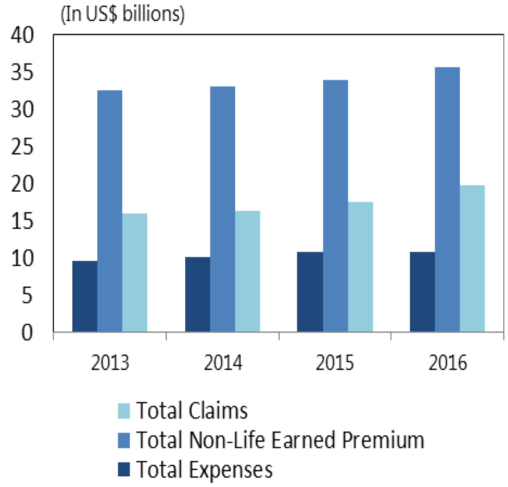
Macroprudential Risk: Annual Statutory Filings Report

FY 2016

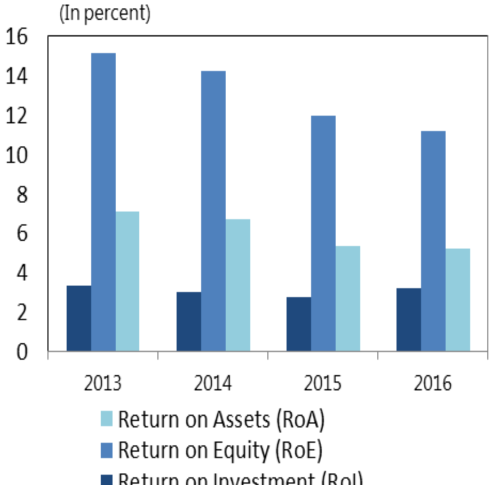
Major Large Commercial (Re)insurers- Total Claims, Total Net Earned Premiums and Expenses

(In US$ billions)



Major Large Commercial (Re)insurers- Financial Ratios

(In percent)



Source: BMA staff calculations

HIGHLIGHTS

- **Large commercial (re)insurers recorded a higher net income in 2016, (an increase of 13.7%) and an expanding asset base (an increase of 16.4%) year-on-year (y/y).**
- **Net written premiums increased by 5.9% y/y. Improvements in expenses were recorded and the expense ratio dropped by 5.0%. The combined ratio rose by 2.7% while total claims increased by 12.7%.**
- **Liquidity conditions did not improve during the year as the share of "BBB-AAA"-rated bonds relative to claims increased by 5.7%.**

(In US$ billions unless indicated otherwise)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Net Earned Premiums	35.6	34.0	33.2	32.5	32.6	4.9
Net Written Premiums	37.0	34.9	34.6	34.1	33.2	5.9
Net Income	10.0	8.8	10.6	11.1	10.7	13.7
Total Claims	19.8	17.6	16.3	16.0	18.1	12.7
Total Assets	191.1	164.2	158.4	156.2	165.8	16.4
Loss Ratio	55.5	51.7	49.2	49.2	55.6	7.4
Expense Ratio	30.2	31.8	30.4	29.4	29.7	-5.0
Combined Ratio	85.7	83.5	79.6	78.6	85.3	2.7
Current Assets/Current Liabilities (In percent)	1638.3	2392.1	2711.8	2739.1	2245.2	-31.5
"BBB-AAA" Assets/Claims (In percent)	318.2	301.0	338.2	343.6	244.1	5.7

Source: BMA staff calculations. *Note:* The year-on-year (y/y) change denotes the change between current and the last fiscal year, e.g., FY 2016 and FY 2015.

The information presented in this report relates to Capital and Solvency Return (CSR) filings of Bermuda legal entities either Class 4 or 3B commercial (re)insurers under the supervision of the Bermuda Monetary Authority (BMA). The presented information is based on aggregated individual firm data. Class 3B companies are large commercial (re-)insurers underwriting 50% or more unrelated business and with total net premiums of $50 million or more. Class 4 (re)insurers have a minimum capital and surplus of $100 million underwriting direct excess liability and/or property catastrophe reinsurance. Companies should have enough capital to withstand aggregate expected losses beyond the 99.0% percentile (TVaR99).

Editorial team: Nick Georgiopoulos (Senior Officer).

GENERAL DEVELOPMENTS

Basic market dynamics have not changed in 2016. Soft pricing, abundance of capital and competition from the Insurance Linked Securities (ILS) market continue to pose challenges to (re)insurers in Bermuda. Despite the challenges, Bermuda (re)insurers remain profitable and well capitalised.

(Re)insurers are attempting to enter into new markets. In Bermuda, mortgage (re)insurance is becoming an area where (re)insurers are looking to diversify their current business. Bermuda Monetary Authority (BMA) issued guidance on stress testing of mortgage insurance which rolled out in 2017.

Digitisation, insurtech and cyber risk are becoming more prevalent in the Bermuda market. Companies are either entering into new insurance products such as cyber risk protection or they are optimising existing processes with the use of new technology.

A noteworthy challenge is the monetary policy of major central banks. Despite recent increases in US interest rates, on the whole, interest rates remain low compared to levels seen before the crisis. Investment yields are depressed while uncertainties and fragile growth are not expected to allow for the normalisation of interest rate policy in the near future. Despite US rate increases, Europe seems reluctant to follow the US. Europe's rate policy reflects its difficulty in coping with post-crisis economic woes in the periphery.

More investors bought into securitised insurance instruments, while traditional (re)insurers saw the investment yields of their portfolios stagnate or dwindle. In previous Global Financial Stability Reports, the International Monetary Fund has highlighted the issue of low interest rates and their impact on insurers (especially life (Long-Term) insurers). Although the majority of Bermuda (re)insurers write property and casualty (P&C) business which is less reliant on investment income, a substantial part of the Bermuda market writes Long-Term business and is affected by a low yield environment.

The continued policy of low interest rates enhanced risk appetites and moved more money into the ILS market where yields were (and still are) higher than traditional fixed income securities. In the Catastrophe (CAT) Bond market, the net issuance volume in 2016 for CAT Bonds was $0.6 bln, while global outstanding volume reached $26.9 bln (up from $26.3 bln in 2015.

Bermuda (re)insurers reported an underwriting income of $6.2 bln in 2016, compared to $5.4 bln in 2015.

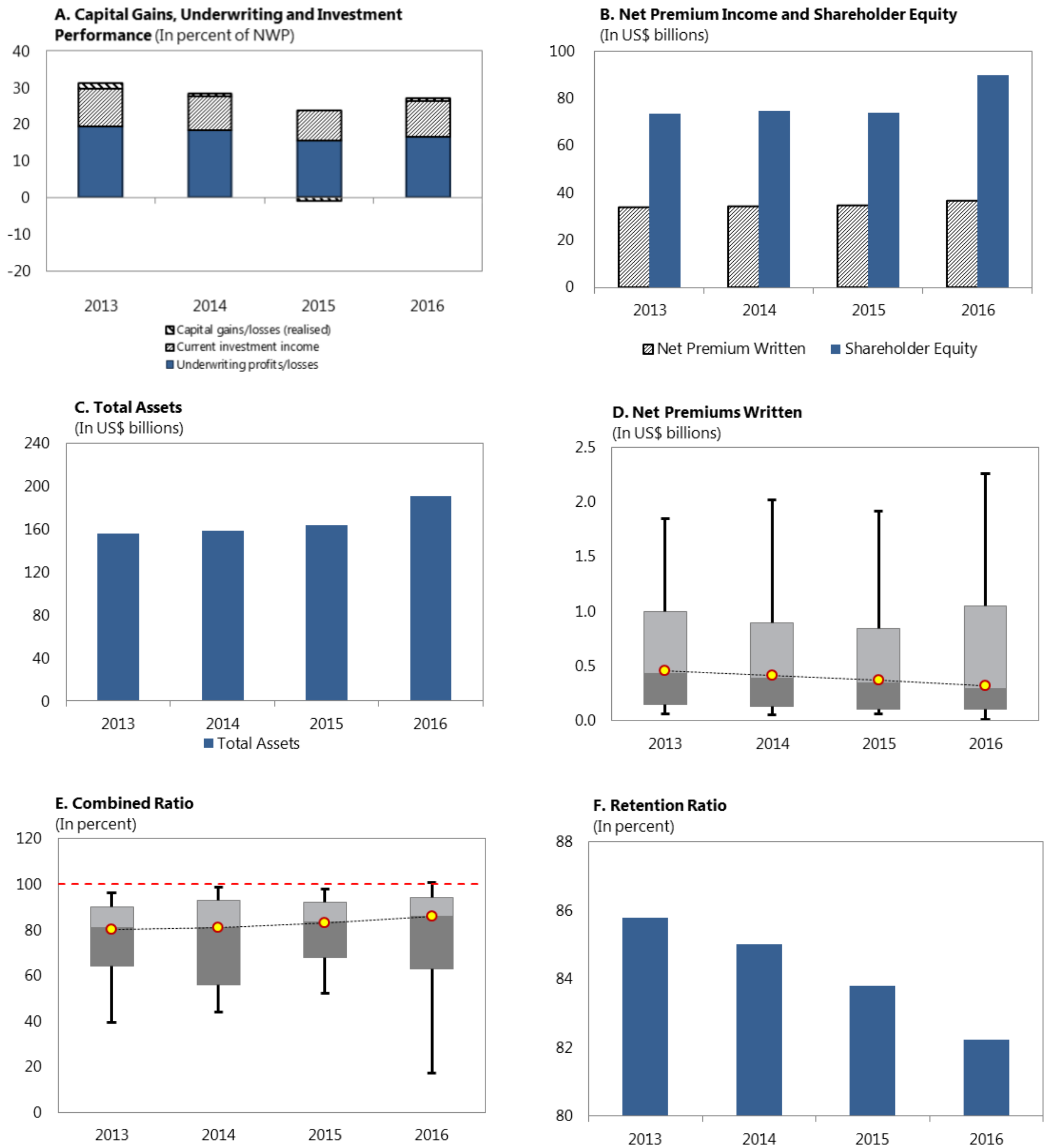
Higher claims volume increased the combined ratio by 2.7% y/y from 83.5% to 85.7%. As a proxy of liquidity, the ratio of "BBB-AAA[1]"- rated assets compared to claims increased by 5.7%. Results indicate that the sector seems to be liquid enough to withstand catastrophic losses.

Investment income was low for the sector. Bermuda (re)insurers were more reliant on sound underwriting practices to produce profits, rather than investment income. In an environment of low interest rates Bermuda (re)insurers achieved a higher Return on Investment (RoI) at 3.2% for FY 2016.

Note: Due to M&A activity, de-registrations and new registrations of Class 3B and Class 4 (re)insurers, the results between years may not be directly comparable.

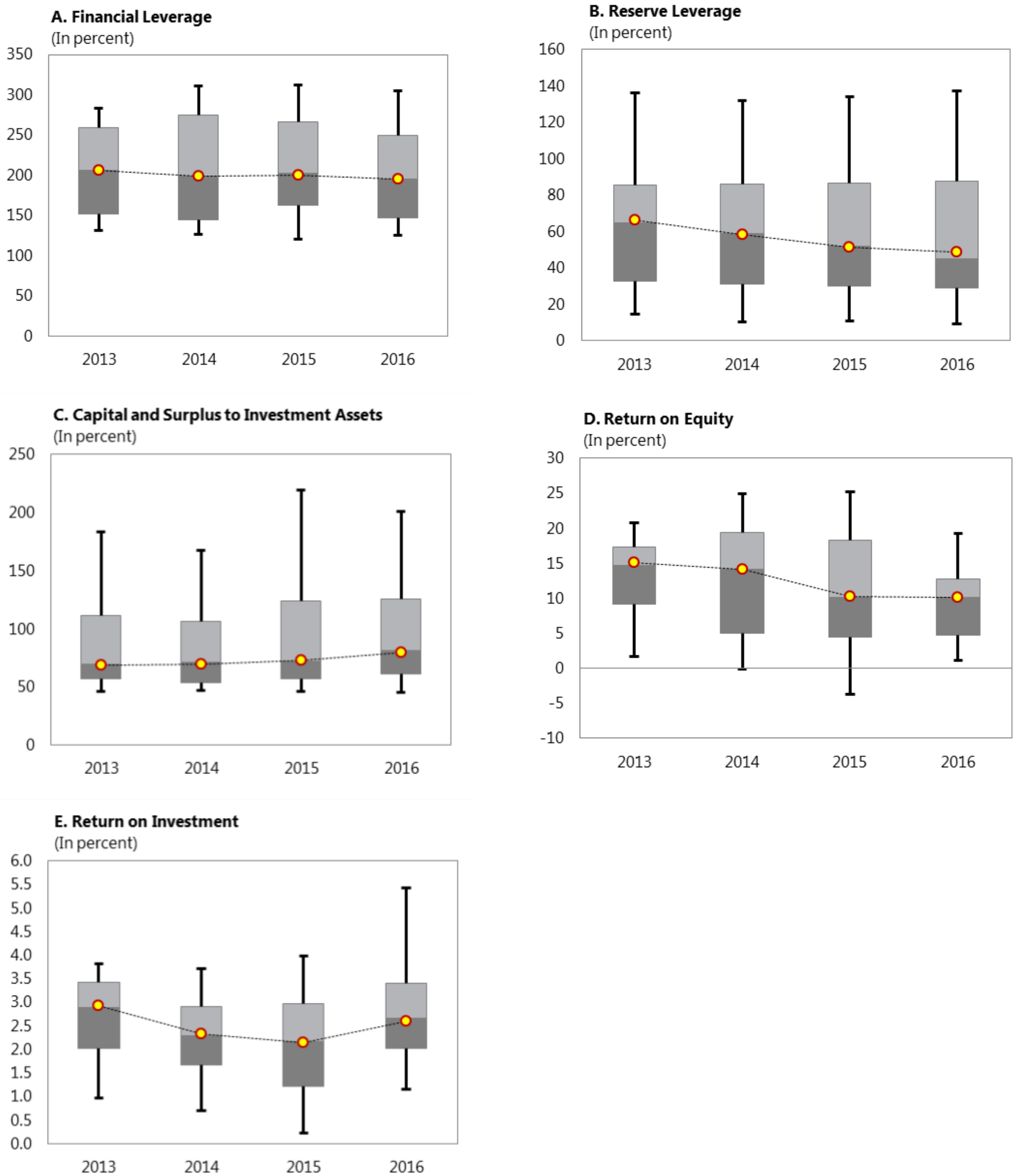
[1] BBB-AAA-rated is the sum of all bonds rated as BBB, A, AA and AAA

Figure 1: Large Commercial (Re)Insurers (Classes 4 and 3B) in Bermuda—Performance Indicators



Source: BMA staff calculations and Bloomberg. *Note:* Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers).

Figure 2: Large Commercial (Re)Insurers (Classes 4 and 3B) in Bermuda—Performance Indicators



Source: BMA staff calculations and Bloomberg. *Note:* Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers).

Figure 3: Large Commercial (Re)Insurers (Classes 4 and 3B) in Bermuda—Asset Quality

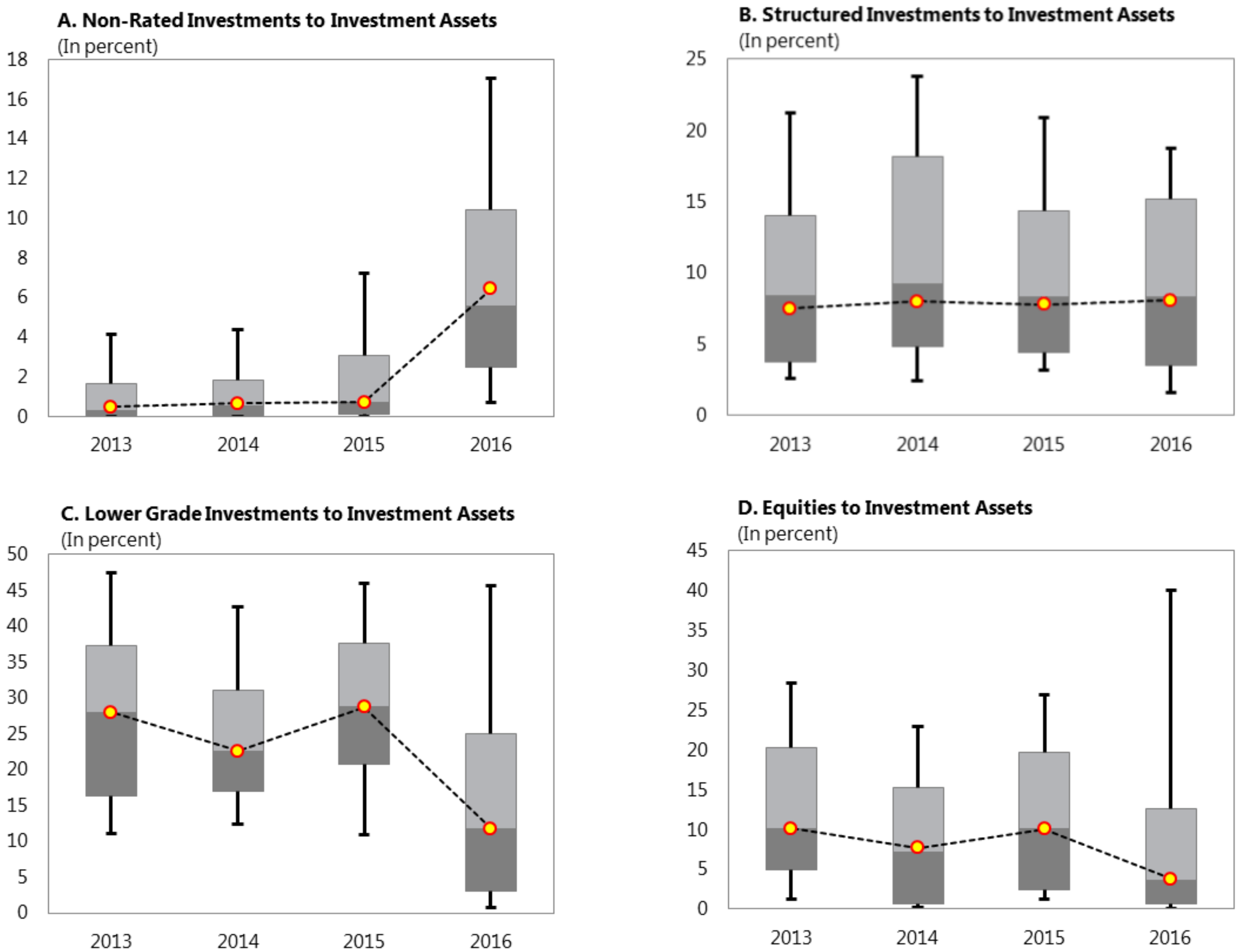
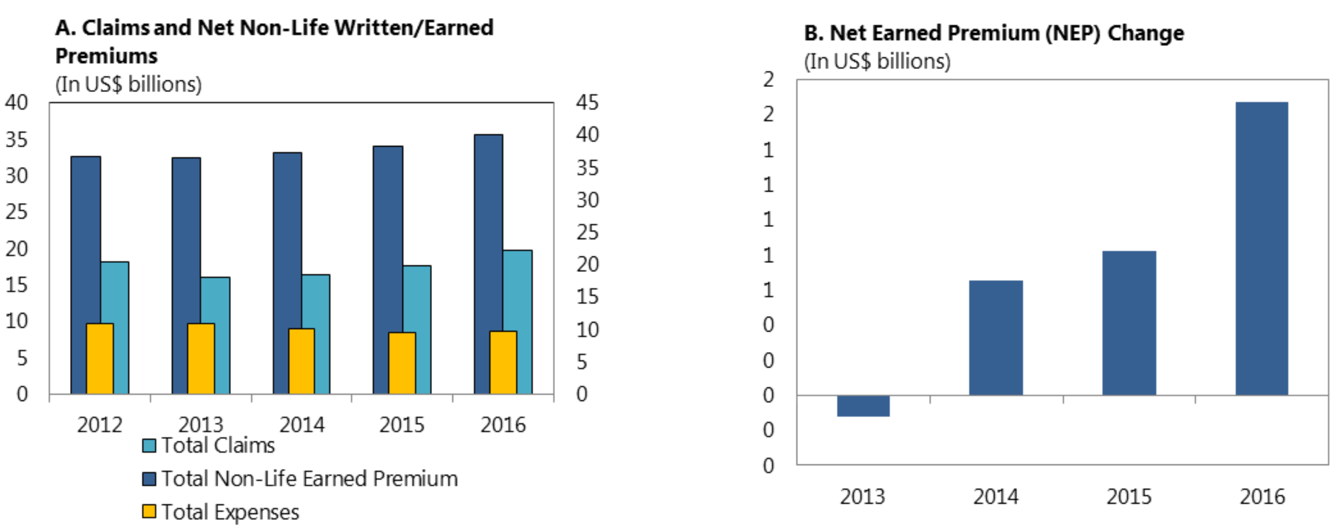


Figure 4: Large Commercial (Re)Insurers (Classes 4 and 3B) in Bermuda—Claims Experience



Source: BMA staff calculations and Bloomberg. *Note:* Boxplots include the median (yellow dot), the 25th and 75th percentiles (grey box, with the change of shade indicating the median), and the 10th and 90th percentiles (whiskers).

CAPITAL CONDITIONS

The capital position of Bermuda (re)insurers changed in 2016 (Table I and Table III). Capital and surplus relative to total assets (equity ratio)[2] increased by 4.4% y/y and stood at 47.0% while capital and surplus reached $89.7 bln. Reserves increased by 16.8% y/y and amount to 34.0% of assets held by firms—almost 72.5% of capital and surplus. Table I shows a summary of selected key balance sheet indicators.

Table I: Key Balance Sheet Indicators

(In US$ billions unless indicated otherwise)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Capital and Surplus	89.7	73.8	74.8	73.4	79.2	21.6
Total Assets	191.1	164.2	158.4	156.2	165.8	16.4
Total Liabilities	101.4	90.4	83.6	82.8	86.6	12.2
NWP/Equity (In percent)	41.2	47.3	46.2	46.4	41.9	-12.9
Reserve Leverage (In percent)	72.5	75.4	73.0	76.5	75.1	-3.9

Table II: Key Income Statement Indicators

(In US$ billions)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Net Earned Premiums	35.6	34.0	33.2	32.5	32.6	4.9
Net Written Premiums	37.0	34.9	34.6	34.1	33.2	5.9
Total Expenses	10.8	10.8	10.1	9.6	9.7	-0.3
Total Claims	19.8	17.6	16.3	16.0	18.1	12.7
Investment Income	3.6	3.0	3.2	3.5	3.8	22.9
Underwriting Income	6.2	5.4	6.3	6.6	4.7	14.2
Net Income	10.0	8.8	10.6	11.1	10.7	13.7

The operational performance of Bermuda (re)insurers improved during the year. Claims increased by 12.7% y/y, which resulted in a higher combined ratio of 85.7%, up by 2.7% y/y (Tables II and VI). The effect of higher claim volumes during the quarter were complemented by improvement in operational expenses. The expense ratio dropped by 5.0% y/y.

CAPITAL STRUCTURE

Table III: Aggregate Capital Structure

(In US$ billions unless indicated otherwise)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Capital and Surplus	89.7	73.8	74.8	73.4	79.2	21.6
Insurance Reserves	65.0	55.7	54.6	56.2	59.5	16.8
Financial Leverage (In percent)	213.0	222.4	211.8	212.7	209.4	-4.2
Equity Ratio (In percent)	47.0	45.0	47.2	47.0	47.8	4.4
Reserve Ratio (In percent)	34.0	33.9	34.5	36.0	35.9	0.3

Debt remains low at about 9.5% of total assets. Between fiscal years, financial leverage (i.e., assets relative to capital and surplus) dropped by 4.2% to 213.0% due to the faster rate of increase of capital and surplus compared to assets. The reserve ratio increased by 0.3% y/y. Reserves increased by 16.8% y/y.

PROFITABILITY AND FINANCIAL INDICATORS

Table IV: Summary Profitability Indicators

(In percent unless indicated otherwise)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Loss Ratio	55.5	51.7	49.2	49.2	55.6	7.4
Investment Income/Net Income	36.3	33.6	30.3	31.6	35.5	8.1
Investments Income/Reserves	5.6	5.3	5.9	6.2	6.4	5.2
Investment Income/Assets	1.9	1.8	2.0	2.2	2.3	5.6
Total Investments (In US$ billions)	114.1	106.6	107.6	105.6	109.5	7.0
Investment Income (In US$ billions)	3.6	3.0	3.2	3.5	3.8	22.9

Profitability, measured by net income, increased by 13.7% y/y. Underwriting income stood to $6.2 bln during the year (Table II). Investment income represents 36.3% of total net income an increase from FY 2015 by 8.1%.

[2] Equity Ratio=1/Financial Leverage. See Table III.

Table V: Summary Financial Indicators

(In percent)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Return on Assets (RoA)	5.2	5.4	6.7	7.1	6.5	-2.4
Return on Equity (RoE)	11.2	11.9	14.2	15.1	13.5	-6.5
Return on Investment (RoI)	3.2	2.8	3.0	3.3	3.5	14.8

Financial indicators had a mixed picture in 2016. The aggregate RoA dropped by 2.4% y/y. The RoE dropped by 6.5% and stood at 11.2%. RoI increased by 14.8% y/y at 3.2% which remains low due to the protracted low interest rate environment.

Actuarial Indicators

Table VI: Actuarial & Technical Performance Indicators

(In percent unless indicated otherwise)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Loss Ratio	55.5	51.7	49.2	49.2	55.6	7.4
Expense Ratio	30.2	31.8	30.4	29.4	29.7	-5.0
Combined Ratio	85.7	83.5	79.6	78.6	85.3	2.7
Claims/ Reserves	30.4	31.5	29.9	28.4	30.5	-3.5
Reins. Assets (In US$ billions)	11.2	8.1	7.9	7.7	8.9	37.2

Note: "Reins. Assets"=Reinsurance Assets.

The combined ratio increased by 2.7% y/y to 85.7% due to an increase in claims volume. The loss ratio increased by 7.4% y/y during the year[3] while the expense ratio dropped by 5.0%. Reinsurance assets increased by 37.2% reaching $11.2 bln.

Asset Quality Indicators

Table VII: Asset Quality Indicators

(In percent)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Non-Rated Investments/ Investment Assets	6.4	2.0	1.3	1.4	9.9	228.0
Structured Investments/ Investment Assets	9.3	10.8	11.4	10.4	10.0	-14.1
Lower Grade Investments/ Investment Assets	13.1	32.6	27.7	32.6	22.4	-59.9
Equities/ Investment Assets	5.4	9.9	5.0	9.9	3.9	-45.3
US Government Agency - MBS/ Investment Assets	12.9	13.2	13.0	13.3	15.0	-1.9
US Government Agency - Other/ Investment Assets	1.5	1.4	1.8	2.4	2.9	12.9
MBS Residential/ Investment Assets	0.7	0.0	0.1	0.1	0.1	3957.9
MBS Residential Subprime/ Investment Assets	0.2	0.8	1.0	1.3	1.8	-68.0
MBS Commercial/ Investment Assets	3.3	4.0	4.7	4.3	3.9	-18.5
High Grade (BBB-AAA) Bonds/ Investment Assets	40.7	49.5	51.3	52.0	40.4	-17.8
Sovereign Assets/ Investment Assets	26.2	26.7	24.6	25.2	26.7	-2.1

Note: Structured investments refer to any non-agency structured finance investment i.e. MBS, CLO, CDO, etc. Lower grade investments consist of lower investment grade fixed income securities plus non-rated investments, plus quoted equities plus unquoted investments. Sovereign investments consist of U.S. treasuries and GSE agency paper.

(Re)insurers decreased the share of lower grade securities of their investment portfolio. Non-rated securities increased by 228.0% y/y standing at a low 6.4% of the total investment portfolio. Structured investments fell by 14.1%. Lower grade investments which is the sum of quoted and unquoted equities and the sum of low investment grade, below investment grade and unrated bonds fell by 59.9%. Lower grade investments comprised 13.1% of the total investment portfolio, while equities comprised 5.4%. Sovereign assets comprised 26.2% of the total investment portfolio. Non-agency MBS and subprime residential were in trivial amounts while overall structured investments comprised 9.3% of the total investment portfolio. Many firms increased significantly their cash holdings.

[3] All claims came from non-life lines of business.

Liquidity Indicators

Table VIII: Liquidity Indicators

(In percent)	2016	2015	2014	2013	2012	*Y/Y Change (%)*
Cash Investments/ Total Assets	15.2	10.3	10.2	10.5	5.1	47.9
Cash Investments/ Total Liabilities	28.7	18.7	19.2	19.8	9.8	53.4
Cash Investments/ Reserves	44.7	30.3	29.4	29.2	14.2	47.4
Cash Investments/ Claims	147.0	96.2	98.5	102.7	46.7	52.8
BBB-AAA Assets/ Total Assets	32.9	32.2	34.8	35.1	26.7	2.3
BBB-AAA Assets/ Total Liabilities	62.1	58.5	66.0	66.3	51.1	6.2
BBB-AAA Assets/ Insurance Reserves	71.4	94.9	101.1	97.7	74.4	-24.7
BBB-AAA Assets/ Claims	318.2	301.0	338.2	343.6	244.1	5.7
Current Assets/ Current Liabilities	1638.3	2392.1	2711.8	2739.1	2245.2	-31.5

Note: "BBB-AAA" refers to the rating category of investment assets held by firms. The term "BBB-AAA" refers to the sum of BBB up to AAA rated with the intermediate ratings included of corporate bonds rated as such. Cash Investments are: i) sovereign debt issued by a country in its own currency that is rated AA- or better, ii) debt issued by government-owned and related entities that were explicitly guaranteed by that government, with the exception of mortgage-backed securities.

Firms hold sufficient liquidity buffers. A balanced cash-to-claims position eliminates any liquidity risk from declining investment returns. Cash investments cover 147.0% of annual claims—on average—15.2% of assets, 28.7% of liabilities, and 44.7% of insurance reserves (Table VIII). The sum of BBB, A, AA and AAA securities can cover 62.1% of total liabilities and 318.2% of claims.

Glossary

"AAA" is the generic classification of the highest rating assigned by a rating agency for an asset/security/entity whose credit risk is so low that it is regards as virtually risk-free.

Annualised is expressing (a quantity such as an interest rate, profit, expenditure etc.) as if it applied or were measured over one year.

CAT-Bond is an insurance linked security which resembles a bond. The difference with the bond is that the payment of principle and interest is contingent on the realization of an insured risk from a specified portfolio of insured risks.

Capital gain is the realized profit from the sale of a financial asset due to its appreciation.

Capital structure is the composition of liabilities that fund the operations and the assets of a (re)insurance company.

Loss ratio is the ratio of claims incurred within a period over the net written premium written within that period.

Combined Ratio is the sum of expense ratio and claims ratio.

Distribution function is a mathematical function that provides the probability of an event being within a specified interval.

Earned premium is the premium which is recorded as income in the income statement of a (re)insurer. It is usually calculated on a pro-rata basis.

Expense ratio is the ratio of expenses paid within a period over the net written premium written within that period.

Expectation (Expected Value) is the mathematical formulation of the concept of prediction. An expected value is the weighted average of the outcomes a random experiment times the probability of the outcome.

Financial leverage is based on average total assets divided by average total common equity, with the average taken between the beginning and ending balance.

Foreign currency is any currency other than the Bermuda dollar.

Gross premium is the premium with loadings such as expenses, commissions and fees.

Insurance-linked securities (ILS) are financial instruments whose payoffs are contingent on the realization of an insurable risk.

Insurance reserves are provisions held by the (re)insurer in order to meet future obligations that stem from the underwriting activities.

Investment income is the income that is being earned by investments in financial and non-financial assets

Interest income includes interest received and receivable, and consists of interest from deposits with financial institutions, government securities, loans and other interest earning assets.

Net premium is the premium left after reinsurance premium has been paid.

Normal distribution is a distribution function which describes phenomena whose outcomes do not deviate often from their expected value.

Reinsurance is a risk transfer method used by insurers to mitigate and manage risk by insuring at a reinsurer an already insured risk by them.

Reinsurance recoverables are estimates of the expected payments made to the cedant by the reinsurer.

Reserve leverage is the ratio between premium reserve and shareholder's equity (defined as share capital plus additional paid-in capital plus retained earnings.

Retention Ratio is the ratio of Net Written Premium to Gross Written Premium. It is a measure of how much reinsurance is purchased. A lower ratio implies more purchase of reinsurance.

Return on assets is calculated by dividing the net income by the value of total assets over the same period.

Return on equity is calculated by dividing net income by the value of shareholder equity over the same period.

Return on investment is calculated by dividing investment income by the value of investment assets over the same period.

Shareholder equity, or Capital and Surplus, is the difference between assets and liabilities, including subordinated debt.

Standard deviation is the probabilistic dispersion of a distribution around its expected value.

Subordinated debt is debt whose seniority is junior to policyholder claims on a (re)insurer.

Underwriting profit (loss) is the profit (loss) attributed to the operations of a (re)insurer by excluding all other activities than underwriting and claims processing.

Written premium is the premium that the (re)insurer collects from the policyholder but is not recorded as income in the profit and loss statement.