e) proceeds from the settlement of corporate owned life insurance (COLI) policies; (f) distributions received from equity method investees; (g) beneficial interest in securitization transactions; and (h) separately identifiable cash flows and the application of the predominance principle. The Company is currently assessing the impact of these modifications on its financial statements.

In June 2017, the NAIC adopted modifications to SSAP No. 37, *Mortgage Loans*, which will be effective by December 31, 2017. These modifications clarify that a reporting entity providing a mortgage loan as a "participant in a mortgage loan agreement", should consider the mortgage loan in scope of SSAP No. 37. In addition to clarifying that these mortgage loans are not securities and are in scope of SSAP No. 37, these modifications further clarify the impairment assessment for these mortgage loans and incorporate disclosures for these structures, including additional disclosures to identify mortgage loans in which the insurer is a participant or co-lender. These modifications will require additional disclosures on the Company's financial statements.

4. Investments

The Company maintains a diversified investment portfolio. Investment policies limit concentration in any asset class, geographic region, industry group, economic characteristic, investment quality or individual investment.

a. Bonds

The carrying value and fair value of bonds were as follows:

	June 30, 2017			
	Carrying Value	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(In Millions)			
U.S. government and agencies	$ 6,944	$ 607	$ 16	$ 7,535
All other governments	1,073	66	7	1,132
States, territories and possessions	639	57	5	691
Political subdivisions	487	40	1	526
Special revenue	5,647	679	11	6,315
Industrial and miscellaneous	67,273	3,115	442	69,946
Parent, subsidiaries and affiliates	5,788	138	15	5,911
Total	$ 87,851	$ 4,702	$ 497	$ 92,056

The June 30, 2017 gross unrealized losses exclude $26 million of losses included in the carrying value. These losses include $21 million from NAIC Class 6 bonds and $5 million from residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS) whose ratings were obtained from outside modelers. These losses were primarily included in industrial and miscellaneous or parent, subsidiaries and affiliates.

	December 31, 2016			
	Carrying Value	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(In Millions)			
U.S. government and agencies	$ 6,819	$ 562	$ 54	$ 7,327
All other governments	924	37	27	934
States, territories and possessions	676	52	5	723
Political subdivisions	483	33	2	514
Special revenue	5,605	588	26	6,167
Industrial and miscellaneous	62,806	2,427	755	64,478
Parent, subsidiaries and affiliates	6,508	128	32	6,604
Total	$ 83,821	$ 3,827	$ 901	$ 86,747

The December 31, 2016 gross unrealized losses exclude $23 million of losses included in the carrying value. These losses include $19 million from NAIC Class 6 bonds and $4 million from RMBS and CMBS whose ratings were obtained from outside modelers. These losses were primarily included in industrial and miscellaneous or parent, subsidiaries and affiliates.

Sales proceeds and related gross realized capital gains (losses) from bonds were as follows:

	Six Months Ended June 30,	
	2017	2016
	(In Millions)	
Proceeds from sales	$ 5,261	$ 2,561
Gross realized capital gains from sales	60	65
Gross realized capital losses from sales	(99)	(129)

The following is a summary of the fair values and gross unrealized losses aggregated by bond category and length of time that the securities were in a continuous unrealized loss position:

	June 30, 2017					
	Less Than 12 Months			12 Months or Longer		
	Fair Value	Unrealized Losses	Number of Issuers	Fair Value	Unrealized Losses	Number of Issuers
	($ In Millions)					
U.S. government and agencies	$ 361	$ 14	13	$ 46	$ 2	4
All other governments	323	6	22	15	1	4
States, territories and possessions	186	5	7	-	-	-
Political subdivisions	59	1	5	9	-	1
Special revenue	722	9	94	36	1	16
Industrial and miscellaneous	19,360	267	1,026	4,363	200	437
Parent, subsidiaries and affiliates	3,200	15	3	170	2	9
Total	$ 24,211	$ 317	1,170	$ 4,639	$ 206	471

The June 30, 2017 unrealized losses include $26 million of losses included in the carrying value. These losses include $21 million from NAIC Class 6 bonds and $5 million from RMBS and CMBS whose ratings were obtained from outside modelers. These losses were primarily included in industrial and miscellaneous or parent, subsidiaries and affiliates.

	December 31, 2016					
	Less Than 12 Months			12 Months or Longer		
	Fair Value	Unrealized Losses	Number of Issuers	Fair Value	Unrealized Losses	Number of Issuers
	($ In Millions)					
U.S. government and agencies	$ 757	$ 51	13	$ 87	$ 3	4
All other governments	451	24	47	20	1	8
States, territories and possessions	63	1	5	42	4	2
Political subdivisions	55	2	13	-	-	-
Special revenue	779	24	172	41	2	138
Industrial and miscellaneous	15,535	452	1,257	7,330	324	666
Parent, subsidiaries and affiliates	3,878	29	8	409	7	20
Total	$ 21,518	$ 583	1,515	$ 7,929	$ 341	838

The December 31, 2016 gross unrealized losses include $23 million of losses included in the carrying value. These losses include $19 million from NAIC Class 6 bonds and $4 million from RMBS and CMBS whose ratings were obtained from outside modelers. These losses were primarily included in industrial and miscellaneous or parent, subsidiaries and affiliates.

As of June 30, 2017 and December 31, 2016, management has not deemed these unrealized losses to be other than temporary because the investment's carrying value is expected to be realized and the Company has the ability and intent not to sell these investments until recovery, which may be at maturity.

As of June 30, 2017, investments in structured and loan-backed securities that had unrealized losses, which were not recognized in earnings, had a fair value of $5,852 million. Securities in an unrealized loss position for less than 12 months had a fair value of $3,377 million and unrealized losses of $25 million. Securities in an unrealized loss position for greater than 12 months had a fair value of $2,475 million and unrealized losses of $66 million. These securities were primarily categorized as industrial and miscellaneous or parent, subsidiaries and affiliates.

As of December 31, 2016, investments in structured and loan-backed securities that had unrealized losses, which were not recognized in earnings, had a fair value of $7,939 million. Securities in an unrealized loss position for less than 12 months had a fair value of $3,270 million and unrealized losses of $62 million. Securities in an unrealized loss position for greater than 12 months had a fair value of $4,669 million and unrealized losses of $103 million. These securities were primarily categorized as industrial and miscellaneous or parent, subsidiaries and affiliates.

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. The Company did not sell any securities with the NAIC Designation 3 or below for the six months ended June 30, 2017 or for the year ended December 31, 2016, that were reacquired within 30 days of the sale date.

Residential mortgage-backed exposure

RMBS are included in the U.S. government and agencies, special revenue, and industrial and miscellaneous bond categories. The Alt-A category includes option adjustable-rate mortgages and the subprime category includes 'scratch and dent' or reperforming pools, high loan-to-value pools, and pools where the borrowers have very impaired credit but the average loan-to-value is low, typically 70% or below. In identifying Alt-A and subprime exposure, management used a combination of qualitative and quantitative factors, including FICO scores and loan-to-value ratios.

As of June 30, 2017, RMBS had a total carrying value of $1,374 million and a fair value of $1,568 million, of which approximately 24%, based on carrying value, was classified as Alt-A. Alt-A and subprime RMBS had a total carrying value of $626 million and a fair value of $755 million.

As of December 31, 2016, RMBS had a total carrying value of $1,516 million and a fair value of $1,728 million, of which approximately 23%, based on carrying value, was classified as Alt-A. Alt-A and subprime RMBS had a total carrying value of $686 million and a fair value of $825 million.

b. Common stocks – subsidiaries and affiliates

The MMHLLC statutory carrying values consist of $8,768 million as of June 30, 2017 and $8,870 million as of December 31, 2016. The MMI statutory carrying values consist of $2,321 million as of June 30, 2017 and $2,211 million as of December 31, 2016.

On July 1, 2016, the Company's purchase of MSI Financial Services (MSIFS) was accounted for under the statutory purchase method, classified as investments in common stocks – subsidiaries and affiliates at a cost of $126 million which included the recognition of statutory goodwill of $38 million. In 2017, the Company contributed MSIFS to MMHLLC at carrying value of $115 million which excluded the remaining unamortized statutory goodwill of $35 million. The remaining unamortized statutory goodwill was transferred from the Company's carrying value of MSIFS to its carrying value of MMHLLC. MSIFS was subsequently merged with MMHLLC's other broker dealer, MML Investor Services.

The Company recorded dividends in net investment income, from MMHLLC of $403 million through the six months ended June 30, 2017 and $200 million through the six months ended June 30, 2016.

The Company contributed additional capital of $20 million to MMHLLC through the six months ended June 30, 2017 and $669 million through the six months ended June 30, 2016. As part of last year's capital contributions, the Company contributed nine investments with a book value of $670 million to MMHLLC during the first quarter of 2016. This contribution was recorded at book value, and accordingly, there was no gain or loss recognized.

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

c. Mortgage loans

Mortgage loans comprised commercial mortgage loans and residential mortgage loans. The Company's commercial mortgage loans primarily finance various types of real estate properties throughout the U.S., the United Kingdom and Canada. The Company holds commercial mortgage loans for which it is the primary lender and mezzanine loans that are subordinate to senior secured first liens. Residential mortgage loans are primarily seasoned pools of homogeneous residential mortgage loans substantially backed by Federal Housing Administration (FHA) and Veterans Administration (VA) guarantees.

The carrying value and fair value of the Company's mortgage loans were as follows:

	June 30, 2017		December 31, 2016	
	Carrying Value	Fair Value	Carrying Value	Fair Value
	(In Millions)			
Commercial mortgage loans:				
Primary lender	$ 20,215	$ 20,787	$ 19,122	$ 19,588
Mezzanine loans	36	37	71	72
Total commercial mortgage loans	20,251	20,824	19,193	19,660
Residential mortgage loans:				
FHA insured and VA guaranteed	1,812	1,778	1,763	1,723
Other residential loans	5	5	5	5
Total residential mortgage loans	1,817	1,783	1,768	1,728
Total mortgage loans	$ 22,068	$ 22,607	$ 20,961	$ 21,388

As of June 30, 2017, the Company had no impaired mortgage loans with or without a valuation allowance.

The following presents a summary of the Company's impaired mortgage loans as of June 30, 2016:

	Carrying Value	Average Carrying Value	Unpaid Principal Balance	Valuation Allowance	Interest Income
	(In Millions)				
With no allowance recorded:					
Commercial mortgage loans:					
Primary lender	$ 6	$ 9	$ 13	$ -	$ -

The following presents changes in the valuation allowance recorded for the Company's commercial mortgage loans:

	Six Months Ended June 30,	
	2017	2016
	Primary Lender	
	(In Millions)	
Beginning balance	$ (3)	$ -
Additions	-	(5)
Decreases	3	-
Write-downs	-	5
Ending balance	$ -	$ -

d. Derivatives

The Company uses derivative financial instruments in the normal course of business to manage risks, primarily to reduce currency, interest rate and duration imbalances determined in asset/liability analyses. The Company also uses a combination of derivatives and fixed income investments to create synthetic investments. These synthetic investments are created when they are economically more attractive than the actual instrument or when similar instruments are unavailable. Synthetic investments are created either to hedge and reduce the Company's credit and foreign currency exposure or to create an investment in a particular asset. The Company held synthetic investments with a notional amount of $12,969 million as of June 30, 2017 and $12,083 million as of December 31, 2016. These notional amounts included replicated asset transaction values of $11,349 million as of June 30, 2017 and $10,739 million as of December 31, 2016, as defined under statutory accounting practices as the result of pairing of a long derivative contract with cash instruments.

The Company's principal derivative market risk exposures are interest rate risk, which includes the impact of inflation, and credit risk. Interest rate risk pertains to the change in fair value of the derivative instruments as market interest rates move. The Company is exposed to credit-related losses in the event of nonperformance by counterparties to derivative financial instruments. To minimize credit risk for bilateral transactions (individual contracts entered between the Company and a counterparty), the Company and its derivative counterparties generally enter into master netting agreements that allow the use of credit support annexes and require collateral to be posted in the amount owed under each transaction, subject to certain minimums. For over the counter cleared derivative transactions between the Company and a counterparty, the parties enter into a series of master netting and other agreements that govern, among other things, clearing and collateral requirements. These transactions are cleared through a clearinghouse and each derivative counterparty is only exposed to the default risk of the clearinghouse. Certain interest rate swaps and credit default swaps are considered cleared transactions. These cleared transactions require initial and daily variation margin collateral postings. These same agreements allow for contracts in a positive position, in which amounts are due to the Company, to be offset by contracts in a negative position. This right of offset, combined with collateral obtained from counterparties, reduces the Company's credit exposure. Net collateral pledged by the counterparties was $3,161 million as of June 30, 2017 and $3,274 million as of December 31, 2016. The Company had the right to rehypothecate or repledge securities totaling $780 million of the $3,161 million as of June 30, 2017 and $998 million of the $3,274 million as of December 31, 2016 of net collateral pledged by counterparties. There were no securities rehypothecated to other counterparties as of June 30, 2017 and December 31, 2016. In the event of default, the full market value exposure at risk in a net gain position, net of offsets and collateral, was $74 million as of June 30, 2017 and $250 million as of December 31, 2016. The statutory net amount at risk, defined as net collateral pledged and statement values excluding accrued interest, was $610 million as of June 30, 2017 and $747 million as of December 31, 2016. The Company regularly monitors counterparty credit ratings, derivative positions, valuations and the value of collateral posted to ensure counterparties are credit-worthy and the concentration of exposure is minimized. The Company monitors its derivative credit exposure as part of its overall risk management program.

The following summarizes the carrying values and notional amounts of the Company's derivative financial instruments:

	June 30, 2017			
	Assets		Liabilities	
	Carrying Value	Notional Amount	Carrying Value	Notional Amount
	(In Millions)			
Interest rate swaps	$ 7,952	$ 70,386	$ 5,832	$ 88,839
Options	699	7,687	8	883
Currency swaps	683	5,491	146	3,852
Forward contracts	8	910	75	5,479
Credit default swaps	39	2,420	2	106
Financial futures	-	3,386	-	-
Total	$ 9,381	$ 90,280	$ 6,063	$ 99,159

	December 31, 2016			
	Assets		Liabilities	
	Carrying Value	Notional Amount	Carrying Value	Notional Amount
	(In Millions)			
Interest rate swaps	$ 8,084	$ 71,560	$ 5,915	$ 86,362
Options	653	6,677	6	5
Currency swaps	937	6,834	36	1,068
Forward contracts	51	3,320	56	2,817
Credit default swaps	38	2,435	1	207
Financial futures	-	3,196	-	-
Total	$ 9,763	$ 94,022	$ 6,014	$ 90,459

In most cases, notional amounts are not a measure of the Company's credit exposure. However, notional amounts are a measure of the Company's credit exposure for credit default swaps that are in the form of a replicated asset and mortgage-backed forwards. For these swaps and forwards, the Company is fully exposed to notional amounts of $4,075 million as of June 30, 2017 and $3,729 million as of December 31, 2016.

The collateral amounts exchanged are calculated on the basis of the notional amounts and the other terms of the instruments, which relate to interest rates, exchange rates, security prices or financial or other indices.

The average fair value of outstanding derivative assets was $9,414 million for the six months ended June 30, 2017 and $12,749 million for the six months ended June 30, 2016. The average fair value of outstanding derivative liabilities was $5,873 million for the six months ended June 30, 2017 and $9,040 million for the six months ended June 30, 2016.

The following summarizes the notional amounts of the Company's credit default swaps by contractual maturity:

	June 30, 2017	December 31, 2016
	(In Millions)	
Due in one year or less	$ 27	$ 198
Due after one year through five years	2,499	2,444
Total	$ 2,526	$ 2,642

The following summarizes the Company's net realized gains (losses) on closed contracts and change in net unrealized gains (losses) related to market fluctuations on open contracts by derivative type:

	Six Months Ended June 30,			
	2017		2016	
	Net Realized Gains on Closed Contracts	Change In Net Unrealized Gains (Losses) on Open Contracts	Net Realized Gains (Losses) on Closed Contracts	Change In Net Unrealized Gains (Losses) on Open Contracts
	(In Millions)			
Interest rate swaps	$ (166)	$ (47)	$ (1)	$ 332
Currency swaps	57	(363)	11	290
Options	(60)	(82)	(12)	112
Credit default swaps	10	1	(5)	1
Forward contracts	(72)	(62)	64	70
Financial futures	107	-	440	-
Total	$ (124)	$ (553)	$ 497	$ 805

The following summarizes gross and net information of derivative assets and liabilities, along with collateral posted in connection with master netting agreements:

	June 30, 2017			December 31, 2016		
	Derivative Assets	Derivative Liabilities	Net	Derivative Assets	Derivative Liabilities	Net
	(In Millions)					
Gross	$ 9,381	$ 6,063	$ 3,318	$ 9,763	$ 6,014	$ 3,749
Due and accrued	844	1,694	(850)	842	1,626	(784)
Gross amounts offset	(7,049)	(7,049)	-	(6,873)	(6,873)	-
Net asset	3,176	708	2,468	3,732	767	2,965
Collateral posted	(3,688)	(527)	(3,161)	(3,803)	(529)	(3,274)
Net	$ (512)	$ 181	$ (693)	$ (71)	$ 238	$ (309)

e. Net investment income

Net investment income, including interest maintenance reserve (IMR) amortization, comprised the following:

	Six Months Ended June 30,	
	2017	2016
	(In Millions)	
Bonds	$ 1,797	$ 1,734
Preferred stocks	3	9
Common stocks - subsidiaries and affiliates	405	201
Common stocks - unaffiliated	19	33
Mortgage loans	461	505
Policy loans	385	370
Real estate	88	88
Partnerships and LLCs	379	215
Derivatives	151	161
Cash, cash equivalents and short-term investments	19	15
Other	7	(3)
Subtotal investment income	3,714	3,328
Amortization of the IMR	58	65
Investment expenses	(313)	(322)
Net investment income	$ 3,459	$ 3,071

f. Net realized capital (losses) gains

Net realized capital (losses) gains, which include OTTI and are net of deferral to the IMR, comprised the following:

	Six Months Ended June 30,	
	2017	2016
	(In Millions)	
Bonds	$ (57)	$ (117)
Preferred stocks	-	4
Common stocks - subsidiaries and affiliates	9	(2)
Common stocks - unaffiliated	(8)	(25)
Mortgage loans	(10)	(9)
Real estate	28	(1)
Partnerships and LLCs	(57)	(47)
Derivatives	(124)	497
Other	(270)	(25)
Net realized capital (losses) gains before federal and state taxes and deferral to the IMR	(489)	275
Net federal and state tax benefit	155	13
Net realized capital (losses) gains before deferral to the IMR	(334)	288
Net after tax losses (gains) deferred to the IMR	19	(217)
Net realized capital (losses) gains	$ (315)	$ 71

As of June 30, 2017, IMR had an asset balance of $81 million which was nonadmitted. The IMR liability balance was $5 million as of December 31, 2016 and was included in other liabilities on the Condensed Statutory Statements of Financial Position. Refer to *Note 13. "Surplus notes"* for information on the other realized capital loss.

OTTI, included in the realized capital losses, consisted of the following:

	Six Months Ended June 30,	
	2017	2016
	(In Millions)	
Bonds	$ (19)	$ (51)
Common stocks	(37)	(8)
Preferred stocks	-	(1)
Mortgage loans	-	(7)
Partnerships and LLCs	(39)	(44)
Total OTTI	$ (95)	$ (111)

The Company recognized OTTI of $1 million for the six months ended June 30, 2017 and $3 million for the six months ended June 30, 2016 on structured and loan-backed securities, which are included in bonds, primarily due to the present value of expected cash flows being less than the amortized cost.

5. Federal income taxes

No significant changes.

6. Other than invested assets

Fixed assets

In March 2017, the Company recorded an impairment on previously capitalized software costs of $221 million. This impairment was recorded as general insurance expenses in the Condensed Statutory Statements of Operations. This impairment did not impact surplus, as the asset was previously nonadmitted.

7. Policyholders' liabilities

Certain variable annuity contracts include additional death or other insurance benefit features, such as guaranteed minimum death benefits (GMDBs), guaranteed minimum income benefits (GMIBs), guaranteed minimum accumulation benefits (GMABs) and guaranteed minimum withdrawal benefits (GMWBs). In general, living benefit guarantees require the contract holder or policyholder to adhere to a company-approved asset allocation strategy. Election of these benefits is generally only available at contract issue.

The following shows the changes in the liabilities for GMDBs, GMIBs, GMABs and GMWBs (in millions):

Liability as of January 1, 2016	$ 572
Incurred guarantee benefits	84
Paid guarantee benefits	(5)
Liability as of December 31, 2016	651
Incurred guarantee benefits	(98)
Paid guarantee benefits	(2)
Liability as of June 30, 2017	$ 551

The Company held reserves in accordance with the stochastic scenarios as of June 30, 2017 and December 31, 2016. As of June 30, 2017 and December 31, 2016, the Company held additional reserves above those indicated based on the stochastic scenarios in order to maintain a prudent level of reserve adequacy.

The following summarizes the account values, net amount at risk and weighted average attained age for variable annuity contracts with GMDBs, GMIBs, GMABs and GMWBs classified as policyholders' reserves and separate account liabilities. The net amount at risk is defined as the minimum guarantee less the account value calculated on a policy-by-policy basis, but not less than zero.

	June 30, 2017			December 31, 2016		
	Account Value	Net Amount at Risk	Weighted Average Attained Age	Account Value	Net Amount at Risk	Weighted Average Attained Age
	($ In Millions)					
GMDB	$ 19,562	$ 27	63	$ 18,800	$ 36	63
GMIB Basic	904	59	67	894	92	67
GMIB Plus	3,153	478	66	3,059	589	66
GMAB	3,237	12	59	3,158	22	58
GMWB	212	11	69	206	15	69

As of June 30, 2017, the GMDB account value above consists of $4,073 million within the general account and $15,489 million within separate accounts that includes $4,507 million of modified coinsurance assumed. As of December 31, 2016, the GMDB account value above consists of $4,024 million within the general account and $14,776 million within separate accounts that includes $4,247 million of modified coinsurance assumed.

8. Reinsurance

No significant changes.

9. Withdrawal characteristics

No significant changes.

10. Debt

No significant changes.

11. Employee benefit plans

The Company sponsors multiple employee benefit plans, providing retirement, life, health and other benefits to employees, certain employees of unconsolidated subsidiaries, agents, general agents and retirees who meet plan eligibility requirements.

a. Net periodic cost

The net periodic cost represents the annual accounting income or expense recognized by the Company and is included in general insurance expenses in the Condensed Statutory Statements of Operations. The net periodic cost recognized is as follows:

	Six Months Ended June 30,			
	2017	2016	2017	2016
	Pension Benefits		Other Postretirement Benefits	
	(In Millions)			
Service cost	$ 63	$ 43	$ 6	$ 6
Interest cost	56	56	7	6
Expected return on plan assets	(74)	(72)	-	-
Amortization of unrecognized net actuarial and other losses	33	35	1	2
Amortization of unrecognized prior service cost	2	2	(3)	(3)
Total net periodic cost	$ 80	$ 64	$ 11	$ 11

12. Employee compensation plans

No significant changes.

13. Surplus notes

The Company executed a tender offer in March 2017 for $440 million par value of surplus notes maturing in 2039. The Company paid $711 million of cash to settle the tender offer which resulted in a pre-tax loss of $271 million. This loss is included in net realized gains (losses) within the Condensed Statutory Statements of Operations and other costs of investments acquired within the Condensed Statutory Statements of Cash Flows and is net of a tax benefit of $95 million.

The following table summarizes the surplus notes issued and outstanding as of June 30, 2017:

Issue Date	Face Amount	Carrying Value	Interest Rate	Maturity Date	Scheduled Annual Interest Payment Dates
	($ In Millions)				
11/15/1993	$ 250	$ 250	7.625%	11/15/2023	May 15 & Nov 15
03/01/1994	100	100	7.500%	03/01/2024	Mar 1 & Sept 1
05/12/2003	250	249	5.625%	05/15/2033	May 15 & Nov 15
06/01/2009	310	307	8.875%	06/01/2039	Jun 1 & Dec 1
01/17/2012	400	399	5.375%	12/01/2041	Jun 1 & Dec 1
04/15/2015	500	491	4.500%	04/15/2065	Apr 15 & Oct 15
03/20/2017	475	471	4.900%	04/01/2077	Apr 1 & Oct 1
Total	$ 2,285	$ 2,267			

14. Presentation of the Condensed Statutory Statements of Cash Flows

The following table presents those transactions that have affected the Company's recognized assets or liabilities but have not resulted in cash receipts or payments during the six months ended June 30, 2017 and 2016. Accordingly, the Company has excluded these non-cash activities from the Condensed Statutory Statements of Cash Flows for the six months ended June 30, 2017 and 2016.

	Six Months Ended June 30, 2017	2016
	(In Millions)	
Bond conversions and refinancing	$ 399	$ 157
Bonds received as consideration for a group annuity contract	271	-
Transfer of affiliated common stock	103	-
Other invested assets to bonds	94	3
Partnerships and LLCs contributed to MMHLLC	-	682
Stock distributions from partnerships and LLCs	-	101
Other	77	36

15. Fair value of financial instruments

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

	June 30, 2017				
	Carrying Value	Fair Value	Level 1	Level 2	Level 3
	(In Millions)				
Financial assets:					
Bonds:					
U. S. government and agencies	$ 6,944	$ 7,535	$ -	$ 7,531	$ 4
All other governments	1,073	1,132	-	1,061	71
States, territories and possessions	639	691	-	691	-
Political subdivisions	487	526	-	526	-
Special revenue	5,647	6,315	-	6,305	10
Industrial and miscellaneous	67,273	69,946	-	41,862	28,084
Parent, subsidiaries and affiliates	5,788	5,911	-	479	5,432
Preferred stocks	479	499	43	-	456
Common stocks - subsidiaries and affiliates	600	600	495	-	105
Common stocks - unaffiliated	1,198	1,198	914	-	284
Mortgage loans - commercial	20,251	20,824	-	-	20,824
Mortgage loans - residential	1,817	1,783	-	-	1,783
Derivatives:					
Interest rate swaps	7,952	8,567	-	8,567	-
Options	699	699	-	699	-
Currency swaps	683	683	-	683	-
Forward contracts	8	14	-	14	-
Credit default swaps	39	46	-	46	-
Cash, cash equivalents and short-term investments	1,655	1,655	103	1,552	-
Separate account assets	66,135	66,135	42,693	22,689	753
Financial liabilities:					
Guaranteed interest contracts	8,037	8,043	-	-	8,043
Group annuity contracts and other deposits	18,057	18,611	-	-	18,611
Individual annuity contracts	6,557	7,983	-	-	7,983
Supplementary contracts	1,164	1,165	-	-	1,165
Repurchase agreements	4,234	4,234	-	4,234	-
Commercial paper	250	250	-	250	-
Derivatives:					
Interest rate swaps	5,832	5,861	-	5,861	-
Options	8	8	-	8	-
Currency swaps	146	146	-	146	-
Forward contracts	75	76	-	76	-
Credit default swaps	2	2	-	2	-

Common stocks – subsidiaries and affiliates do not include unconsolidated subsidiaries, which had statutory carrying values of $13,612 million.

	December 31, 2016				
	Carrying Value	Fair Value	Level 1	Level 2	Level 3
	(In Millions)				
Financial assets:					
Bonds:					
U. S. government and agencies	$ 6,819	$ 7,327	$ -	$ 7,323	$ 4
All other governments	924	934	-	863	71
States, territories and possessions	676	723	-	723	-
Political subdivisions	483	514	-	514	-
Special revenue	5,605	6,167	-	6,134	33
Industrial and miscellaneous	62,806	64,478	-	39,231	25,247
Parent, subsidiaries and affiliates	6,508	6,604	-	615	5,989
Preferred stocks	465	482	1	30	451
Common stocks - subsidiaries and affiliates	573	573	487	23	63
Common stocks - unaffiliated	1,120	1,120	582	349	189
Mortgage loans - commercial	19,193	19,660	-	-	19,660
Mortgage loans - residential	1,768	1,728	-	-	1,728
Derivatives:					
Interest rate swaps	8,084	8,633	-	8,633	-
Options	653	653	-	653	-
Currency swaps	937	937	-	937	-
Forward contracts	51	51	-	51	-
Credit default swaps	38	40	-	40	-
Cash, cash equivalents and short-term investments	3,726	3,726	(95)	3,821	-
Separate account assets	62,204	62,204	39,641	21,825	738
Financial liabilities:					
Guaranteed interest contracts	7,086	7,028	-	-	7,028
Group annuity contracts and other deposits	19,097	19,661	-	-	19,661
Individual annuity contracts	6,715	8,272	-	-	8,272
Supplementary contracts	1,152	1,153	-	-	1,153
Repurchase agreements	4,729	4,729	-	4,729	-
Commercial paper	250	250	-	250	-
Derivatives:					
Interest rate swaps	5,915	5,960	-	5,960	-
Options	6	6	-	6	-
Currency swaps	36	36	-	36	-
Forward contracts	56	56	-	56	-
Credit default swaps	1	1	-	1	-

Common stocks – subsidiaries and affiliates do not include unconsolidated subsidiaries, which had a statutory carrying value of $13,671 million.

The use of different assumptions or valuation methodologies may have a material impact on the estimated fair value amounts.

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

	June 30, 2017			
	Level 1	Level 2	Level 3	Total
	(In Millions)			
Financial assets:				
Bonds:				
States, territories and possessions	$ -	$ 5	$ -	$ 5
Special revenue	-	1	-	1
Industrial and miscellaneous	-	7	47	54
Parent, subsidiaries and affiliates	-	37	57	94
Preferred stocks	3	-	3	6
Common stocks - subsidiaries and affiliates	495	-	105	600
Common stocks - unaffiliated	914	-	284	1,198
Derivatives:				
Interest rate swaps	-	7,952	-	7,952
Options	-	699	-	699
Currency swaps	-	683	-	683
Forward contracts	-	8	-	8
Credit default swaps	-	1	-	1
Separate account assets	42,693	22,689	753	66,135
Total financial assets carried at fair value	$ 44,105	$ 32,082	$ 1,249	$ 77,436
Financial liabilities:				
Derivatives:				
Interest rate swaps	$ -	$ 5,832	$ -	$ 5,832
Options	-	8	-	8
Currency swaps	-	146	-	146
Forward contracts	-	75	-	75
Total financial liabilities carried at fair value	$ -	$ 6,061	$ -	$ 6,061

The Company reviews the fair value hierarchy classifications each reporting period. Changes in the observability of the valuation attributes and the level of market activity may result in a reclassification of certain financial assets or liabilities between fair value hierarchy classifications. Such reclassifications are reported as transfers between levels at the beginning fair value for the reporting period in which the changes occur. For the period ended June 30, 2017, $298 million of equity securities were transferred from Level 2 to Level 1.

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

	December 31, 2016			
	Level 1	Level 2	Level 3	Total
	(In Millions)			
Financial assets:				
Bonds:				
States, territories and possessions	$ -	$ 8	$ -	$ 8
Special revenue	-	1	-	1
Industrial and miscellaneous	-	3	57	60
Parent, subsidiaries and affiliates	-	58	52	110
Preferred stocks	-	-	3	3
Common stocks - subsidiaries and affiliates	487	23	63	573
Common stocks - unaffiliated	582	349	189	1,120
Derivatives:				
Interest rate swaps	-	8,084	-	8,084
Options	-	653	-	653
Currency swaps	-	937	-	937
Forward contracts	-	51	-	51
Credit default swaps	-	4	-	4
Separate account assets	39,641	21,825	738	62,204
Total financial assets carried at fair value	$ 40,710	$ 31,996	$ 1,102	$ 73,808
Financial liabilities:				
Derivatives:				
Interest rate swaps	$ -	$ 5,915	$ -	$ 5,915
Options	-	6	-	6
Currency swaps	-	36	-	36
Forward contracts	-	56	-	56
Credit default swaps	-	1	-	1
Total financial liabilities carried at fair value	$ -	$ 6,014	$ -	$ 6,014

For the year ended December 31, 2016, there were no significant transfers between Level 1 and Level 2.

The following presents changes in the Company's Level 3 assets carried at fair value:

	Six Months Ended June 30, 2017						
	Bonds			Common Stock			
	Industrial and Miscellaneous	Parent, Subsidiaries, and Affiliates	Preferred Stock	Affiliated	Unaffiliated	Separate Account Assets	Total Level 3 Financial Assets Carried at Fair Value
	(In Millions)						
Balance as of January 1, 2017	$ 57	$ 52	$ 3	$ 63	$ 189	$ 738	$ 1,102
Gains in net income	1	-	-	-	-	32	33
Gains in surplus	5	5	-	30	46	-	86
Purchases	-	-	-	-	30	38	68
Sales	(1)	-	-	-	(2)	(54)	(57)
Settlements	(3)	-	-	-	(35)	(1)	(39)
Transfers in	9	-	-	12	182	-	203
Transfers out	(21)	-	-	-	(126)	-	(147)
Balance as of June 30, 2017	$ 47	$ 57	$ 3	$ 105	$ 284	$ 753	$ 1,249

Level 3 transfers in are assets that are consistently carried at fair value but have had a level change. The common stock unaffiliated assets were transferred from Level 2 to Level 3 due to a change in the observability of pricing inputs.

	Year Ended December 31, 2016						
	Bonds			Common Stock			
	Industrial and Miscellaneous	Parent, Subsidiaries, and Affiliates	Preferred Stock	Affiliated	Unaffiliated	Separate Account Assets	Total Level 3 Financial Assets Carried at Fair Value
	(In Millions)						
Balance as of January 1, 2016	$ 22	$ 45	$ 2	$ 40	$ 180	$ 725	$ 1,014
Gains (losses) in net income	(12)	1	-	-	(1)	22	10
(Losses) gains in surplus	(13)	7	-	7	(5)	-	(4)
Purchases	-	2	2	-	12	149	165
Issuances	4	11	-	1	1	-	17
Sales	-	(3)	-	-	(2)	(153)	(158)
Settlements	(6)	(20)	-	(1)	(1)	(10)	(38)
Transfers in	-	-	-	-	-	5	5
Other transfers	62	9	(1)	16	5	-	91
Balance as of December 31, 2016	$ 57	$ 52	$ 3	$ 63	$ 189	$ 738	$ 1,102

Level 3 transfers in are assets that are consistently carried at fair value but have had a level change. The separate account assets were transferred from Level 2 to Level 3 due to a change in the observability of pricing inputs.

Other transfers include assets that are either no longer carried at fair value, or have just begun to be carried at fair value, such as assets with no level changes but a change in the lower of cost or market carrying basis. Industrial and miscellaneous bonds were transferred from Level 2 to Level 3 due to a change in the observability of pricing inputs.

16. Business risks, commitments and contingencies

a. Risks and uncertainties

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 statutory disclosure in the Company's 2016 audited year end financial statements.

Insurance and underwriting risks

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

Investment and interest rate risks

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

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

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

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

Currency exchange risk

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

Credit and other market risks

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

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

Significant volatility in the financial markets, and government actions taken in response, may exacerbate some of the risks the Company faces. The Company holds investments in energy and certain other commodity sectors, which have experienced similar overall market volatility and declines. With the continued weaker economic outlook in these sectors, there may be an increase in reported default rates or potential downgrades to the ratings of companies exposed to these sectors. In addition, concerns over the solvency of certain countries and sovereignties and the entities that have significant exposure to their debt have created market volatility. This volatility may continue to affect the performance of various asset classes until there is an ultimate resolution of the sovereign debt related concerns.

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, such as the ongoing volatility with respect to the European Union, may 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 us to utilize the mitigating actions described above to attempt to reduce the potential impact of each underlying risk factor on the Company.

b. Litigation

The Company is involved in litigation arising in the normal course of business, which seeks compensatory damages, punitive damages and equitable remedies. Although the Company is not aware of any actions or allegations that reasonably should give rise to a material adverse impact to the Company's financial position or liquidity, the outcome of litigation cannot be foreseen with certainty. It is the opinion of management that the ultimate resolution of these matters will not materially impact the Company's financial position or liquidity. However, the outcome of a particular proceeding may be material to the Company's results of operations for a particular period depending upon, among other factors, the size of the loss and the level of the Company's results of operations for the period.

In 2009, several lawsuits were filed as putative class actions and later consolidated before the federal district court in Colorado in connection with the investment performance of Oppenheimer Rochester California Municipal Fund (the California Fund Suit). This fund was advised by OppenheimerFunds, Inc. (OFI) and distributed by its subsidiary OppenheimerFunds Distributor, Inc. (OFDI). The plaintiffs in the California Fund Suit asserted claims against the Company, OFI, OFDI and certain present and former trustees and officers of the fund under federal securities laws and alleged, among other things, the disclosure documents of the fund contained misrepresentations and omissions, that the investment policies of the fund were not followed, and that the fund and the other defendants violated federal securities laws and regulations and certain state laws. In March 2015, the district court granted the plaintiffs' motion to certify a class and to appoint class representatives and class counsel. In 2016, OFI recorded a liability of $33 million as an estimate of the probable amount of the costs it would incur in connection with the proposed settlement. At that time, OFI also concluded that a portion of the costs it would incur would be covered by the proceeds of insurance policies and recorded an insurance recovery of $14 million. In April 2017, the parties executed a memorandum of understanding setting forth the terms of a proposed $51 million settlement. The proposed settlement is subject to the negotiation and execution of final settlement documentation and approval by the court. As of June 30, 2017, OFI has recorded an accrued liability of $51 million for this settlement and an insurance recovery of $14 million.

In 2009, the Company was named as a defendant in a lawsuit filed in North Carolina state court related to certain losses in a bank-owned life insurance (BOLI) policy issued by the Company. The plaintiff alleges, among other things, fraud, breach of contract and breach of fiduciary duty claims against the Company, and it seeks to recover losses arising from investments pursuant to the BOLI policy. In May 2015, the plaintiff voluntarily dismissed its complaint and refiled the case. The Company believes it has substantial defenses and will continue to vigorously defend itself in this action. No reasonable estimate can be made at this time regarding the potential liability, if any, or the amount or range of any loss that may result from this suit.

In 2010, Christina Chavez (Chavez) filed a putative class action complaint in California state court against the Company. Chavez alleges that the Company breached its obligations to its term life policyholders in California by not paying dividends on those policies. In 2014, the parties participated in a mediation of their dispute, which did not result in a settlement. In July 2015, the judge certified a subclass consisting of one of twenty-six potential term products at issue in this case. All remaining subclasses were dismissed without prejudice. Fact discovery is complete and a trial has been set for October 2017. The Company believes it has substantial defenses and will continue to vigorously defend itself in this action. No reasonable estimate can be made at this time regarding the potential liability, if any, or the amount or range of any loss that may result from this claim.

In 2012, Karen Bacchi filed a putative class action complaint against the Company in federal court in Massachusetts alleging that the Company breached its contracts by allegedly failing to distribute surplus in excess of the statutorily prescribed limit. In January 2017, the parties reached a resolution to settle the lawsuit for $38 million, which was recorded in December 2016 as a combination of policyholders' benefits, dividends to policyholders and general insurance expenses that include legal fees and other costs. The parties are in the process of seeking the court's approval of the settlement, which is expected to occur in 2017.

In 2013, seven participants in the MassMutual Thrift Plan (the Thrift Plan) filed a putative class action complaint in federal court in Massachusetts. The complaint alleged, among other things, that the Company, the Investment Fiduciary Committee, the Thrift Plan Administrative Committee and individually named "fiduciaries" breached their duties by allowing the Thrift Plan to pay excessive fees and by engaging in self-dealing. In June 2016, the parties reached an agreement to settle the matter. In November 2016, the court entered a final order and judgment approving the settlement and payments have been made. The final settlement did not have a significant financial impact on the Company.

In January 2016, Deborah Bishop-Bristol filed a putative class action complaint against the Company in federal court in Connecticut. The lawsuit alleges that the Company breached its fiduciary duty by controlling the crediting rate, and therefore the compensation earned on the stable value products. Further, the complaint alleges that the Company failed to adequately disclose the pricing spread and accepted excessive fees for investment, management and administrative services. In April 2016, the court granted the Company's motion to transfer the case to federal court in Massachusetts. The court recently dismissed all of the plaintiff's claims and the plaintiff has filed an amended complaint. The Company believes that it has substantial defenses and will vigorously defend itself in this action. No reasonable estimate can be made regarding the potential liability, if any, or the amount or range of any loss that may result from this claim.

In 2017, Jason Berube filed a putative class action complaint against the Company in Massachusetts state court alleging that that he and other similarly situated individuals were improperly classified as independent contractors and that they were inside sales employees who should have been paid minimum wage, overtime and should not have had expenses offset commissions. The Company believes that it has substantial defenses and will vigorously defend itself in this action. No reasonable estimate can be made regarding the potential liability, if any, or the amount or range of any loss that may result from this claim.

c. Regulatory matters

The Company is subject to governmental and administrative proceedings and regulatory inquiries, examinations and investigations in the ordinary course of its business. In connection with regulatory inquiries, examinations and investigations, the Company has been contacted by various regulatory agencies including, among others, the Securities and Exchange Commission, the U.S. Department of Labor and various state insurance departments and state attorneys general. The Company has cooperated fully with these regulatory agencies with regard to their inquiries, examinations and investigations and has responded to information requests and comments.

Market volatility in the financial services industry over the last several years has contributed to increased scrutiny of the entire financial services industry. Therefore, the Company believes that it is reasonable to expect that proceedings, regulatory inquiries, examinations and investigations into the insurance and financial services industries will continue for the foreseeable future. Additionally, new industry-wide legislation, rules and regulations could significantly affect the insurance and financial services industries as a whole. It is the opinion of management that the ultimate resolution of these regulatory inquiries, examinations, investigations, legislative and regulatory changes of which we are aware will not materially impact the Company's financial position or liquidity. However, the outcome of a particular matter may be material to the Company's operating results for a particular period depending upon, among other factors, the financial impact of the matter and the level of the Company's results of operations for the period.

d. Commitments

In the normal course of business, the Company enters into letter of credit arrangements. As of June 30, 2017, the Company had approximately $139 million of outstanding letter of credit arrangements and $159 million as of December 31, 2016. As of June 30, 2017 and December 31, 2016, the Company did not have any funding requests attributable to these letter of credit arrangements.

17. Related party transactions

The Company has management and service contracts and cost-sharing arrangements with various subsidiaries and affiliates where MassMutual, for a fee, will furnish a subsidiary or affiliate, as required, operating facilities, human resources, computer software development and managerial services.

In June 2017, the Company contributed certain intellectual property, with no carrying value, in an affiliated transaction with Insurance Road LLC (IRLLC), a wholly-owned subsidiary of the Company and therefore no gain or loss was recognized on the transaction. In June 2017, the Company became party to an agreement with MassMutual Intellectual Property LLC (MMIP) effective June 30, 2017 that gave the Company the right to use certain intellectual property in the operation of its business.

18. Business combinations and goodwill

No significant changes.

19. Subsequent events

Management of the Company has evaluated subsequent events through August 10, 2017, the date the financial statements were available to be issued.

In July 2017, the Company contributed its ownership in certain partnerships and LLCs with a carrying value of approximately $650 million to IRLLC, a wholly-owned subsidiary of the Company, in an affiliated transaction and therefore no gain or loss was recognized on the transaction.

In July 2017, IRLLC paid a return of capital to the Company of $700 million.

In July 2017, the Company contributed $20 million to MMI.

No other events have occurred subsequent to the date of the Statements of Financial Position and before the date of evaluation that would require disclosure.

20. Impairment listing for loan-backed and structured securities

The following are the total cumulative adjustments and impairments for loan-backed and structured securities since July 1, 2009:

Period Ended	Amortized Cost before Cumulative Adjustment	Cumulative Adjustment	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value
June 30, 2017	$ 40,538,550.91	$ -	$ 40,538,550.91	$ 39,808,955.56	$ (729,595.35)	$ 39,808,955.56	$ 60,990,731.58
March 31, 2017	41,788,379.55	-	41,788,379.55	41,391,888.99	(396,490.56)	41,391,888.99	56,156,935.64
December 31, 2016	42,175,937.60	-	42,175,937.60	42,045,720.84	(130,216.76)	42,045,720.84	54,619,477.38
September 30, 2016	44,266,477.52	-	44,266,477.52	41,890,535.09	(2,375,942.43)	41,890,535.09	61,300,065.96
June 30, 2016	49,097,216.64	-	49,097,216.64	48,202,702.65	(894,513.99)	48,202,702.65	63,207,410.31
March 31, 2016	57,985,070.61	-	57,985,070.61	55,783,978.83	(2,201,091.78)	55,783,978.83	70,578,396.73
December 31, 2015	4,881,393.98	-	4,881,393.98	4,783,193.97	(98,200.01)	4,783,193.97	4,728,735.62
September 30, 2015	50,531,382.40	-	50,531,382.40	45,665,858.52	(4,865,523.88)	45,665,858.52	58,523,652.24
June 30, 2015	66,924,926.70	-	66,924,926.70	65,240,585.41	(1,684,341.29)	65,240,585.41	72,953,475.23
March 31, 2015	17,856,447.05	-	17,856,447.05	17,681,510.35	(174,936.70)	17,681,510.35	17,553,998.88
December 31, 2014	69,225,742.98	-	69,225,742.98	68,301,291.28	(924,451.70)	68,301,291.28	79,410,553.48
September 30, 2014	645,720.82	-	645,720.82	604,437.11	(41,283.71)	604,437.11	627,381.39
June 30, 2014	57,012,606.16	-	57,012,606.16	55,422,168.01	(1,590,438.15)	55,422,168.01	75,253,387.54
March 31, 2014	91,702,041.47	-	91,702,041.47	80,744,073.99	(10,957,967.48)	80,744,073.99	97,672,070.74
December 31, 2013	113,707,950.98	-	113,707,950.98	108,815,640.18	(4,892,310.80)	108,815,640.18	111,783,051.88
September 30, 2013	81,945,730.49	-	81,945,730.49	80,589,482.19	(1,356,248.30)	80,589,482.19	77,049,314.39
June 30, 2013	147,215,936.13	-	147,215,936.13	142,140,571.53	(5,075,364.60)	142,140,571.53	130,973,022.96
March 31, 2013	194,772,024.52	-	194,772,024.52	188,372,088.50	(6,399,936.02)	188,372,088.50	176,678,910.26
December 31, 2012	378,096,660.04	-	378,096,660.04	366,323,110.21	(11,773,549.83)	366,323,110.21	333,086,072.58
September 30, 2012	816,573,456.06	-	816,573,456.06	788,350,822.82	(28,222,633.24)	788,350,822.82	697,683,288.85
June 30, 2012	912,025,936.52	-	912,025,936.52	890,494,220.76	(21,531,715.76)	890,494,220.76	708,872,106.49
March 31, 2012	1,095,018,529.18	-	1,095,018,529.18	1,058,132,041.09	(36,886,488.09)	1,058,132,041.09	841,095,012.78
December 31, 2011	1,090,904,993.06	-	1,090,904,993.06	1,056,761,288.41	(34,143,704.65)	1,056,761,288.41	754,310,837.90
September 30, 2011	762,320,631.78	-	762,320,631.78	738,510,047.63	(23,810,584.15)	738,510,047.63	546,494,231.96
June 30, 2011	1,130,732,656.14	-	1,130,732,656.14	1,078,535,670.23	(52,196,985.91)	1,078,535,670.23	839,143,290.12
March 31, 2011	1,097,705,351.09	-	1,097,705,351.09	1,068,852,203.67	(28,853,147.42)	1,068,852,203.67	816,688,348.33
December 31, 2010	968,742,508.30	-	968,742,508.30	950,111,416.81	(18,631,091.49)	950,111,416.81	708,895,636.97
September 30, 2010	915,728,029.86	-	915,728,029.86	889,896,058.18	(25,831,971.68)	889,896,058.18	673,462,492.71
June 30, 2010	1,362,887,892.31	-	1,362,887,892.31	1,335,628,211.52	(27,259,680.79)	1,335,628,211.52	975,241,505.93
March 31, 2010	1,471,905,695.71	-	1,471,905,695.71	1,391,337,542.96	(80,568,152.75)	1,391,337,542.96	1,015,645,802.04
December 31, 2009	1,349,124,213.70	-	1,349,124,213.70	1,290,817,167.68	(58,307,046.02)	1,290,817,167.68	852,088,739.42
September 30, 2009	2,953,442,689.02	(106,853,708.32)	2,846,588,980.70	2,700,948,264.43	(145,640,716.27)	2,700,948,264.43	1,692,409,639.54
Totals		$ (106,853,708.32)			$ (638,446,321.56)		

The following is the impairment listing for loan-backed and structured securities for the three months ended June 30, 2017:

CUSIP	Amortized Cost before Cumulative Adjustment	Cumulative Adjustment	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value
76110H4M8	4,413.15	-	4,413.15	2,326.35	(2,086.80)	2,326.35	4,073.27
86358RLG0	3,484.71	-	3,484.71	2,669.64	(815.07)	2,669.64	30,170.77
86359ACG6	16,323.86	-	16,323.86	2.02	(16,321.84)	2.02	2.49
88157QAL2	774,182.08	-	774,182.08	675,598.95	(98,583.13)	675,598.95	1,947,675.43
89789KAC9	17,294.14	-	17,294.14	8,919.66	(8,374.48)	8,919.66	356,046.75
77277LAF4	22,514,590.18	-	22,514,590.18	22,167,493.44	(347,096.74)	22,167,493.44	34,318,674.16
77277LAH0	1,135,087.94	-	1,135,087.94	1,118,158.56	(16,929.38)	1,118,158.56	2,738,435.22
77277LAJ6	16,073,174.85	-	16,073,174.85	15,833,786.94	(239,387.91)	15,833,786.94	21,595,653.49
Totals	$ 40,538,550.91	$ -	$ 40,538,550.91	$ 39,808,955.56	$ (729,595.35)	$ 39,808,955.56	$ 60,990,731.58

The following is the impairment listing for loan-backed and structured securities for the three months ended March 31, 2017:

CUSIP	Amortized Cost before Cumulative Adjustment	Cumulative Adjustment	Amortized Cost before OTTI	Projected Cash Flow	Recognized OTTI	Amortized Cost after OTTI	Fair Value
17307GH76	$ 274,893.76	$ -	$ 274,893.76	$ 44,730.49	$ (230,163.27)	$ 44,730.49	$ 152,776.75
22541QJR4	11,175.33	-	11,175.33	53.52	(11,121.81)	53.52	6,865.92
32051DCK6	182,177.17	-	182,177.17	160,728.11	(21,449.06)	160,728.11	179,180.14
55274SAM3	225,789.88	-	225,789.88	209,839.17	(15,950.71)	209,839.17	218,832.17
86358RA23	1,326,199.14	-	1,326,199.14	1,253,635.93	(72,563.21)	1,253,635.93	1,289,098.83
86359ACG6	6,287.32	-	6,287.32	48.80	(6,238.52)	48.80	2.41
US77277LAF40	22,537,014.10	-	22,537,014.10	22,514,590.18	(22,423.92)	22,514,590.18	31,699,906.98
US77277LAH06	1,136,181.78	-	1,136,181.78	1,135,087.94	(1,093.84)	1,135,087.94	2,662,526.10
US77277LAJ61	16,088,661.07	-	16,088,661.07	16,073,174.85	(15,486.22)	16,073,174.85	19,947,746.34
Totals	$ 41,788,379.55	$ -	$ 41,788,379.55	$ 41,391,888.99	$ (396,490.56)	$ 41,391,888.99	$ 56,156,935.64