

# Reinsurance Market Report

Results for Year-End 2017

April 2018







# Contents

Key Findings .....	1
Summary .....	2
Capital .....	2
Return of Capital.....	3
Return on Equity.....	3
Underwriting .....	4
Catastrophe Loss .....	6
Capital .....	7
Highlights for the INDEX.....	7
Active Capital Management .....	8
Earnings .....	10
Underwriting Performance .....	11
Premium Volumes .....	11
Combined Ratios .....	12
Prior Year Loss Development.....	13
Catastrophe Losses .....	14
Accident Year Performance, ex Catastrophe .....	16
Expense Ratios for the SUBSET.....	16
Modest Investment Returns .....	17
Appendix .....	19



# Key Findings

For the Willis Reinsurance Index\* (INDEX):

- Headline shareholders' equity at year-end 2017 increased by 7.8% to USD 371.0B (Year-end 2016: USD 344.1B). Without National Indemnity's contribution to the overall increase in shareholders' equity, the total would have decreased marginally to USD 343.7B.
- The overall USD 26.9B increase in shareholders' funds was due to one-off support provided by significant unrealised investment gains of USD 34.7B which were not reported within net income, of which National Indemnity contributed USD 30.2B.
- Aggregate net income reduced significantly to USD 12.0B (FY 2016: USD 26.6B) due to the impact of substantial Natural Catastrophe losses. These losses were partly offset by continued high prior year reserve releases, albeit reduced from FY 2016 due in part to the Ogden rate change\*\*.
- Profitability was also heavily reliant on significant realised investment gains of USD 9.7B (FY 2016: USD 7.0B). This increase was supported by one-off investment gains of USD 2.7B which were realised by Fairfax following the sale of two subsidiaries and equity gains.
- Notably, the USD 15.6B of capital returned through dividends and share buybacks exceeded net income.
- 2017 headline return on equity (RoE) of 3.4% for the INDEX, down from 8.0% at FY 2016.
- The reported combined ratio for the INDEX at FY 2017 increased to 104.8% (FY 2016: 94.4%)

For the SUBSET\*\*\* within the INDEX that breaks out the relevant disclosure:

- Reported RoE of 2.8% at FY 2017 for the SUBSET, down from 8.2% at FY 2016. On a like for like basis, the reported RoE would have been 1.4% without the one-off realised gains of USD 2.7B for Fairfax.
- Underlying RoE for the SUBSET of 5.2% at FY 2017, up from 3.3% at FY 2016. On a like for like basis, the underlying RoE would have been 3.8% without the one-off realised gains of USD 2.7B for Fairfax.
- The FY 2017 reported combined ratio for the SUBSET increased significantly to 107.4% (FY 2016: 92.9%).
- Excluding Natural Catastrophe losses and prior year reserve releases, the Ex-Cat Accident Year combined ratio deteriorated further to 94.6% at FY 2017 from 90.2% at FY 2011 and 89.2% at FY 2005.
- Over the last 10 years, the aggregate expense ratio for the SUBSET has risen by 3.3 percentage points to 32.5% at FY 2017.
- Profitability continues to be dependent on substantial prior year reserve releases. As shown in Chart 7, prior year reserve releases accounted for approximately 126% of net income up from 49% at FY 2016 due to a significant decrease in net income.

Alternative capital increased to USD 88B\*\*\*\* from USD 75B at FY 2016.

\* INDEX relates to those companies listed within Appendix 1 of this report.

\*\* Ogden rate change relates to the March 2017 changes to U.K.-specific discount rates in the government's actuarial "Ogden Tables". The Ogden rate is currently under review by the U.K. government.

\*\*\* SUBSET is defined as those companies that make the relevant disclosure in relation to cat losses and prior year reserve releases. All constituents of the SUBSET are publicly listed groups that comprise 49% of the aggregate capital INDEX

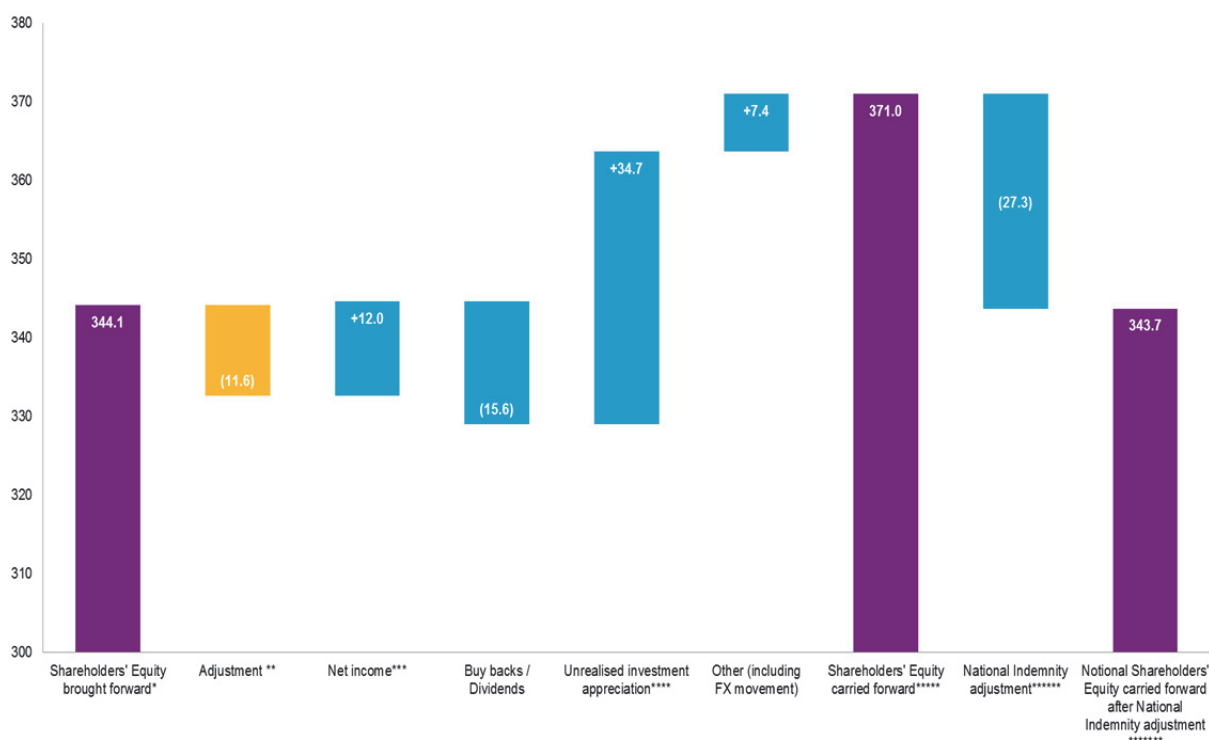
\*\*\*\* Capital Markets commentary provided by Willis Towers Watson Securities [http://www.willis.com/client\\_solutions/services/wcma/](http://www.willis.com/client_solutions/services/wcma/)

# Summary

## Capital

For the INDEX:

- Aggregate shareholders' equity increased by 7.8% to USD 371.0B (FY 2016: USD 344.1B).
- Without National Indemnity's contribution, shareholders' equity would have decreased marginally to USD 343.7B.



\* As per latest financial statements issued since date of previous Willis Re report, generally as at year end December 31, 2017.

\*\* Removal of MS Amlin, Endurance, Allied World and Novae from the INDEX due to their acquisition by Mitsui Sumitomo, Sampo, Fairfax and AXIS Capital respectively.

\*\*\* Net income of USD 12.0B includes a significant level of realised investment gains (USD 9.7B).

\*\*\*\* Unrealised investment appreciation that is not reported within net income.

\*\*\*\*\* As per latest financial statements issued by March 31, 2018 generally as at year end December 31, 2017. Africa Re, Asia Capital Re and CCR were yet to report their Year-End 2017 financial results as at the time of this publication; we include their year-end 2016 shareholders' equity within our INDEX total at the start and end of 2017.

\*\*\*\*\* Removal of National Indemnity's contribution to the increase in shareholders' equity.

\*\*\*\*\* Notional carried forward shareholders' equity after the National Indemnity adjustment.

- Growth in shareholders' funds was supported by net income of USD 12.0B (FY 2016: USD 26.6B).
- Continued active capital management returned USD 15.6B through share buybacks and dividends (FY 2016: USD 16.4B). Notably, the capital returned exceeded net income.
- The overall USD 26.9B increase in shareholders' funds was due to substantial one-off support from unrealised investment gains of USD 34.7B which were not reported within net income, of which National Indemnity contributed USD 30.2B.
- The USD 11.6B adjustment is made to reflect the removal of MS Amlin, Endurance, Allied World and Novae from the INDEX.

- Including other major regional and local reinsurers, and a pro-rated portion of capital within major groups whose reinsurance portfolio is <10% of their total premium, we derive an estimate of USD 398B (Year-end 2016: USD 374B) of aggregate shareholders' equity for the traditional reinsurance market.
- Including capital from alternative markets the figure of USD 398B increases by USD 88B to approximately USD 486B (Year-end 2016: USD 449B).
- If 100% of the capital within the major groups above is included the figure is estimated at USD 586B (Year-end 2016: USD 593B).
- Including capital from alternative markets the figure of USD 586B increases by USD 88B to approximately USD 674B (Year-end 2016: USD 668B).

## Return of Capital

For the INDEX:

- A total of USD 15.6B was returned to shareholders, accounting for approximately 126% of net income (FY 2016: 16.4B, 62%).
  - Share buybacks returned USD 4.4B of capital, equivalent to 1.3% of aggregate opening shareholders' equity (FY 2016: USD 5.8B, 1.8%).
  - USD 11.2B returned through ordinary or special dividends, or 3.2% of aggregate opening shareholders' funds (FY 2016: USD 10.6B, 3.2%).

For the SUBSET:

- A total of USD 10.4B was returned to shareholders', accounting for 202% of FY net income (FY 2016, USD 11.8B, 78%).
  - Share buybacks returned USD 4.4B of capital, equivalent to 2.4% of aggregate opening shareholders' equity (FY 2016: USD 5.8B, 3.0%).
  - USD 6.0B returned through ordinary or special dividends, or 3.2% of aggregate opening shareholders' funds (FY 2016, USD 6.0B, 3.0%).

## Return on Equity

For the INDEX:

- Aggregate RoE of 3.4% for the INDEX, down from 8.0% at FY 2016.
- The further reduction in reported RoEs was due to the impact of significant Natural Catastrophe losses.
- Investment yields remained flat at approximately 2.9%.

For the SUBSET:

- The reported RoE for the SUBSET was 2.8% at FY 2017, a further decrease from 8.2% at FY 2016 and 10.2% at FY 2015. This followed a period of stability in the RoE for the SUBSET of approximately 11.7% during FY 2012 to FY 2014.
- As the RoE analysis for the SUBSET shows, on a like for like basis without the one-off realised gains of USD 2.7B for Fairfax, the reported RoE would have been 1.4%.
- If we normalise for a more typical catastrophe load (equivalent to a c. 4% impact on RoE) and exclude the benefit provided by prior year reserve releases, underlying profitability improved to 3.8% from 3.3% at FY 2016.

- Underlying RoE for the SUBSET of 5.2% at FY 2017, up from 3.3% at FY 2016. On a like for like basis, the underlying RoE would have been 3.8% without the one-off realised gains of USD 2.7B for Fairfax.

### RoE analysis for the SUBSET



Note: Recalibrated due to adjustment of methodology and composition of the INDEX.

\* Reported and underlying RoEs have been adjusted to remove the one-off realised gains of USD 2.7B for Fairfax.

## Underwriting

For the INDEX:

- Aggregate reported NWP increased by 11.3% to USD 285B (FY 2016: USD 256B).
- Diversification of underwriting platforms remained a key focus for the INDEX constituents due to continued weak pricing. Reinsurance growth areas included structured P&C, cyber, mortgage and life and health business. Some constituents of the INDEX also targeted further growth in primary business.
- The reported combined ratio for the INDEX increased to 104.8% (FY 2016: 94.4%).

For the SUBSET:

### Combined Ratio analysis for the SUBSET

SUBSET	Weighted Average	
	FY 2016	FY 2017
Reported Combined Ratio	92.9%	107.4%
Favourable Development of Prior Years	6.3%	5.3%
Accident Year Combined Ratio	99.2%	112.7%
Catastrophe Loss	4.7%	18.1%
Ex-Cat Accident Year Combined Ratio	94.5%	94.6%



- The reported combined ratio for the SUBSET increased significantly to 107.4% (FY 2016: 92.9%) due to an additional 13.4 percentage point impact from Natural Catastrophe losses.
- Support from prior year reserve releases remained substantial, albeit reduced to 5.3 percentage points (FY 2016: 6.3 percentage points), due in part to the Ogden rate change.
- Excluding Natural Catastrophe losses and prior year reserve releases, the Ex-Cat Accident Year combined ratio deteriorated marginally to 94.6% (FY 2016: 94.5%).

### NEW ANALYSIS - Combined Ratio analysis for the SUBSET for severe catastrophe years

As a new exercise, Willis Re felt that it would be useful to compare the results for 2017 against two other years which also suffered severe catastrophe losses, being 2005 and 2011.

SUBSET	Weighted Average		
	FY 2005	FY 2011	FY 2017
Reported Combined Ratio	112.8%	108.2%	107.4%
Favourable Development of Prior Years	2.2%	6.8%	5.3%
Accident Year Combined Ratio	115.0%	115.0%	112.7%
Catastrophe Loss	25.8%	24.8%	18.1%
Ex-Cat Accident Year Combined Ratio	89.2%	90.2%	94.6%

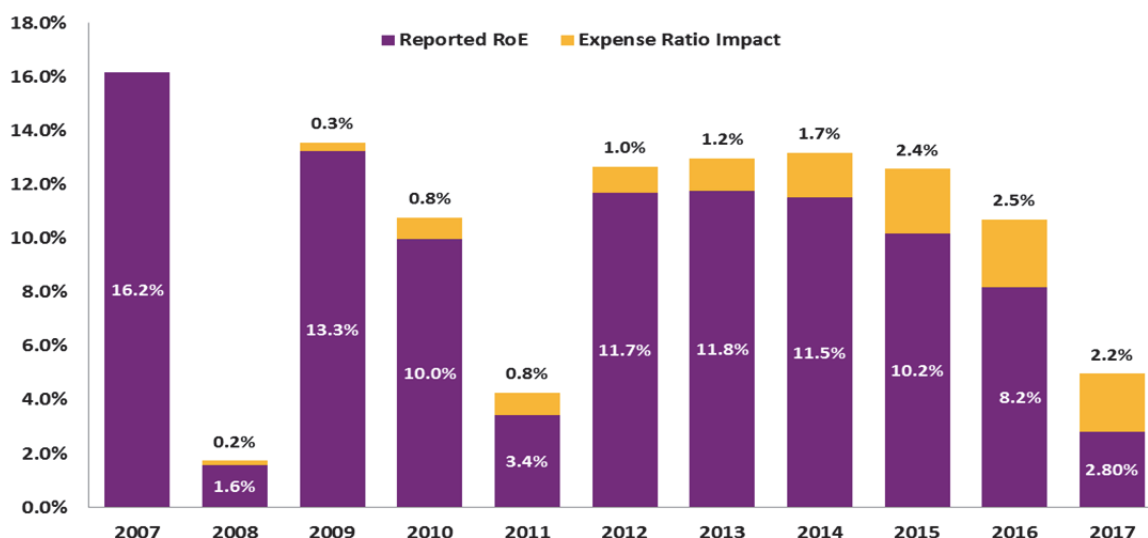
- The reported combined ratio for the SUBSET was 107.4% at FY 2017. This compared to 108.2% at FY 2011 and 112.8% at FY 2005. This difference was due to the impact from Natural Catastrophe losses at FY 2017 being 6.7 percentage points lower than at FY 2011 and 7.7 percentage points lower than at FY 2005.
- Support from prior year reserve releases of 5.3 percentage points at FY 2017 was significantly higher than 2.2 percentage points at FY 2005, albeit lower than 6.8 percentage points at FY 2011 due in part to the Ogden rate change.
- Notably, excluding Natural Catastrophe losses and prior year reserve releases, the Ex-Cat Accident Year combined ratio deteriorated further to 94.6% at FY 2017 from 90.2% at FY 2011 and 89.2% at FY 2005.
- This deterioration was due to a rise in both the Ex-Cat Accident Year loss ratio and the expense ratio during this period.

It is interesting to conclude from this analysis of the SUBSET that the reduction in underlying RoE that has been observed in the last few years is replicated within this analysis. Since 2005 and 2011, when the Ex-Cat Accident Year Combined Ratios both amounted to approximately 90%, this has deteriorated to approximately 95% in 2017.

It is difficult to attribute clear reasons for this, which could be the subject of a different study; however, the Expense Ratio chart shown on the next page illustrates one reason, being the increase in expense ratios impact on the RoE.

## Expense Ratios

### Impact of Expense Ratio Movement on RoE for the SUBSET (Base Year – 2007)



Source: SNL Financial and Willis Towers Watson Market Security

If each of the constituents of the SUBSET had been able to maintain an expense ratio at their respective 2007 levels, the aggregate RoE of 2.8% reported at FY 2017 would have been approximately 2.2 percentage points higher.

## Catastrophe Loss

- Global insured catastrophe losses increased to USD 144B (FY 2016: USD 56B) as a result of a significant increase in Natural Catastrophe losses to USD 138B (FY 2016: USD 48B) (Swiss Re Sigma figures).
- This increase in Natural Catastrophe losses was driven by hurricanes Harvey, Irma and Maria (HIM).
- Natural Catastrophe losses for the SUBSET increased by 306% to USD 22.2B.
- This equates to 18.1% of aggregate net earned premium (NEP) (FY 2016: 4.7%) or approximately a 9.3 percentage point impact after tax on the aggregate annualised RoE (FY 2016: 2.6 percentage points).

*Note: For the purposes of this report the term catastrophe loss reflects generally large single event claims as reported by the companies themselves. A catastrophe related loss may therefore not appear in our numbers as 'Cat Loss' unless it reaches a value that exceeds the company's own threshold for disclosure.*

# Capital

## Highlights for the INDEX

- Shareholders’ funds increased by 7.8% to USD 371.0B due to net income of USD 12.0B and significant support from unrealised investment gains of USD 34.7B which were not reported within net income.
- Without National Indemnity’s contribution, shareholders’ equity would have decreased marginally to USD 343.7B.
- Active capital management continued with reinsurers returning USD 15.6B to shareholders through buy-backs and dividends. Notably, the capital returned was higher than net income.
- A USD 11.6B adjustment is made to reflect the removal of MS Amlin, Endurance, Allied World and Novae from the INDEX.
- The reported RoE for the INDEX decreased significantly to 3.4% from 8.0% at FY 2016.

As shown in Chart 1, there was considerable variation in shareholders’ equity movements amongst INDEX constituents.

**Chart 1: Movement in consolidated shareholders’ equity, reported as at FY 2017 for the INDEX**



The overall increase in shareholders’ equity was reliant on significant support from unrealised investment gains of USD 34.7B which were not reported within net income, USD 30.2B of which was due to an increase in the valuation of National Indemnity Co’s US equity holdings.

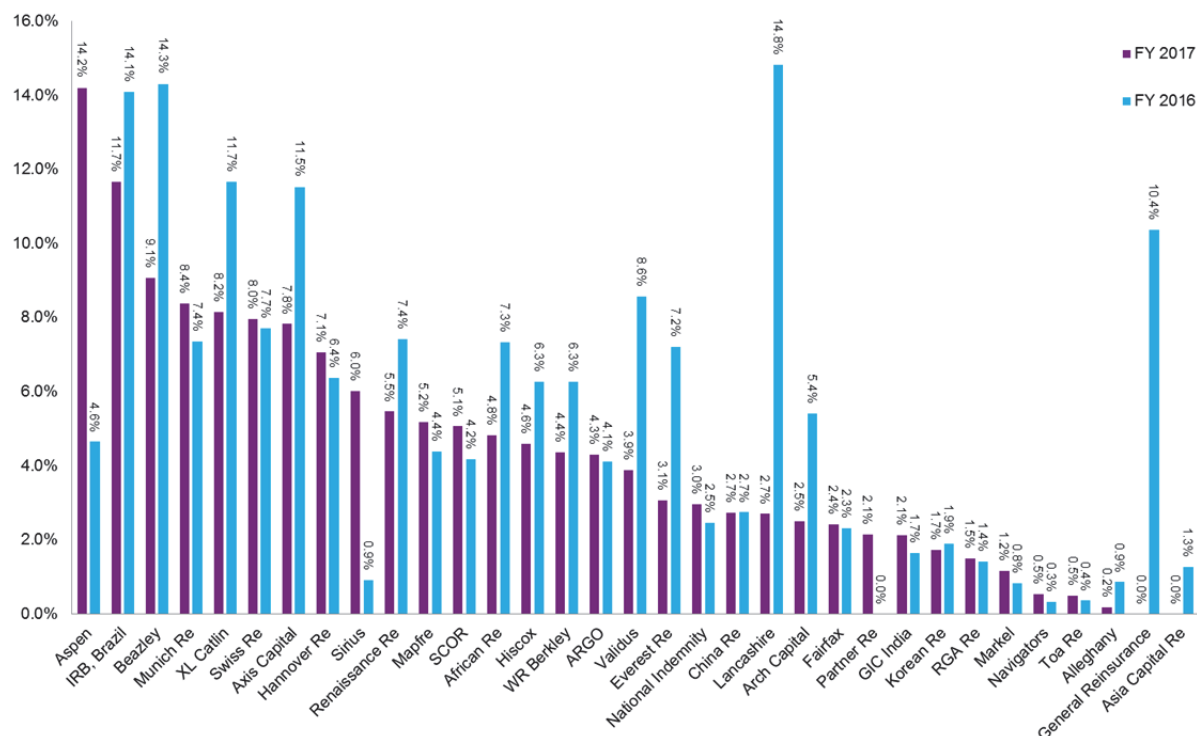
We would note that net income would have been materially worse but for the support provided by continued significant prior year reserve releases. Profitability was also heavily reliant on significant realised investment gains of USD 9.7B (FY 2016: USD 7.0B). This increase was supported by one-off investment gains of USD 2.7B which were realised by Fairfax following the sale of two subsidiaries and equity gains.

Partially offsetting these positive contributions, an adjustment of USD 11.6B was made to reflect the removal of MS Amlin, Endurance, Allied World and Novae from the INDEX. Additionally, USD 15.6B of capital was returned through share buybacks and dividends which exceeded net income.

## Active Capital Management

Reinsurers continued to focus on diversifying their underwriting portfolios due to the challenging rating environment. Capital was reallocated to certain reinsurance classes which included structured P&C, cyber, mortgage and life and health business. Some constituents of the INDEX also continued to reallocate capital to primary business. Active capital management continued due to significant excess capacity, despite the impact of substantial Natural Catastrophe losses.

**Chart 2: Capital returned through share buybacks and ordinary and special dividends for the INDEX**



USD 15.6B of capital was returned by the constituents of our INDEX through share buybacks and dividends (FY 2016: USD 16.4B). Ordinary and special dividends accounted for USD 11.2B (FY 2016: USD 10.6B) and share buybacks accounted for USD 4.4B (FY 2016: USD 5.8B).

As shown in Table 1, new authorisations for large share buyback programs continued in 2017. Looking ahead, the challenge of significant excess capital continues despite the substantial Natural Catastrophe losses in 2017. As a result, we expect the INDEX constituents to continue to make use of share buybacks in the remainder of 2018 as part of their active capital management strategy.



**Table 1: Recent announcements of share repurchase programs for the INDEX**

Company	Date	Action	Capacity outstanding as % of Shareholders' Equity, Dec 31, 2017
<b>Everest Re</b>	19-Nov-14	Approved an increase in its share repurchase authorisation by a further 30 million shares.	4.4%
<b>Alleghany</b>	01-Nov-15	USD 400M repurchase programme authorised upon completion of the 2014 programme. USD 363.2M remained outstanding at FY 2017.	4.3%
<b>Argo</b>	03-May-16	Authorised a repurchase programme of up to USD 150M of common shares which supersedes all previous authorisations. USD 85M remained outstanding at December 31, 2017.	4.7%
<b>Axis</b>	09-Dec-16	Following the offer to acquire Novae on July 5, 2017, the Company suspended its share repurchase programme. The share repurchase programme expired on December 31, 2017. A repurchase plan has not been authorised for 2018.	0.0%
<b>RGA Re</b>	26-Jan-17	Authorised a repurchase programme of up to USD 400M of common stock which replaced the 2016 repurchase authorisation. During 2017, RGA Re repurchased USD 26.9M of common shares under this program.	3.9%
<b>Aspen</b>	08-Feb-17	Approved a new share repurchase authorisation programme of USD 250M. As at December 31, 2017, USD 220M remained unutilised.	7.5%
<b>XL Catlin</b>	17-Feb-17	Approved a new programme to buyback up to USD 1B of XL Group shares. At FY 2017 USD 470.9M of shares had been repurchased and cancelled. USD 529.1M remained available for purchase at December 31, 2017.	5.4%
<b>Beazley</b>	24-Mar-17	Shareholders approved authority to repurchase up to 52.3 million shares expiring by June 24, 2018	10.0%
<b>Lancashire</b>	03-May-17	Approved renewal of a repurchase programme of up to 20.1 million shares, to expire on conclusion of the 2018 AGM. The programme was unutilised at December 31, 2017	10.0%
<b>Scor</b>	27-Jul-17	Announced a buyback programme for up to EUR 200M of common shares. This is to be conducted within the framework approved by the AGM on April 27, 2017, which authorised a buyback program capped at 10% of share capital. EUR 5.9M of shares were repurchased in 2017.	3.1%
<b>WR Berkley</b>	08-Aug-17	Share repurchase authorisation was increased to 10 million shares of which 9.27 million shares remain unutilised at December 31, 2018.	7.6%
<b>Fairfax</b>	28-Sep-17	Authorised acquisition of up to 2.7 million subordinate voting shares until expiry on September 27, 2018.	7.7%
<b>Renaissance Re</b>	10-Nov-17	Announced an increase in its equity buyback plan, increasing its remaining authorisation back up to USD 500M, all of which remained unutilised as at December 31, 2017.	11.4%
<b>Validus</b>	27-Feb-18	USD 2.7B of common shares repurchased from the inception of its share repurchase programme to February 27, 2018. USD 293.4M remained outstanding at December 31, 2017.	7.5%
<b>Munich Re</b>	15-Mar-18	Repurchase programme authorised for up to EUR 1B, commencing April 25, 2018, valid until its AGM is held on April 30, 2019.	3.6%
<b>Swiss Re</b>	04-Apr-18	Announced intention to propose a public share buyback programme of up to CHF 1B which will remain open until the 2018 AGM. Buybacks under the CHF 1B programme announced in February 2017 commenced on November 3, 2017. The 2017 programme was fully utilised on February 16, 2018. CHF 415M remained unutilised under the 2018 programme at December 31, 2017	4.3%

# Earnings

For the INDEX:

- As shown in chart 3, the RoE for the INDEX deteriorated significantly to 3.4% (FY 2016: 8.0%) due to the impact of substantial Natural Catastrophe losses, albeit offset in part by continued significant prior year reserve releases and support from realised investment gains of USD 9.7B (FY 2016: USD 7.0B).
- Investment yields for the INDEX remained unchanged at 2.9%. As shown in Chart 12, a number of the INDEX constituents reported investment yields which were materially lower than this average.
- The aggregate reported combined ratio for the INDEX increased to 104.8% (FY 2016: 94.4%).

**Chart 3: FY 2017 net income as % of average shareholders' equity (RoE) for the INDEX**



For the SUBSET:

- The reported RoE of the SUBSET deteriorated significantly to 2.8% (FY 2016: 8.2%) due to substantial Natural Catastrophe losses.
- On a like for like basis, the reported RoE would have been 1.4% without the one-off investment gains of USD 2.7B which were realised by Fairfax following the sale of two subsidiaries and equity gains.
- Support from prior year reserve releases remained significant at 2.9 percentage points, albeit reduced from 3.5 percentage points at FY 2016 due in part to the Ogden rate change.
- Reported RoEs continued to benefit from significant realised investment gains, largely due to rising stock markets during 2017.
- In the remainder of 2018, downward pressure on RoEs may result if the quantum of prior year reserve releases or realised investment gains reduces.

Reinsurers continue to diversify their underwriting platforms due to persistent weak pricing, targeting growth in certain lines of business including structured P&C, cyber, mortgage and life and health business.

# Underwriting Performance

For the INDEX:

- Due to ongoing rating pressure, reinsurers continued to diversify their underwriting through increased capital allocation to primary business and certain reinsurance classes including life, health, cyber and mortgage business.
- Large structured transactions supported growth for certain constituents of the INDEX.
- Substantial Natural Catastrophe losses resulted in significant deterioration in combined ratios, albeit offset in part by continued support from significant prior year reserve releases.
- Additionally, earnings continued to be pressured by increasing expense bases.
- However, profitability benefited from a further reduction in insured Man-made Catastrophe losses to USD 6B compared to USD 8B at FY 2016. (Swiss Re Sigma figures).

For the SUBSET:

- Excluding Natural Catastrophe losses and prior year reserve releases, the Ex-Cat Accident Year combined ratio deteriorated marginally to 94.6% (FY 2016: 94.5%, FY 2015: 94.5%).
- The expense ratio has decreased marginally to 32.5% (FY 2016: 33.2%, FY 2015: 33.1%).

SUBSET	Weighted Average		
	FY 2015	FY 2016	FY 2017
Reported Combined Ratio	89.3%	92.9%	107.4%
Favourable Development of Prior Years	6.7%	6.3%	5.3%
Accident Year Combined Ratio	96.0%	99.2%	112.7%
Catastrophe Loss	1.5%	4.7%	18.1%
Ex-Cat Accident Year Combined Ratio	94.5%	94.5%	94.6%

## Premium Volumes

Chart 4 shows that FY 2017 net written premium (NWP) for the INDEX increased by approximately 11.3% from FY 2016.

Factors influencing this growth include:

- Premium growth for a number of the INDEX constituents has been supported through mergers or acquisitions, including Arch Capital (acquired United Guaranty).
- Due to substantial Natural Catastrophe losses, reinstatement premiums and additional cover purchases provided significant support to premium levels.
- The substantial growth of 140.8% reported by Asia Capital Re largely reflected a change in financial year-end.
- Factors supporting the 84.3% growth reported by GIC India included significant growth in the domestic insurance market as well as expansion of its overseas business. The 61.0% growth reported by General Reinsurance reflected a change in distribution arrangements.
- Additional pro rata business and large tailored transactions, including for structured business, supported growth for some reinsurers.
- The INDEX constituents continued to focus on underwriting diversification. Target growth areas included structured P&C, cyber, mortgage and life and health business. Some constituents of the INDEX also targeted further growth in primary business.

- A number of reinsurers reduced premium volumes due to continued pricing pressure, including for U.S. catastrophe business. Double digit premium reductions were reported by Lancashire and Aspen.

**Chart 4: FY 2017 movement in net written premium for the INDEX**



## Combined Ratios

Combined ratios deteriorated significantly due to substantial Natural Catastrophe losses.

For the INDEX:

- The reported combined ratio weakened to 104.8% (FY 2016: 94.4%) due to significant Natural Catastrophe losses, notably the HIM losses.
- This result would have been materially worse but for the support provided by significant realised investment gains and substantial prior year reserve releases.

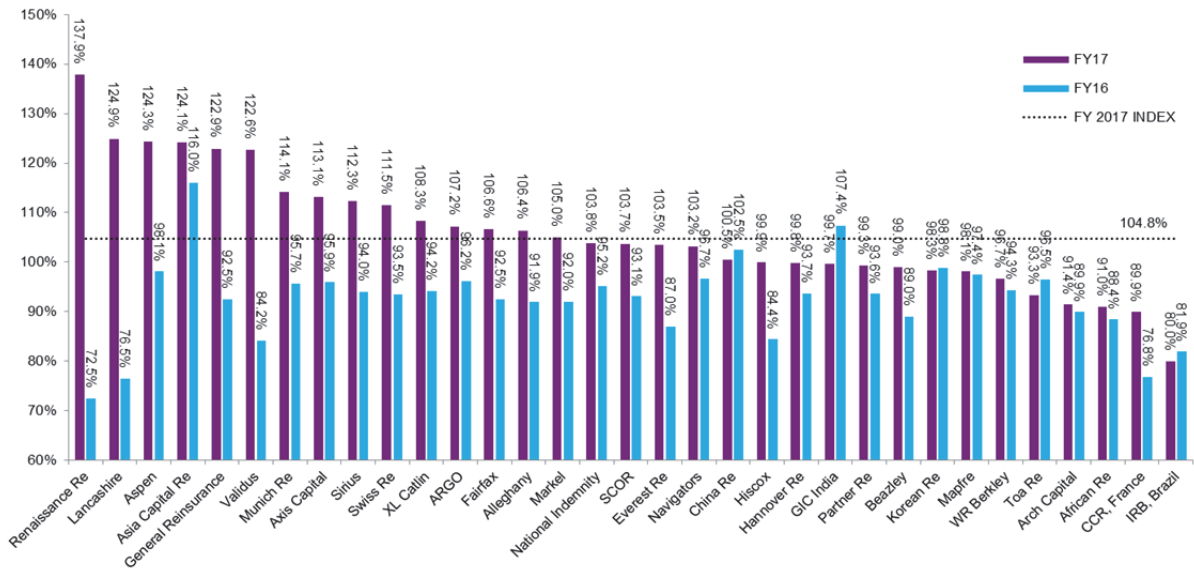
For the SUBSET:

- The reported combined ratio for the SUBSET deteriorated significantly to 107.4% (FY 2016: 92.9%), largely due to an additional 13.4 percentage point impact from Natural Catastrophe losses.
- Support from prior year reserve releases remained substantial, albeit reduced to 5.3 percentage points (FY 2016: 6.3 percentage points), due in part to the Ogden rate change.
- Excluding Natural Catastrophe losses and prior year reserve releases, the Ex-Cat Accident Year combined ratio deteriorated marginally to 94.6% (FY 2016: 94.5%).
- A number of reinsurers reported further pockets of adverse reserve development for certain casualty lines of business.
- The March 2017 changes to U.K.-specific discount rates (in the government’s actuarial “Ogden Tables”) have caused some reserve increases for certain reinsurers.

Chart 5 shows the reported combined ratio for the INDEX constituents at FY 2017 compared to FY 2016. The reported combined ratio deteriorated to 104.8% (FY 2016: 94.4%) due to substantial Natural Catastrophe losses. This result would have been materially worse but for continued support from significant prior year reserve releases.



**Chart 5: FY 2017 reported combined ratios for the INDEX**



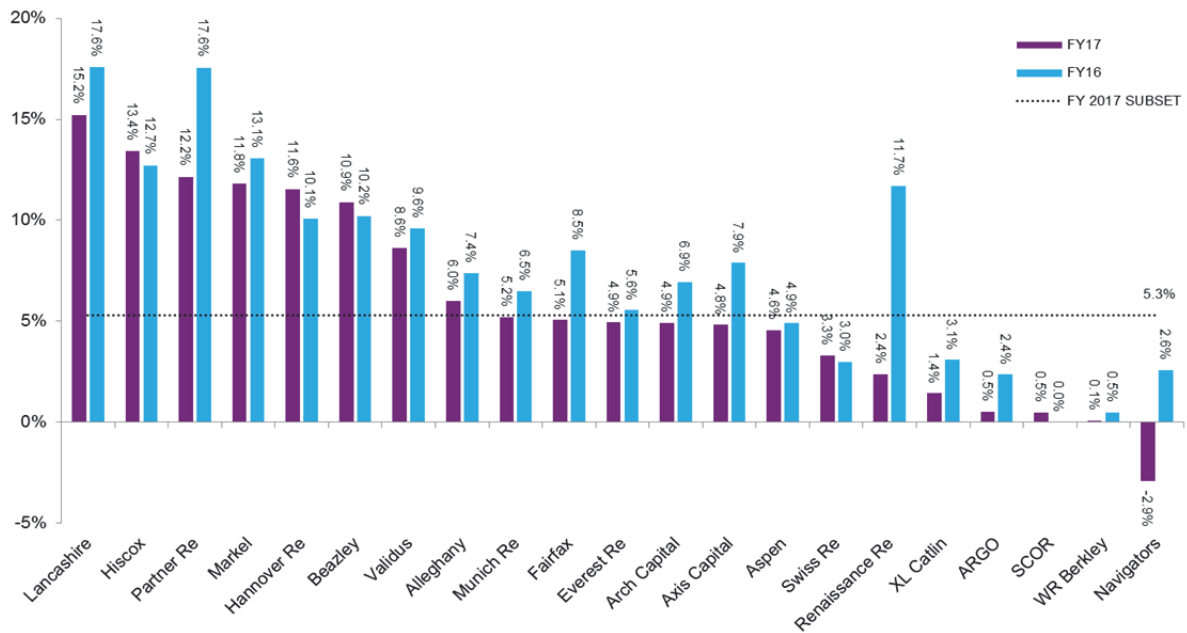
In the subsections below we discuss the key components of the combined ratio for the SUBSET:

- Impact of prior year loss reserve development
- Catastrophe loss component
- Underlying accident year combined ratio (i.e. excluding the above two components).

**Prior Year Loss Development**

At FY 2017 the aggregate combined ratio for the SUBSET benefited by 5.3 percentage points due to continued significant prior year reserve releases (FY 2016: 6.3 percentage points). Chart 6 shows the effect of prior year reserve releases on the SUBSET:

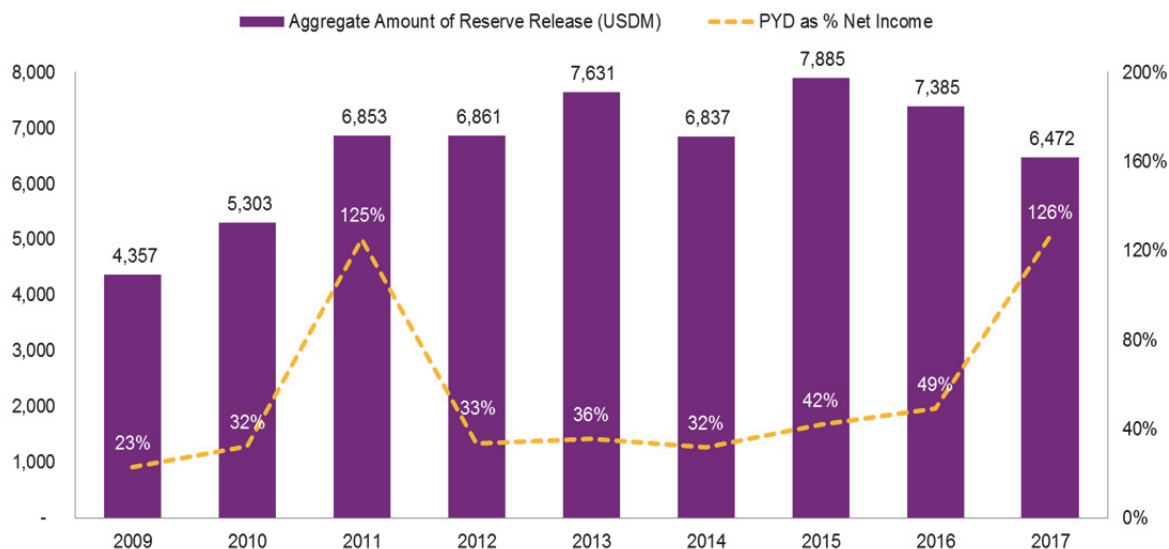
**Chart 6: Prior year reserve development as % NEP for the SUBSET**



Reinsurers continued to rely on support from prior year reserve releases to buoy net income. The quantum of prior year reserve releases remained substantial in 2017, albeit reduced from the prior year due in part to the Ogden rate change. Further pockets of adverse reserve development were reported by a number of reinsurers for certain casualty lines of business.

The SUBSET constituents have generated over 126% of net income through prior year reserve releases. This significant increase from 49% at FY 2016 is due to the drop in net income as a result of substantial Natural Catastrophe losses.

**Chart 7: Prior Year Reserve Development across the SUBSET**



Note: Aggregate prior year reserve release calculated before tax.

### Catastrophe Losses

Global insured catastrophe losses increased to USD 144B (2016: USD 56B), due to a significant increase in insured Natural Catastrophe losses to USD 138B (2016: USD 48B) (Swiss Re Sigma figures). This increase in Natural Catastrophe losses was driven by the HIM losses. Insured Man-made Catastrophe losses reduced to USD 6B compared to USD 8B at FY 2016.

As shown in Table 2, the costliest events included the HIM losses, and US wildfires, thunderstorms, and tornadoes.

**Table 2: Major Losses FY 2017**

(Insured loss estimate USD millions)

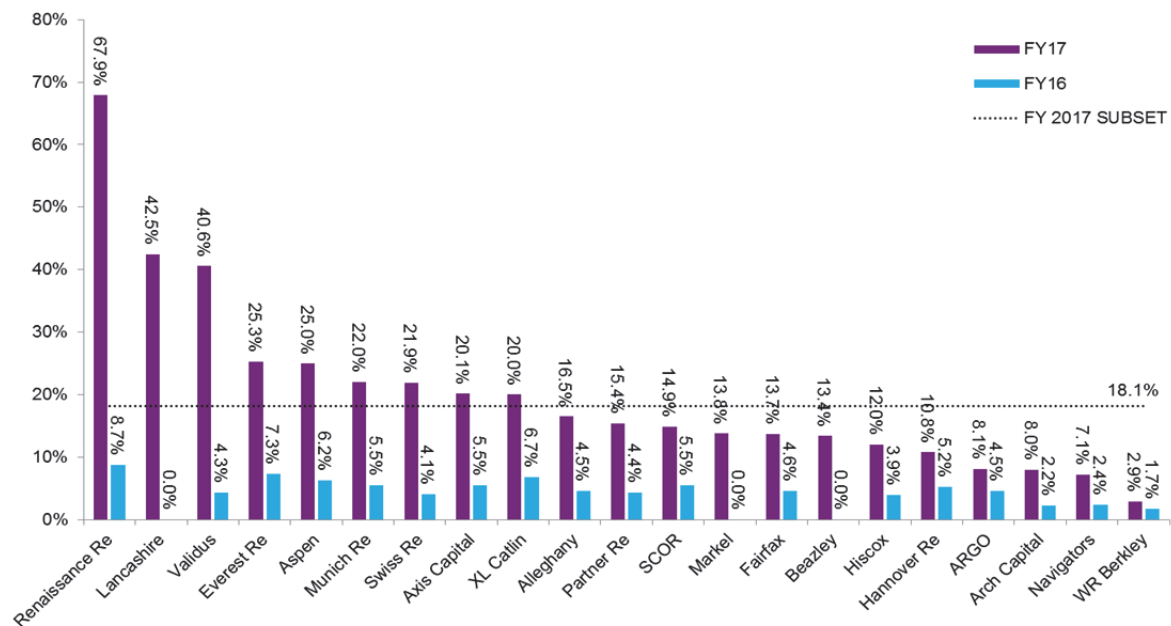
Natural Catastrophe Losses		
Start date	Description	Estimate
19 September	Hurricane Maria	32,000
6 September	Hurricane Irma	30,000
25 August	Hurricane Harvey	30,000
8 October	Northern California wildfires, USA	10,900
8 May	US Hailstorm (Colorado), thunderstorms and tornadoes	2,500
26 March	US Hailstorm, thunderstorms and tornadoes	2,000
4 December	Southern California Wildfires, USA	1,800
6 March	South/Southeast Severe Weather, USA	1,600
11 June	Minnesota hail	1,500
28 February	US Hailstorm, thunderstorms and tornadoes	1,400
28 March	Cyclone Debbie, Australia	1,300
19 September	Central Mexico Earthquake	1,200

Large Man-Made Losses		
Date	Description	Estimate
11 January	Takreer Ruwais refinery fire, Abu Dhabi	800 - 1,000
5 January	Mexico riots	200 - 250
14 June	Grenfell Tower fire, UK	50 - 200

Loss estimates shown are taken from Swiss Re Sigma and other public sources and should not be taken as confirmation by Willis Towers Watson of reported losses.

As shown in Chart 8, the weighted average combined ratio of the SUBSET included 18.1 percentage points due to catastrophe losses, a significant increase from 4.7 percentage points at FY 2016.

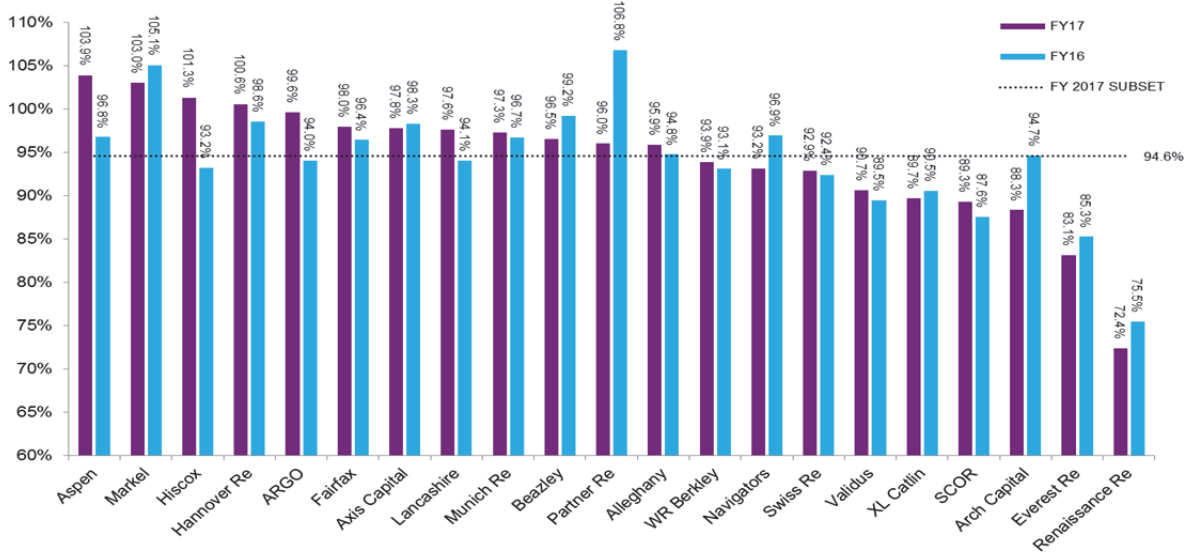
**Chart 8: Catastrophe loss component of combined ratio as % NEP for the SUBSET**



### Accident Year Performance, ex Catastrophe

Excluding Natural Catastrophe losses and prior year reserve releases, the accident year combined ratio deteriorated marginally to 94.6% (FY 2016: 94.5%).

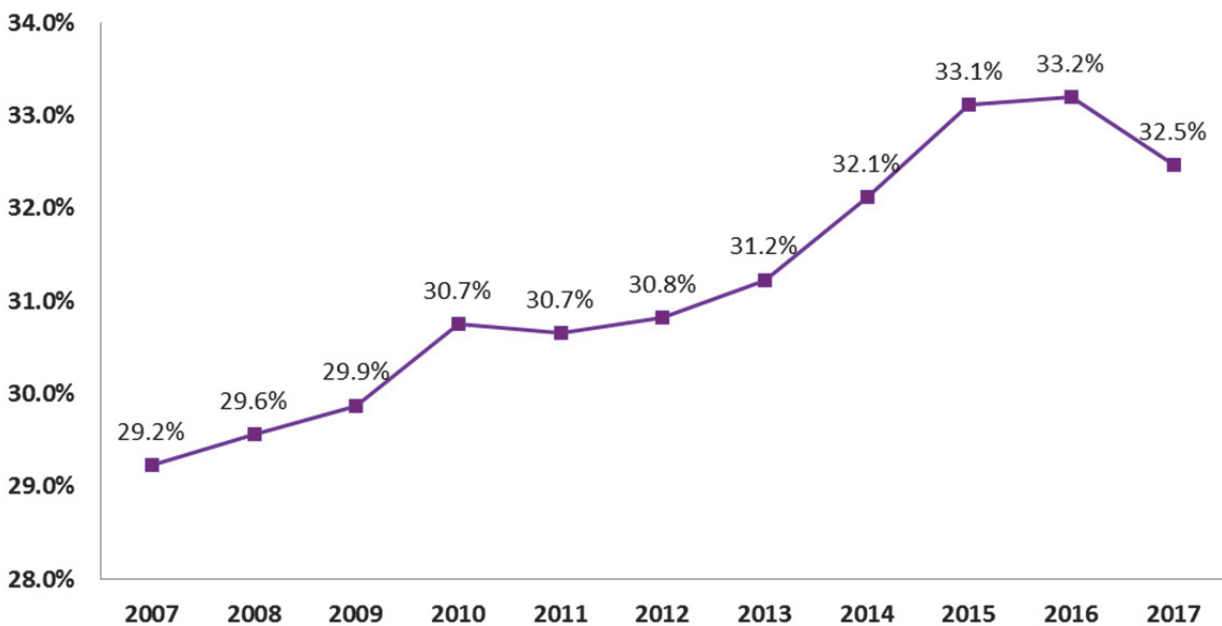
**Chart 9: Ex Catastrophe accident year combined ratios for the SUBSET**



### Expense Ratios for the SUBSET

The expense ratio decreased to 32.5% from 33.2% at FY 2016. The decrease in the expense ratio was due to higher net earned premium as a result of reinstatement premiums and additional cover purchases. The aggregate expense ratio for the SUBSET has risen by 3.3 percentage points over the last 10 years.

**Chart 10: Weighted Average Expense Ratio for the SUBSET**

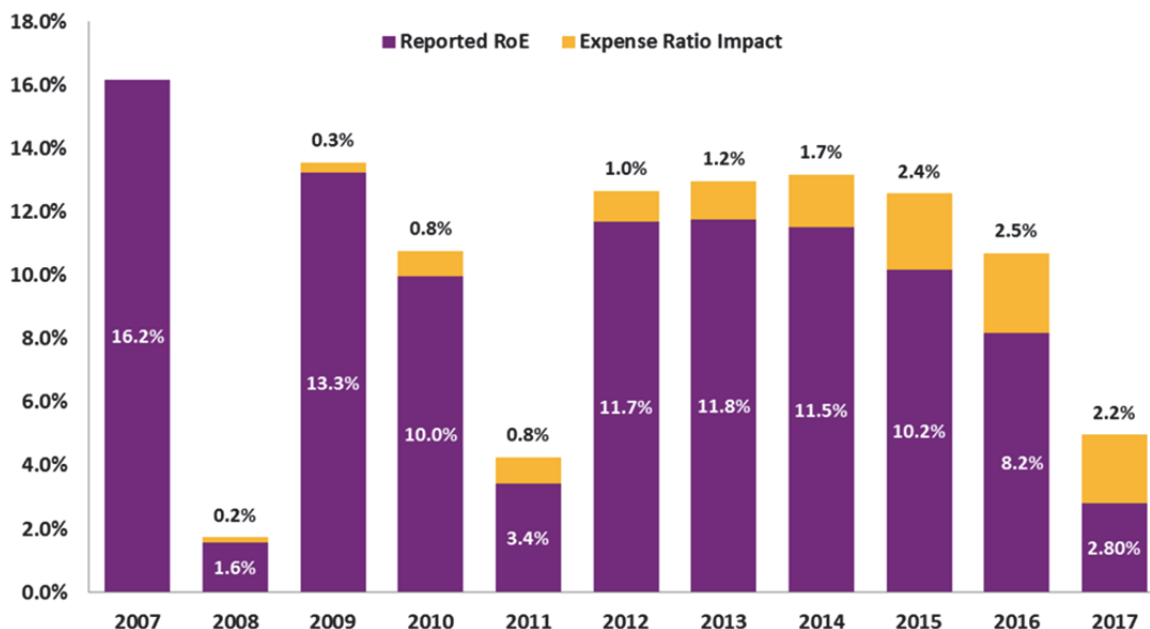


Source: SNL Financial and Willis Towers Watson Market Security



- Reinsurers continue to face the challenge of upward pressure on expenses. The expense ratio was flattered in 2017 due to rising reinstatement premiums.
- If each of the constituents of the SUBSET had been able to maintain an expense ratio at their respective 2007 levels, the aggregate RoE of 2.8% reported at FY 2017 would have been approximately 2.2 percentage points higher.

**Chart 11: Impact of Expense Ratio Movement on RoE (Base Year – 2007) for the SUBSET**



Source: SNL Financial and Willis Towers Watson Market Security

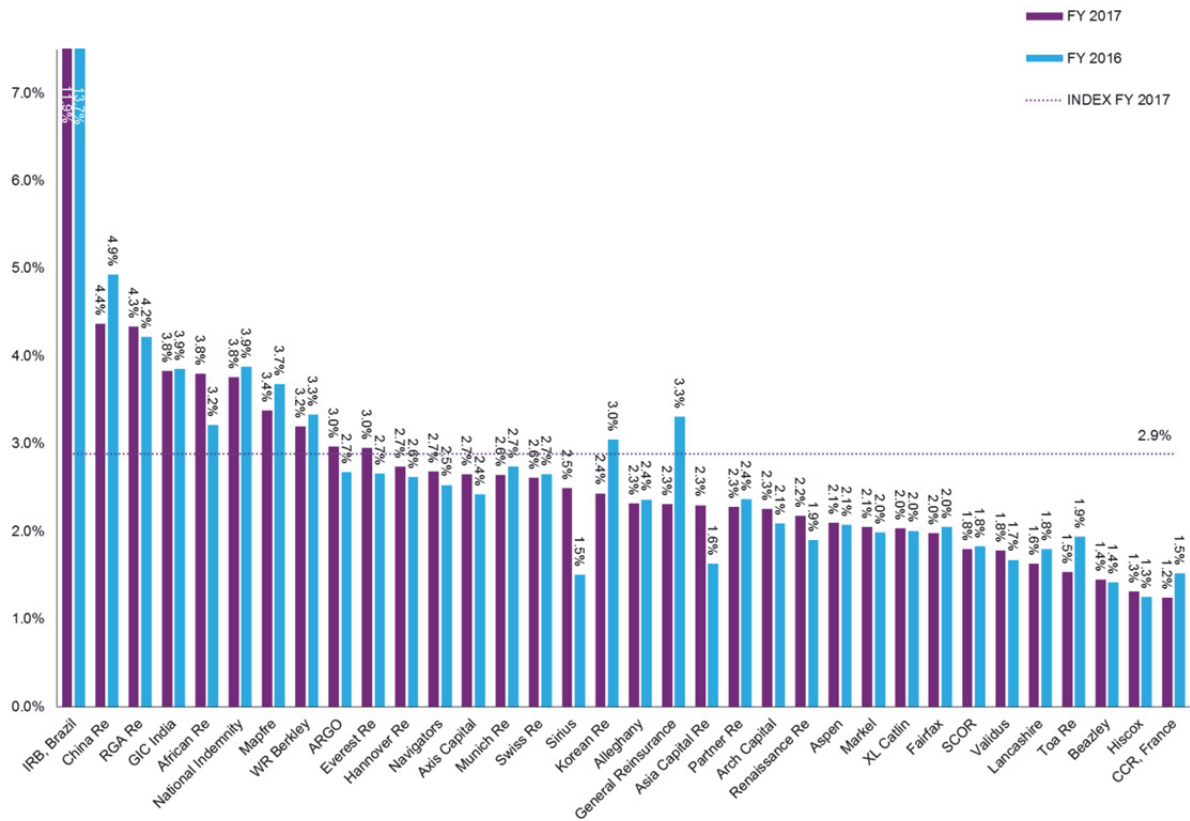
## Modest Investment Returns

As shown in Chart 12, the weighted average investment return for the INDEX, excluding realised and unrealised gains, remained unchanged at 2.9%.

This yield was supported by higher than average returns from certain INDEX constituents with longer duration portfolios due to their significant Life business. Although the investment yields of non-life focused reinsurers were typically somewhat lower than this average, overall returns were supported by significant realised investment gains, largely due to rising equity values. Notably, Fairfax realised one-off investment gains of USD 2.7B following the sale of two subsidiaries and equity gains. Other INDEX constituents to realise significant investment gains included Swiss Re, Hannover Re and SCOR. Unrealised gains also increased substantially, largely due to an increase in the valuation of National Indemnity Co’s US equity holdings.

Looking ahead, the outlook remains challenging due to continued low interest rates. However, some support will be provided by the further increase in US interest rates in March 2018 which followed three increases in 2017.

**Chart 12: Investment yield (net investment income as % of cash and invested assets) for the INDEX**



# Appendix

## Full Year 2017 results summary for the Willis Reinsurance Index

Consolidated Data (Millions)	Notes	Ccy	Shareholder's Equity					Net Written Premium					Net Income					Combined Ratio					
			FY 2017	FY 2016	FY 2015	Δ FY	FY 2017	FY 2016	FY 2015	Δ FY	FY 2017	FY 2016	FY 2015	Δ FY	FY 2017	FY 2016	FY 2015	Δ FY	FY 2017	FY 2016	FY 2015	Δ FY	
African Re	(5)	USD	-	812	780	7.2%	-	557	593	-2.5%	100	104	-	12.6%	-	91.0%	88.4%	-	106.4%	91.9%	89.0%	+14.5%	
Alleghany		USD	8,514	7,940	7,555	7.2%	4,966	5,092	4,489	-2.5%	90	457	560	-80.3%	1.1%	5.9%	106.4%	91.9%	89.0%	106.4%	91.9%	89.0%	+14.5%
Arch Capital		USD	9,197	8,254	6,205	11.4%	4,961	4,031	3,818	23.1%	619	693	538	-10.6%	7.1%	9.6%	91.4%	89.3%	89.5%	91.4%	89.3%	89.5%	+2.1%
ARGO		USD	1,820	1,793	1,668	1.5%	1,654	1,440	1,402	14.8%	50	147	163	-65.7%	2.8%	8.5%	107.2%	96.2%	95.2%	107.2%	96.2%	95.2%	+11.0%
Asia Capital Re	(5)	USD	-	772	791	1.5%	-	298	124	14.8%	-	-17	-38	-	-2.2%	-	124.1%	116.0%	-	107.2%	96.2%	95.2%	+11.0%
Aspen		USD	2,926	3,647	3,419	-19.8%	2,213	2,594	2,646	-14.7%	-266	203	323	-	-8.1%	5.8%	124.3%	98.1%	91.9%	124.3%	98.1%	91.9%	+26.2%
Axis Capital		USD	5,341	6,272	5,867	-14.8%	4,027	3,753	3,675	7.3%	-369	513	642	-	-6.4%	8.5%	113.1%	95.9%	94.7%	113.1%	95.9%	94.7%	+17.2%
Beazley	(1)	USD	1,499	1,484	1,441	1.0%	1,979	1,854	1,713	6.7%	130	251	249	-48.2%	8.7%	17.2%	99.0%	89.0%	87.0%	99.0%	89.0%	87.0%	+10.0%
CCR, France	(1)(4)(5)	EUR	-	2,400	2,359	4.5%	-	1,315	1,287	21.4%	-	141	218	-	5.9%	-	89.9%	76.8%	-	99.0%	89.0%	87.0%	+10.0%
China Re	(1)	CNY	74,367	71,182	70,187	4.5%	100,935	83,140	74,679	21.4%	5,256	5,146	7,579	2.1%	7.2%	7.3%	104.0%	102.5%	102.4%	104.0%	102.5%	102.4%	+1.5%
Everest Re		USD	8,369	8,075	7,609	3.6%	6,245	5,271	5,182	18.5%	469	996	978	-52.9%	5.7%	12.7%	103.5%	87.0%	85.1%	103.5%	87.0%	85.1%	+16.5%
Fairfax		USD	13,811	9,820	10,287	40.6%	9,984	8,088	7,521	23.4%	1,741	-513	568	-	14.7%	-5.1%	106.6%	92.5%	89.9%	106.6%	92.5%	89.9%	+14.1%
General Reinsurance**		USD	11,393	10,661	11,051	6.9%	886	550	548	61.0%	301	742	571	-59.5%	2.7%	6.8%	122.9%	92.5%	95.5%	122.9%	92.5%	95.5%	+30.4%
GIC India	(1)(2)(6)	INR	484,821	392,826	419,405	23.4%	301,746	163,748	138,570	84.3%	31,278	28,485	26,938	9.8%	7.1%	7.0%	99.7%	107.4%	109.0%	99.7%	107.4%	109.0%	-7.7%
Hannover Re	(1)(8)	EUR	8,528	8,997	8,068	-5.2%	16,094	14,604	14,850	10.2%	959	1,171	1,151	-18.2%	10.9%	13.7%	99.8%	93.7%	94.4%	99.8%	93.7%	94.4%	+6.1%
Hiscox		GBP	1,754	1,818	1,828	-3.5%	1,884	1,788	1,572	4.3%	26	337	210	-92.2%	1.5%	20.1%	99.9%	84.2%	85.0%	99.9%	84.2%	85.0%	+15.7%
IRB Brazil	(3)(7)	BRL	3,581	3,328	3,175	7.6%	3,906	3,502	2,921	11.5%	925	850	764	8.8%	26.8%	26.1%	80.0%	81.9%	84.9%	80.0%	81.9%	84.9%	-1.9%
Korean Re	(1)	KRW/bn	2,163	2,112	2,017	2.4%	5,022	4,698	4,369	6.9%	133	160	187	-16.9%	6.2%	7.8%	98.3%	98.8%	97.3%	98.3%	98.8%	97.3%	-0.5%
Lancashire		USD	1,107	1,207	1,220	-8.3%	398	459	482	-13.2%	-71	154	181	-	-6.1%	12.7%	124.9%	76.5%	72.1%	124.9%	76.5%	72.1%	+48.4%
Mapfre	(3)	EUR	8,611	9,127	8,574	-5.6%	19,309	19,038	17,988	1.4%	701	775	709	-9.7%	7.9%	8.8%	98.1%	97.4%	98.6%	98.1%	97.4%	98.6%	+0.7%
Markel		USD	9,504	8,461	7,834	12.3%	4,418	4,001	3,819	10.4%	395	456	583	-13.3%	4.4%	5.6%	105.0%	92.0%	89.0%	105.0%	92.0%	89.0%	+13.0%
Munich Re	(1)(8)	EUR	28,012	31,516	30,668	-11.1%	47,550	47,325	48,505	0.5%	375	2,580	3,107	-85.5%	1.3%	8.3%	114.1%	95.7%	89.7%	114.1%	95.7%	89.7%	+18.4%
National Indemnity**		USD	128,563	101,286	89,829	26.9%	24,031	20,030	18,457	20.0%	2,080	7,577	7,271	-72.6%	1.8%	7.9%	103.8%	95.2%	93.2%	103.8%	95.2%	93.2%	+8.6%
Navigators		USD	1,226	1,178	1,096	4.1%	1,271	1,186	1,044	7.2%	40	83	81	-51.1%	3.4%	7.3%	103.2%	96.7%	94.1%	103.2%	96.7%	94.1%	+6.5%
Partner Re	(1)	USD	6,745	6,688	6,901	0.9%	5,120	4,954	5,230	3.4%	264	447	104	-41.0%	3.9%	6.6%	99.3%	93.6%	85.6%	99.3%	93.6%	85.6%	+5.7%
RenaissanceRe		USD	4,391	4,867	4,732	-9.8%	1,871	1,535	1,416	21.9%	-222	503	431	-	-4.8%	10.5%	111.5%	93.5%	87.4%	111.5%	93.5%	87.4%	+18.0%
REGA Re	(1)(3)	USD	9,570	7,093	6,135	34.9%	9,841	9,249	8,571	6.4%	1,822	701	502	159.8%	21.9%	10.6%	137.9%	72.5%	64.7%	137.9%	72.5%	64.7%	+65.4%
SCOR	(1)	EUR	6,195	6,661	6,330	-7.0%	13,464	12,577	12,077	7.1%	286	603	642	-52.6%	4.4%	9.3%	103.7%	93.1%	91.1%	103.7%	93.1%	91.1%	+10.6%
Sirius	(1)(8)	USD	1,827	2,208	2,183	-17.2%	1,089	938	848	16.0%	-160	88	326	-	-8.0%	4.0%	112.3%	94.0%	81.5%	112.3%	94.0%	81.5%	+18.3%
Swiss Re	(1)(2)	USD	34,124	35,634	33,517	-4.2%	32,316	33,570	30,442	-3.7%	331	3,558	4,597	-90.7%	0.9%	10.3%	111.5%	93.5%	87.4%	111.5%	93.5%	87.4%	+18.0%
Toa Re	(1)(2)	JPY/bn	192	181	199	6.1%	224	224	208	-	11	6	6	85.3%	5.6%	3.0%	93.3%	96.5%	94.0%	93.3%	96.5%	94.0%	-3.2%
Validus		USD	3,895	3,838	3,639	1.5%	2,481	2,359	2,229	5.2%	-48	359	375	-1.2%	9.6%	9.6%	122.6%	84.2%	79.7%	122.6%	84.2%	79.7%	+38.4%
WR Berkley		USD	5,411	5,047	4,600	7.2%	6,261	6,424	6,190	-2.5%	549	602	504	-8.8%	10.5%	12.5%	96.7%	94.3%	93.7%	96.7%	94.3%	93.7%	+2.4%
XL Catlin		USD	9,848	10,939	11,677	-10.0%	10,681	10,243	7,951	4.3%	-560	441	1,207	-	-5.4%	3.9%	108.3%	94.2%	92.0%	108.3%	94.2%	92.0%	+14.1%
Aggregate***		USD	357,642	334,515	314,002	6.9%	276,378	254,599	244,032	8.6%	11,217	26,242	29,459	-57.3%	3.3%	8.1%	105.5%	94.4%	100.0%	105.5%	94.4%	100.0%	+11.1%

NB : Shaded rows in the above summary denote SUBSET groups.

- \* Full year Net Income as % of Average Shareholders' Equity.
- \*\* General Reinsurance and National Indemnity: Numbers are sourced from unconsolidated financial statements.
- \*\*\* Aggregate = Total of numbers reported, converted to USD at exchange rates prevailing at end of reporting period.

- (1) NWP includes both Life and Non-Life business.
- (2) GIC India, Toa Re: Each has a March 31 financial year-end. Data for the year ended March 31, 2017 is included in the column headed FY 2017 (and similar for prior years).
- (3) Figures for net premiums are Net Earned Premium, not Net Written Premiums.
- (4) CCR, France: Figures for net premiums are Gross Written Premiums, not Net Written Premiums, and include both State-backed and Open Market business.
- (5) Annual information for 2017 not released at time of publication.
- (6) GIC India: Shareholders' Equity as reported by GIC, parent company.
- (7) Combined ratios are Willis Towers Watson Market Security Calculations.
- (8) Hannover, Munich Re, Swiss Re: Combined Ratios are in respect of the P&C Reinsurance division only.

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