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## SUMMARY

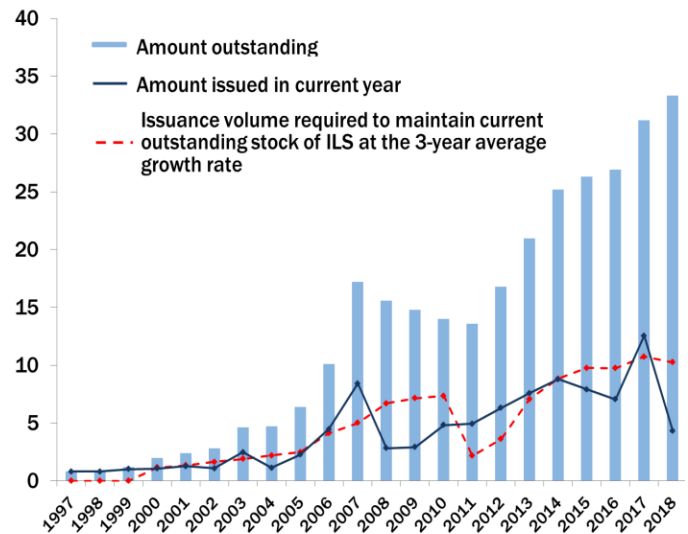
The net new risk capital issued for Q1-2018 from 17 new deals and 11 maturing deals was \$2.2 billion. Issuance volume in Q1-2018 increased year after year.

Full issuance in Q1 -2018 was \$4.3 billion with \$2.1 billion maturing. This brought the total amount of outstanding ILS coverage to approximately \$33.3 billion.

Bermuda remains the leading jurisdiction for the issuance of ILS. ILS issued from Bermuda represents 74.5% (\$24.8 of \$33.3 billion) of total outstanding capacity at the end of Q1-2018.

A total of 104 foreign ILS (comprising 171 tranches) are listed on the BSX with an aggregate nominal value of \$25.8 billion. Approximately \$1.4 billion (5.4%) of these deals were issued by vehicles domiciled in Ireland and the United States. Eleven new ILS deals totalling \$2.7 billion were listed on the BSX during the quarter while eight deals in the amount of \$1.2 billion matured.

Figure 1. Global Capacity Issues and Outstanding by Year (In US\$ bln)



Source: Swiss Re, Artemis and BMA Staff

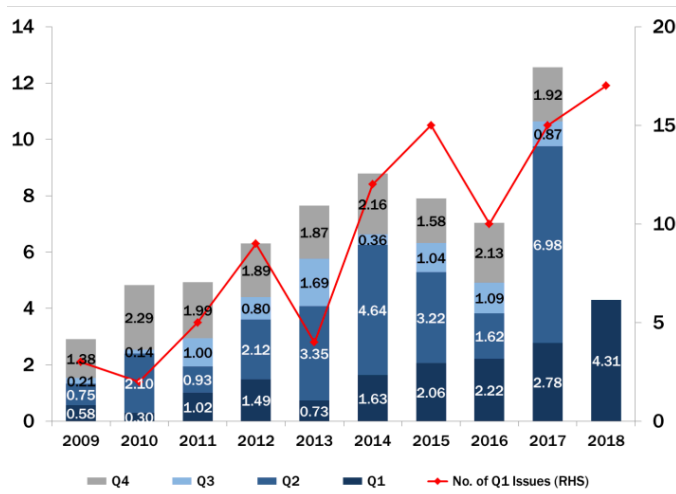
\*Notes programmes are excluded from the number of BSX listings. Moreover, the aggregate nominal value of listed ILS does not include ordinary shares issued by (re)insurance funds or participatory notes issued by sidecars.

# Primary Market: Global Market Overview

**First quarter issuance activity accelerated by 53.6% year-over-year.** There were 17 new bonds issued, totalling \$4.3 billion, compared to 15 deals and \$2.8 billion in Q1-2017. During Q1-2018, 11 deals matured with a notional value of \$2.1 billion, resulting in the net issuance of \$2.2 billion. Q1-2018 has been the strongest quarter in terms of issuance since 2009. Sponsors were ready to deploy capital in the ILS market despite significant catastrophe losses the previous year from hurricanes Harvey, Irma and Maria (Figure 2).

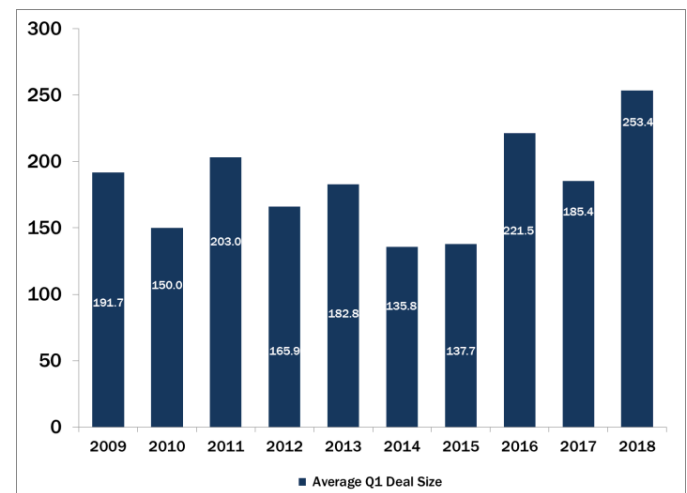
**The average deal size for Q1-2018 transactions was higher relative to the same quarter last year.** The average deal size during the quarter was \$253.4 million, up from \$185.4 million in Q1-2017 (Figure 3). The largest deals of the quarter were issued by Allstate and the Republic of Chile, each in the amount of \$500.0 million. At the lower end, the smallest deal was in the amount of \$5.0 million.

**Figure 2.** Quarterly ILS Issuance by Deal Volume (In US\$ bln) and Number of Q4 Deals - Global Market, 2009 to Q1



Source: Artemis and BMA staff calculations.

**Figure 3.** Global Q4 2009-Q1 2018 ILS Issuance (Average Deal Volume), 2009 to 2018 (In US\$ mln)



Source: Artemis and BMA staff calculations.

**Indemnity triggers continue to be the most popular trigger-type used in ILS deals.** ILS deals with an indemnity trigger represent 60.0% (\$20.0 billion of \$33.3 billion) of total outstanding volume in the ILS market. This is followed by the industry loss index trigger type which accounts for 23.9% (\$8.0 billion) of the outstanding volume (Table IV).

**The ILS market remains small relative to traditional (re)insurance business.** The \$33.3 billion of risk covered by ILS represents 5.5% of global reinsurer capital, which is estimated to be \$605.0 billion.<sup>1</sup> Since 2009, 342 ILS bonds have been issued of which 212 were issued by Bermuda domiciled SPIs. Bermuda continued to maintain its position as the leading jurisdiction in ILS over the past quarter, accounting for 74.5% (\$24.8 billion of \$33.3 billion) of the outstanding volume in the market. Other countries with significant insurance securitisation activity in this area include the Cayman Islands and Ireland, which represents 12.5% (\$4.2 billion) and 5.5% (\$1.8 billion), respectively.

<sup>1</sup> AON Benfield April 2018, "Reinsurance Market Outlook"

**Table I: Summary ILS Issuance in Selected Jurisdictions**  
(Total Issued Deal Volume in US\$ bln)

| ILS Issuance by Country of Risk (In US\$ billions) |            |            |            |            |             |            |
|--|------------|------------|------------|------------|-------------|------------|
| Country  | 2013       | 2014       | 2015       | 2016       | 2017        | 2018       |
| <b>Bermuda</b>                                     | <b>4.7</b> | <b>7.7</b> | <b>5.6</b> | <b>5.1</b> | <b>10.1</b> | <b>2.7</b> |
| Cayman Islands                                     | 1.9        | 0.7        | 1.1        | 1.2        | 1.4         | 0.2        |
| Ireland  | 1.0        | 0.4        | 0.6        | 0.8        | 0.3         | —          |
| United States                                      | —          | —          | 0.3        | —          | —           | —          |
| Other  | —          | 0.03       | 0.3        | —          | 0.7         | 1.4        |

**Table II: Summary ILS Issuance in Selected Jurisdictions**  
(Number of Deals)

| Number of Issuances by Country of Risk (SPV) |           |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Country                                      | 2013      | 2014      | 2015      | 2016      | 2017      | 2018      |
| <b>Bermuda</b>                               | <b>25</b> | <b>36</b> | <b>36</b> | <b>30</b> | <b>52</b> | <b>11</b> |
| Cayman Islands                               | 9         | 4         | 6         | 5         | 5         | 1         |
| Ireland                                      | 3         | 2         | 4         | 3         | 2         | —         |
| United States                                | —         | —         | 1         | —         | —         | —         |
| Other  | —         | 1         | 1         | —         | 3         | 5         |

**Table III: Triggers in ILS Issuance in Selected Jurisdictions**  
(Total Issued Deal Volume, 2009 to Q1-2018 in US\$ bln)

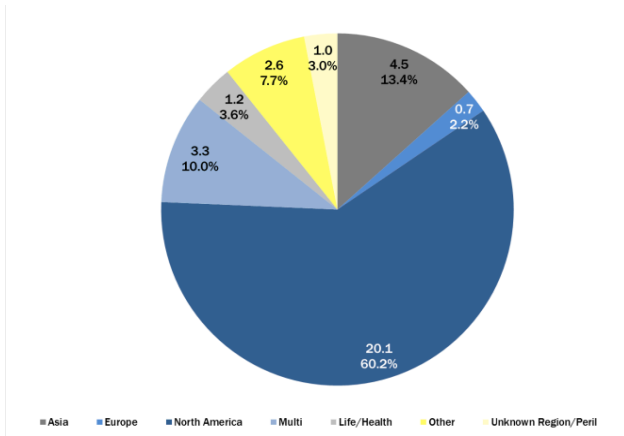
| Trigger (In US\$ bln)       | Bermuda     | Cayman Islands | Ireland | United States & Other |
|-----------------------------|-------------|----------------|---------|-----------------------|
| Indemnity                   | <b>25.4</b> | 9.8            | 1.1     | —                     |
| Industry Loss Index         | <b>11.3</b> | 2.6            | 3.5     | 0.5                   |
| Medical Benefit Ratio Index | —           | 1.4            | —       | —                     |
| Modelled Loss               | <b>0.9</b>  | 0.6            | —       | —                     |
| Mortality Index             | —           | 0.8            | 0.2     | 0.3                   |
| Multiple                    | <b>0.2</b>  | 0.6            | 0.3     | 0.2                   |
| Parametric                  | <b>1.5</b>  | 0.6            | —       | 2.3                   |
| Parametric Index            | —           | 0.7            | 0.2     | —                     |
| Unknown                     | <b>2.1</b>  | 0.1            | —       | —                     |

**Table IV: Triggers in ILS Issuance in Selected Jurisdictions**  
(Outstanding Deal Volume, end Q1-2018 in US\$ bln)

| Trigger (In US\$ bln)       | Bermuda     | Cayman Islands | Ireland | United States & Other |
|-----------------------------|-------------|----------------|---------|-----------------------|
| Indemnity                   | <b>15.7</b> | 3.5            | 0.8     | —                     |
| Industry Loss Index         | <b>7.1</b>  | —              | 0.8     | —                     |
| Longevity Index             | —           | —              | —       | —                     |
| Medical benefit ratio index | —           | 0.6            | —       | —                     |
| Modelled Loss               | <b>0.3</b>  | —              | —       | —                     |
| Mortality Index             | —           | 0.1            | 0.2     | 0.3                   |
| Multiple                    | —           | —              | —       | —                     |
| Parametric                  | <b>0.5</b>  | —              | —       | 1.9                   |

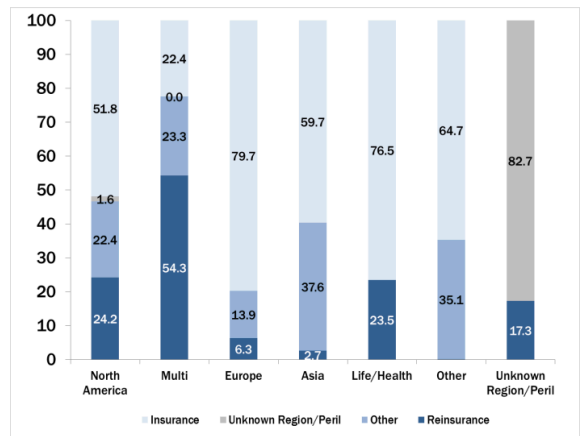
The majority of ILS covers North American perils which account for 60.2% (\$20.1 billion) of total outstanding volume (Figures 4 and 5).<sup>2</sup> Asian and multi-regional perils account for 13.4% (\$4.5 billion) and 10.0% (\$3.3 billion) of the market, respectively, while the remaining four categories are each less than 8% and account for the remainder. Unknown sponsors and private deals have played a larger role in terms of the number of transactions, although their individual issue values are relatively low when compared to traditional insurers and reinsurers. Primary insurers sponsored 50.8% of total coverage for all perils (\$16.9 billion of \$33.3 billion). Twenty-one point nine percent of perils are sponsored by reinsurers with the remainder by other types and unknown sponsors including private placement deals.

**Figure 4.** Total Outstanding Volume of ILS by Region/Peril, end Q1-2018 (In US\$ bln)



Source: Artemis and BMA staff calculations.

**Figure 5.** Outstanding Coverage per Region/Peril by ILS Sponsor Type, end Q1-2018 (In %)



Source: Artemis and BMA staff calculations.

<sup>2</sup> The proportion of coverage for this region relative to the total market is actually higher given that most multi-regional bonds include US events.

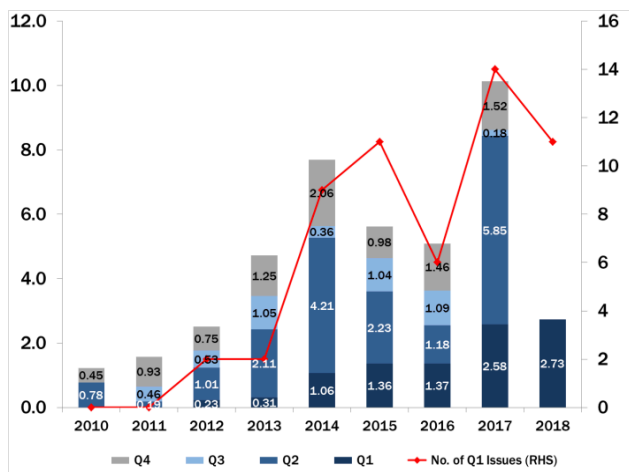
# Primary Market: Domestic Issuance

**Bermuda remains the leading jurisdiction for the issuance of ILS.** Bermuda-based SPIs accounted for 63.4% (\$2.7 billion of \$4.3 billion) of issuance volume during Q1-2018. In Q1-2018, Bermuda-based SPIs underwrote 11 ILS transactions (Figure 6) covering natural catastrophes in North America and Asia along with unknown perils. Overall, Bermuda-issued ILS represents 74.5% (\$24.8 of \$33.3 billion) of total outstanding capacity at the end of Q1-2018.

**The average deal size for Bermuda-issued ILS in Q1-2018 was \$284.4 million.** This represents an average increase of \$64.0 million per deal compared to Q1-2017 level (Figure 7). The increase in average size is due to large issuances of more than \$400.0 million accompanied by some small placements.

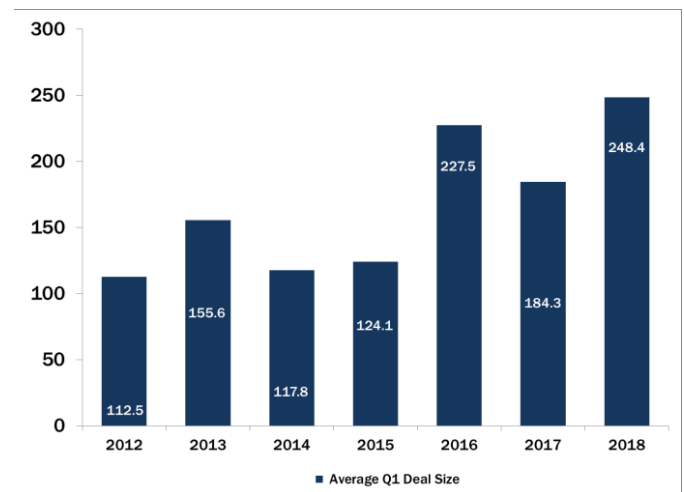
**The BSX accounted for 77.3% of the global market capitalisation of ILS at the end of Q1-2018.** A total of 104 ILS deals (comprising 171 tranches) is listed on the BSX with an aggregate nominal value of approximately \$25.8 billion,<sup>3</sup> of which \$1.4 billion (5.4%) are issued by vehicles domiciled in Ireland and the United States. Eleven new deals issued during the quarter were listed on the BSX, with a notional value of \$2.7 billion. Over the same period, eight deals previously listed on the exchange worth \$1.2 billion matured.

**Figure 6. Quarterly ILS Issuance by Volume (In US\$ bln) and Number of Q4 Deals - Domestic, 2010 to Q1-2018**



Source: Artemis and BMA staff calculations.

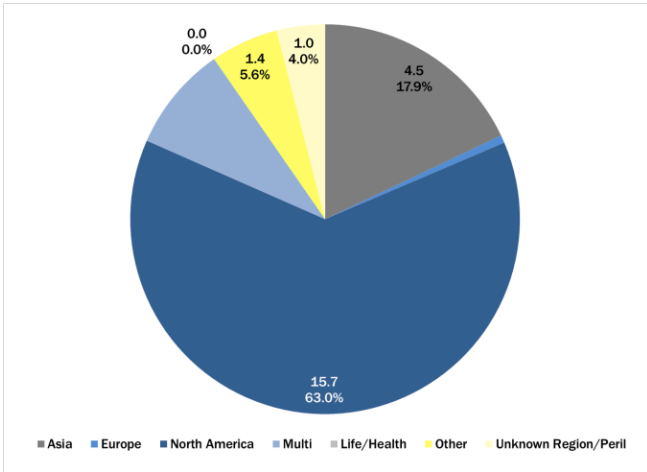
**Figure 7. Domestic Q4 ILS Issuance (Average Deal Volume), 2012 to 2018 (In US\$ mln)**



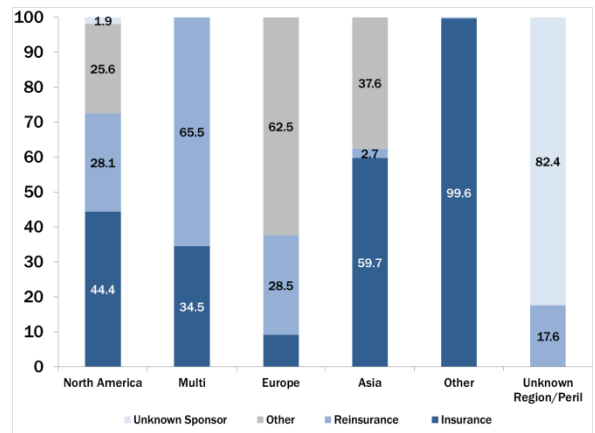
Source: Artemis and BMA staff calculations.

<sup>3</sup> This does not include notes programmes, ordinary shares issued by (re)insurance funds and participating notes issued by sidecar vehicles.

**Figure 8.** Total Outstanding Volume of Domestic Deals by Region/Peril, end Q1-2018 (In US\$ bln)



**Figure 9.** Outstanding Coverage per Region/Peril by ILS Sponsor Type for Domestic Deals, end Q1-2018 (In %)



Source: Artemis and BMA staff calculations.

The Bermuda market is a leader in issuing cat bonds with the majority of transactions based on indemnity triggers (Table IV). In Q1-2018, an indemnity trigger has accounted for 63.2% (\$15.7 billion of \$24.8 billion) of outstanding deal volume for transactions issued by Bermuda-based SPIs. This is followed by the industry loss index trigger type which accounts for 28.7% (\$7.1 billion) of the outstanding volume for Bermuda-issued deals.

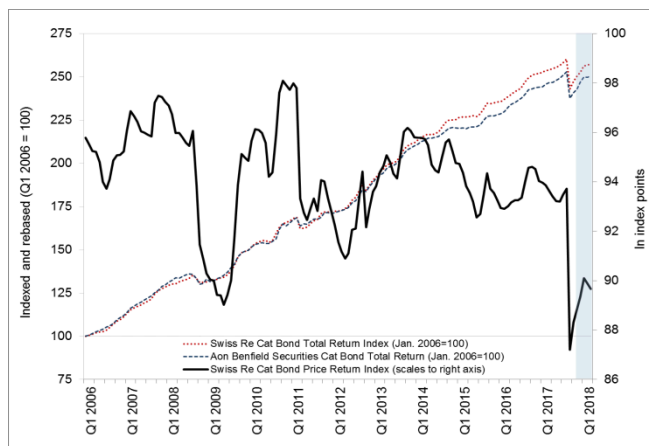
North American perils by direct underwriters, account for the largest share of the outstanding volume for Bermuda issued ILS (Figures 8 and 9). Primary insurers sponsored 44.4% of total coverage for those bonds (\$6.9 billion of \$15.7 billion) while reinsurers sponsored 28.1% (\$4.4 billion). Tables I-IV provides a summary of ILS issuance by volume and number of deals in key jurisdictions, as well as the distribution of trigger types.

## Secondary Market: Price Indices

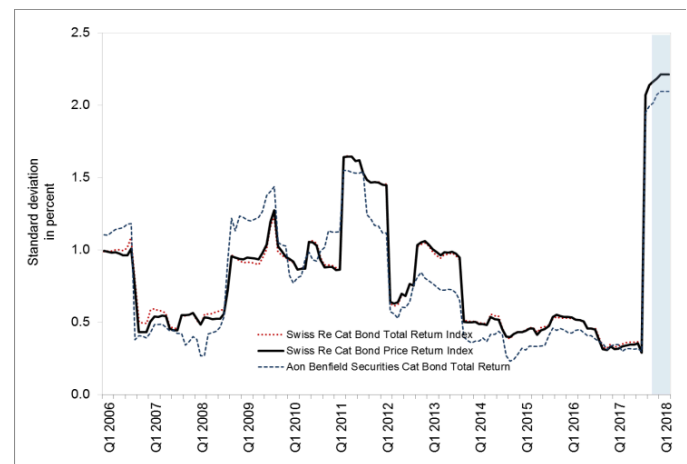
Given the large footprint of P&C insurance risk in the ILS market, this section reviews the overall market performance of outstanding catastrophe (cat) bonds based on three of the most commonly used benchmark indices (Swiss Re Cat Bond Total Return Index, Aon Benfield Securities Cat Bond Total Return, Swiss Re Cat Bond Price Return Index).

The risk-return trade-off for cat bonds was negative following an active hurricane season and an earthquake off the coast of Mexico. Table V provides a summary of selected indicators of market performance over the last six quarters (Q4-2016 to Q1-2018) comparing the recent development of the *Swiss Re Cat Bond Total Return Index* and the *Aon Benfield Securities Cat Bond Total Return Index* as the global market benchmarks.<sup>4</sup> During the first quarter of 2018, the two indices recorded a positive return of 0.6% (down from 1.3% during the previous quarter) and positive 0.1% (down from 0.8%), respectively. The annualised return volatility of each index remained rather stable in comparison to the previous quarter, at 2.2% for each index during the quarter. Figure 10 shows the quarterly closing levels of the two total return indices by Swiss Re and Aon Benfield. It illustrates the valuation gain of a broad cat portfolio since Q1-2006 (as base year) and the corresponding price return index as suitable relative benchmarks for other investments. Figure 10 shows the losses experienced in 2017 from the events of hurricanes Harvey, Irma and Maria. Figure 11 shows the normalised return volatility over a 12-month rolling window.

**Figure 10.** ILS Total Return and Price Return Benchmark Indices, Q1 2006 - Q1 2018 (In index points)



**Figure 11.** ILS Total Return Benchmark Indices: Annualised Return Volatility, Q1 2006 - Q1 2018 (In %)



Source: Bloomberg and BMA staff

<sup>4</sup> The Swiss Re indices were launched in June 2007 and comprise a series of performance indices constructed to track the price return and total rate of return of performance of all outstanding dollar-denominated Cat bonds. The main index is divided into 18 different sub-indices, of which the most important ones are "Single-Peril US Wind Cat Bonds", "Single-Peril California Earthquake Cat Bonds" and "BB Cat Bonds" (Standard & Poor's-rated). The index is based on Swiss Re pricing indications only and base-weighted back to January 2002. Three years after Swiss Re, Aon Benfield Securities, the securities and investment banking operation of Aon Benfield, launched its own ILS indices in 2010. These indices are base-weighted back to December 2000 and track the performance of Cat bonds in four different baskets: "All Bond", "BB-rated Bond", "U.S. Hurricane Bond", and "US Earthquake Bond."

**Table V. Selected ILS Market Performance Indicators, Q4-2016 to Q1-2018**

**Selected ILS Market Performance Indicators**

*In % unless indicated otherwise*

|   | 2016 |      | 2017 |      | 2018 |             |
|---|------|------|------|------|------|-------------|
|   | Q4   | Q1   | Q2   | Q3   | Q4   | Q1          |
| <b>Price Return 1/</b>  |      |      |      |      |      |             |
| Swiss Re Cat Bond Total Return Index                          | 0.3  | 0.3  | 0.3  | -1.7 | 1.3  | <b>0.6</b>  |
| Swiss Re Cat Bond Price Return Index (scales to right axis)   | -0.2 | -0.1 | -0.1 | -2.1 | 0.8  | <b>0.1</b>  |
| Aon Benfield Securities Cat Bond Total Return                 | 0.2  | 0.4  | 0.3  | -1.5 | 1.3  | <b>0.5</b>  |
| <b>Return Volatility</b>                                      |      |      |      |      |      |             |
| <i>Annualised Standard Deviation 2/</i>                       |      |      |      |      |      |             |
| Swiss Re Cat Bond Total Return Index                          | 0.3  | 0.3  | 0.4  | 0.9  | 2.2  | <b>2.2</b>  |
| Swiss Re Cat Bond Price Return Index (scales to right axis)   | 0.3  | 0.3  | 0.3  | 0.9  | 2.2  | <b>2.2</b>  |
| Aon Benfield Securities Cat Bond Total Return                 | 0.3  | 0.3  | 0.3  | 0.9  | 2.0  | <b>2.1</b>  |
| <i>Normalised Squared Returns (In standard deviations) 3/</i> |      |      |      |      |      |             |
| Swiss Re Cat Bond Total Return Index                          | -0.6 | -0.7 | -0.5 | 1.4  | -0.2 | <b>-0.3</b> |
| Swiss Re Cat Bond Price Return Index (scales to right axis)   | -0.1 | -0.4 | -0.5 | 1.0  | -0.2 | <b>-0.3</b> |
| Aon Benfield Securities Cat Bond Total Return                 | -0.9 | -0.6 | -0.4 | 1.7  | -0.2 | <b>-0.3</b> |

Notes:

1/ quarterly average of month-on-month change of last prices.

2/ quarterly average of the 12-month standard deviation of the logarithmic

3/ quarterly average of the 12-month moving average of squared month-onmonth changes of last prices, normalised over a rolling window of 12 months; a positive (negative) value indicates above (below ) average performance conditional on return volatility.



# Global ILS Issuance

## Table VI. Transaction Overview of Global ILS Issuance, Q1-2017 to Q1-2018

|  | Sponsor                          | Short Name                          | Issue Date                          | Maturity Date | Amount Issued (\$min) | Region/Peril Covered | Trigger                     | Country of Issuance | BSX Listings |   |
|--|----------------------------------|-------------------------------------|-------------------------------------|---------------|-----------------------|----------------------|-----------------------------|---------------------|--------------|---|
| Q1 2018  | Unknown cedant                   | RESILIENCE RE LTD (1732)            | 3-Jan-17                            | 8-Jan-19      | 187                   | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | SEASIDE RE 2017-1                   | 5-Jan-17                            | 15-Jan-18     | 87                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | DODEKA XI                           | 5-Jan-17                            | 5-Jan-18      | 19                    | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
|  | Unknown cedant                   | RESILIENCE RE LTD (1711A)           | 8-Jan-17                            | 8-Jan-18      | 63                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | ARTEX SAC LTD - SERIES DX NOTES     | 10-Jan-17                           | 6-Apr-18      | 50                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
|  | XL Bermuda Ltd.                  | GALILEI RE LTD 2017-1               | 11-Jan-17                           | 8-Jan-21      | 525                   | Multi                | Industry Loss Index         | Bermuda             | ✓            |   |
|  | Aetna                            | VITALITY RE VIII 2017-1             | 25-Jan-17                           | 8-Jan-21      | 200                   | Life/Health          | Medical benefit ratio index | Cayman Islands      |              |   |
|  | Terra Brasis Re                  | ALPHA TERRA VALIDUS I               | 6-Feb-17                            | 15-Jan-18     | 5                     | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | Cincinnati Insurance Company     | SKYLINE RE LTD 2017-1               | 7-Feb-17                            | 6-Jan-20      | 180                   | North America        | Indemnity                   | Bermuda             |              |   |
|  | ICAT Syndicate 4242              | BUFFALO RE LTD 2017-1               | 10-Mar-17                           | 7-Apr-20      | 165                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | Heritage P&C Ins. Co.            | CITRUS RE LTD 2017-1                | 13-Mar-17                           | 18-Mar-20     | 125                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | Sompo Japan & Nipponkoa Ins. Co. | AOZORA RE LTD 2017-1                | 29-Mar-17                           | 7-Apr-21      | 480                   | Asia                 | Indemnity                   | Bermuda             | ✓            |   |
|  | Allstate                         | SANDERS RE LTD 2017-1               | 30-Mar-17                           | 6-Dec-21      | 375                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | State Farm                       | MERNA RE LTD 2017-1                 | 31-Mar-17                           | 8-Apr-20      | 300                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | Q4 2017                          | Unknown cedant                      | ECLIPSE RE LTD 2017-01A             | 31-Mar-17     | 1-Apr-19              | 20                   | Unknown Region/Peril        | Unknown             | Bermuda      | ✓ |
| Everest Re   |                                  | KILIMANJARO II RE LTD 2017-1        | 13-Apr-17                           | 20-Apr-21     | 950                   | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
| Everest Re   |                                  | KILIMANJARO II RE LTD 2017-1        | 13-Apr-17                           | 21-Apr-22     | 300                   | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | RESILIENCE RE LTD (1741A)           | 19-Apr-17                           | 6-Apr-18      | 173                   | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Louisiana Citizens   |                                  | PELICAN IV RE LTD 2017-1            | 19-Apr-17                           | 5-May-20      | 100                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Security First Insurance Company                               |                                  | FIRST COAST RE LTD 2017-1           | 25-Apr-17                           | 7-Jun-21      | 175                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | DODEKA XII                          | 28-Apr-17                           | 22-Dec-17     | 10                    | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
| American Integrity Insurance Company of Florida                |                                  | INTEGRITY RE LTD 2017-1             | 2-May-17                            | 10-Jun-20     | 210                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| National Mortgage Insurance Corporation                        |                                  | OAKTOWN RE LTD 2017-1               | 2-May-17                            | 25-Apr-27     | 211                   | Other                | Indemnity                   | Bermuda             | ✓            |   |
| USA  |                                  | RESIDENTIAL REINS 2017 LTD 2017-1   | 3-May-17                            | 6-Jun-21      | 425                   | North America        | Indemnity                   | Cayman Islands      |              |   |
| Nationwide Mutual Insurance Co.                                |                                  | CAELUS RE V LTD 2017-1              | 4-May-17                            | 5-Jun-20      | 375                   | North America        | Indemnity                   | Cayman Islands      |              |   |
| Palomar Specialty Insurance Company                            |                                  | TORREY PINES RE LTD 2017-1          | 8-May-17                            | 9-Jun-20      | 166                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Citizens Property Insurance                                    |                                  | EVERGLADES RE II LTD 2017-1         | 9-May-17                            | 8-May-20      | 300                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Heritage Property & Casualty Insurance Company                 |                                  | CITRUS RE LTD 2017-2                | 11-May-17                           | 18-Mar-20     | 35                    | North America        | Indemnity                   | Bermuda             | ✓            |   |
| California Earthquake Authority                                |                                  | URSA RE LTD 2017-1                  | 16-May-17                           | 27-May-20     | 925                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| First Mutual Transportation Assurance Co                       |                                  | METROCAT RE LTD                     | 22-May-17                           | 8-May-20      | 125                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Texas Windstorm Insurance Association                          |                                  | ALAMO RE LTD 2017-1                 | 30-May-17                           | 8-Jun-20      | 400                   | North America        | Parametric                  | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | ECLIPSE RE LTD 2017-01A             | 31-May-17                           | 1-Jun-18      | 53                    | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Allstate subsidiaries  |                                  | SANDERS RE LTD 2017-2               | 31-May-17                           | 5-Jun-20      | 200                   | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Great American Insurance Group                                 |                                  | RIVERFRONT RE LTD 2017-1            | 31-May-17                           | 15-Jan-21     | 190                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Avatar Property & Casualty Insurance Company                   |                                  | CASABLANCA RE LTD 2017-1            | 1-Jun-17                            | 4-Jun-20      | 100                   | North America        | Indemnity                   | Cayman Islands      |              |   |
| Unknown cedant   |                                  | MARKET RE LTD 2017-1                | 8-Jun-17                            | 8-Jun-18      | 65                    | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Southern Oak Insurance Company                                 |                                  | OAK LEAF RE LTD 2017-1              | 9-Jun-17                            | 9-Jun-18      | 54                    | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Massachusetts Property IUA                                     |                                  | CRANBERRY RE LTD 2017-1             | 12-Jun-17                           | 13-Jul-20     | 350                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | RESILIENCE RE LTD (1761A)           | 13-Jun-17                           | 4-Jun-08      | 37                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Tokio Millennium Re (Bermuda)                                  |                                  | SPECTRUM CAPITAL LTD 2017-1         | 19-Jun-17                           | 8-Jun-21      | 430                   | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
| Assicurazioni Generali S.p.A.                                  |                                  | LION II RE DAC                      | 28-Jun-17                           | 15-Jul-21     | 228                   | Europe               | Indemnity                   | Ireland             | ✓            |   |
| AXIS Capital Holdings Ltd. subsidiaries                        |                                  | NORTHSHORE RE II LTD 2017-1         | 29-Jun-17                           | 6-Jul-20      | 350                   | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
| Achmea Re Company N.V.   |                                  | WINDMILL I RE LTD 2017-1            | 30-Jun-17                           | 5-Jul-20      | 46                    | Europe               | Indemnity                   | Bermuda             | ✓            |   |
| Tokio Millennium Re AG   |                                  | HOTARU 2                            | 3-Jul-17                            | 7-Aug-19      | 71                    | Asia                 | Unknown                     | Bermuda             | ✓            |   |
| Pandemic Emergency Financing Facility (PEF)                    |                                  | IBRD CAR 111-112                    | 7-Jul-17                            | 15-Jul-20     | 320                   | Multi                | Parametric                  | Other               |              |   |
| AmTrust Financial Services                                     |                                  | FORTIUS RE II LTD (2017-1)          | 19-Jul-17                           | 7-Jul-21      | 100                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | ARTEX SAC LTD - SERIES EX NOTES     | 20-Jul-17                           | 8-Jun-18      | 8                     | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| FONDEN / Agroasemex S.A.                                       |                                  | IBRD / FONDEN 2017                  | 4-Aug-17                            | 11-Aug-20     | 360                   | North America        | Parametric                  | Other               |              |   |
| Unknown cedant   |                                  | DOM RE IC LTD 2017                  | 4-Aug-17                            | 4-Aug-23      | 15                    | North America        | Indemnity                   | Other               |              |   |
| Q2 2017  | Arch Capital Group Ltd.          | BELLEMEADE RE 2017-1 LTD            | 1-Oct-17                            | 25-Oct-27     | 368                   | Other                | Indemnity                   | Bermuda             | ✓            |   |
|  | XL Bermuda Ltd.                  | GALILEO RE LTD (2017-1)             | 3-Nov-17                            | 6-Jan-20      | 150                   | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
|  | USA                              | RESIDENTIAL REINSURANCE             | 17-Nov-17                           | 6-Dec-21      | 295                   | North America        | Indemnity                   | Cayman Islands      |              |   |
|  | California Earthquake Authority  | URSA RE. LTD (2017-2)               | 30-Nov-17                           | 10-Dec-20     | 400                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
|  | Unknown cedant                   | ARTEX SAC LTD SERIES GX NOTES       | 1-Dec-17                            | 5-Apr-19      | 50                    | North America        | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | LI RE (2017-1)                      | 12-Dec-17                           | 10-Apr-19     | 10                    | North America        | Unknown                     | Bermuda             | ✓            |   |
|  | Allianz Risk Transfer            | MARKET RE LTD(2017-2)               | 14-Dec-17                           | 30-May-18     | 15                    | Europe               | Parametric                  | Bermuda             | ✓            |   |
|  | Cowes Group                      | HEXAGON REINSURANCE DAC (2017-1)    | 15-Dec-17                           | 19-Jan-22     | 106                   | Europe               | Indemnity                   | Ireland             |              |   |
|  | Unknown cedant                   | SEASIDE RE 2018-1                   | 19-Dec-17                           | 15-Jan-19     | 20                    | North America        | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | SEASIDE RE 2018-3                   | 22-Dec-17                           | 15-Jan-19     | 27                    | North America        | Unknown                     | Bermuda             | ✓            |   |
|  | Validus Holdings                 | TAILWIND RE LTD (2017-1)            | 27-Dec-17                           | 8-Jan-22      | 400                   | Multi                | Industry Loss Index         | Bermuda             | ✓            |   |
|  | Unknown cedant                   | SEASIDE RE 2018-2                   | 29-Dec-17                           | 15-Jan-19     | 50                    | North America        | Unknown                     | Bermuda             | ✓            |   |
|  | Unknown cedant                   | DODEKA XIV                          | 29-Dec-17                           | 8-Jan-19      | 34                    | North America        | Industry Loss Index         | Bermuda             | ✓            |   |
|  | Q1 2017                          | Atena                               | VITALITY RE IX LTD. (SERIES 2018-1) | 1-Jan-18      | 10-Jan-22             | 200                  | North America               | Indemnity           | Insurance    |   |
|  |                                  | Unknown                             | FIBONACCI REINSURANCE               | 10-Jan-18     | 10-Jan-19             | 70                   | Unknown Region/Peril        | Unknown             | Bermuda      | ✓ |
| Terra Brasis Re  |                                  | ALPHA TERRA VALIDUS II              | 1-Jan-18                            | 15-Jan-19     | 5                     | Other                | Indemnity                   | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | RESILIENCE RE LTD. (SERIES 1812A)   | 1-Feb-18                            | 8-Jan-19      | 60                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Unknown  |                                  | PANTHERA RE LIMITED (SERIES 2018-1) | 1-Feb-18                            | 9-Mar-20      | 100                   | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Unknown  |                                  | JUNGFRAU IC LIMITED 2018            | 1-Feb-18                            |               | 15                    | Unknown Region/Peril | Indemnity                   | Guernsey            |              |   |
| Republic of Peru   |                                  | IBRD CAR 120                        | 1-Feb-18                            | 15-Feb-21     | 200                   | Multi                | Parametric                  | Other               |              |   |
| FONDEN / AGROASEMEX S.A.                                       |                                  | IBRD CAR 118-119                    | 1-Feb-18                            | 14-Feb-21     | 260                   | Multi                | Parametric                  | Other               |              |   |
| Republic of Colombia   |                                  | IBRD CAR 117                        | 1-Feb-18                            | 15-Feb-21     | 400                   | Other                | Parametric                  | Other               |              |   |
| Republic of Chile  |                                  | IBRD CAR 116                        | 1-Feb-18                            | 15-Feb-21     | 500                   | Other                | Parametric                  | Other               |              |   |
| State Farm   |                                  | MERNA RE LTD. (SERIES 2018-1)       | 1-Mar-18                            | 8-Apr-21      | 300                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Allstate   |                                  | SANDERS RE LTD. (SERIES 2018-1)     | 1-Mar-18                            | 7-Apr-22      | 500                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Tokio Marine & Nichido Fire Insurance Co. Ltd.                 |                                  | KIZUNA RE II LTD. (SERIES 2018-1)   | 1-Mar-18                            | 11-Apr-23     | 200                   | Asia                 | Indemnity                   | Bermuda             | ✓            |   |
| Mitsui Sumitomo Insurance Co. Ltd., Aioi Nissai Dowa Insurance |                                  | AKIBARE RE LTD. (SERIES 2018-1)     | 1-Mar-18                            | 7-Apr-22      | 320                   | Asia                 | Indemnity                   | Bermuda             | ✓            |   |
| Essent Guaranty  |                                  | RADNOR RE 2018-1 LTD.               | 1-Mar-18                            | 25-Mar-28     | 424                   | North America        | Indemnity                   | Bermuda             | ✓            |   |
| Unknown cedant   |                                  | RESILIENCE RE LTD. (SERIES 1811A)   | 1-Mar-18                            | 8-Jan-19      | 53                    | Unknown Region/Peril | Unknown                     | Bermuda             | ✓            |   |
| Zenkyoren  |                                  | NAKAMA RE LTD. (SERIES 2018-1)      | 1-Mar-18                            | 13-Apr-23     | 700                   | Asia                 | Indemnity                   | Bermuda             | ✓            |   |

# Bermuda: Overview of ILS Listings at the Bermuda Stock Exchange (BSX)

## Table VII. Transaction Overview of BSX-listed ILS Issuance, 2015 – 2018

|                                  | Short Name                          | Issue Date           | Maturity Date | Amount Issued (\$mn) | Region/Peril Covered | Trigger Type        | Country of Issuance (SP) |         |
|----------------------------------|-------------------------------------|----------------------|---------------|----------------------|----------------------|---------------------|--------------------------|---------|
| 2015                             | KIZUNA RE II LTD 2015.1             | 26-Mar-15            | 5-Apr-19      | 293                  | Asia                 | Indemnity           | Bermuda                  |         |
|                                  | QUEEN STREET X RE LTD               | 30-Mar-15            | 8-Jun-18      | 100                  | Multi                | Industry Loss Index | Ireland                  |         |
|                                  | MERNA RE LTD 2015.1                 | 31-Mar-15            | 9-Apr-18      | 300                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | CITRUS RE 2015.1                    | 8-Apr-15             | 9-Apr-18      | 278                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | PELICAN II RE LTD                   | 14-Apr-15            | 16-Apr-18     | 100                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | CRANBERRY RE LTD 2015.1             | 30-Apr-15            | 8-Jul-18      | 300                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | EVERGLADES RE II LTD 2015.1         | 7-May-15             | 3-May-18      | 300                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | ALAMO RE LTD                        | 13-May-15            | 7-Jun-19      | 700                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | AZZURRO RE I LTD                    | 17-Jun-15            | 16-Jan-19     | 225                  | Europe               | Indemnity           | Ireland                  |         |
|                                  | PANDA RE LTD 2015.1                 | 29-Jun-15            | 9-Jul-18      | 50                   | Asia                 | Indemnity           | Bermuda                  |         |
|                                  | ACORN RE LTD 2015.1                 | 10-Jul-15            | 7-Jul-18      | 300                  | North America        | Parametric          | Bermuda                  |         |
|                                  | BELLEMEADE RE LTD 2015.1            | 29-Jul-15            | 25-Jul-25     | 299                  | Other                | Indemnity           | Bermuda                  |         |
|                                  | BOSPHORUS LTD 2015.1                | 17-Aug-15            | 17-Aug-18     | 100                  | Europe               | Parametric          | Bermuda                  |         |
|                                  | URSA RE LTD 2015.1                  | 15-Sep-15            | 21-Sep-18     | 250                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | PENN UNION RE LTD 2015.1            | 8-Oct-15             | 7-Dec-18      | 275                  | North America        | Parametric          | United States            |         |
|                                  | KILMANJARO RE LTD 2015.1            | 1-Dec-15             | 6-Dec-19      | 625                  | North America        | Industry Loss Index | Bermuda                  |         |
|                                  | QUEEN STREET XI RE                  | 18-Dec-15            | 7-Jun-19      | 100                  | Multi                | Industry Loss Index | Ireland                  |         |
|                                  | NAKAMA RE LTD 2015.1                | 29-Dec-15            | 14-Jan-21     | 300                  | Asia                 | Indemnity           | Bermuda                  |         |
|                                  | 2016                                | GALLEO RE LTD 2016.1 | 27-Jan-16     | 8-Jan-19             | 300                  | Multi               | Industry Loss Index      | Bermuda |
|                                  |                                     | CITRUS RE LTD 2016.1 | 24-Feb-16     | 25-Feb-19            | 250                  | North America       | Indemnity                | Bermuda |
| MERNA RE LTD 2016.1              |                                     | 9-Mar-16             | 8-Apr-19      | 300                  | North America        | Indemnity           | Bermuda                  |         |
| MANATEE RE LTD 2016.1            |                                     | 10-Mar-16            | 13-Mar-19     | 75                   | North America        | Indemnity           | Bermuda                  |         |
| ANGBARE II LTD 2016.1            |                                     | 14-Mar-16            | 7-Apr-20      | 200                  | Asia                 | Indemnity           | Bermuda                  |         |
| AZORA RE LTD 2016.1              |                                     | 29-Mar-16            | 7-Apr-20      | 220                  | Asia                 | Indemnity           | Bermuda                  |         |
| BELLEMEADE RE II LTD 2016.1      |                                     | 9-May-16             | 25-Apr-26     | 299                  | Other                | Indemnity           | Bermuda                  |         |
| QUEEN STREET XII RE              |                                     | 20-May-16            | 8-Apr-20      | 190                  | Multi                | Industry Loss Index | Ireland                  |         |
| OPERATIONAL RE LTD               |                                     | 26-May-16            | 8-Apr-21      | 218                  | Other                | Indemnity           | Bermuda                  |         |
| FIRST COAST RE LTD 2016.1        |                                     | 31-May-16            | 7-Jun-19      | 75                   | North America        | Indemnity           | Bermuda                  |         |
| BLUE HALO RE LTD 2016.1          |                                     | 16-Jun-16            | 21-Jun-19     | 185                  | North America        | Industry Loss Index | Bermuda                  |         |
| BLUE HALO RE LTD 2016.2          |                                     | 21-Jul-16            | 26-Jul-19     | 225                  | North America        | Industry Loss Index | Bermuda                  |         |
| NAKAMA RE LTD 2016.1             |                                     | 29-Sep-16            | 13-Oct-21     | 700                  | Asia                 | Indemnity           | Bermuda                  |         |
| URSA RE LTD 2016.1               |                                     | 30-Nov-16            | 10-Dec-19     | 500                  | North America        | Indemnity           | Bermuda                  |         |
| BONANZA RE LTD 2016.1            |                                     | 1-Dec-16             | 3-Dec-19      | 200                  | North America        | Indemnity           | Bermuda                  |         |
| HORSE CAPITAL I DAC              |                                     | 19-Dec-16            | 15-Jun-20     | 265                  | Other                | Indemnity           | Ireland                  |         |
| GALLEI RE LTD 2016.1             |                                     | 28-Dec-16            | 8-Jan-20      | 750                  | Multi                | Industry Loss Index | Bermuda                  |         |
| LI RE LTD 2016.2                 |                                     | 30-Dec-16            | 10-Apr-18     | 10                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| RESILIENCE RE LTD (L712)         |                                     | 3-Jan-17             | 8-Jan-19      | 187                  | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| ARTEX SAC LTD - SERIES DIX NOTES |                                     | 10-Jan-17            | 6-Apr-18      | 50                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| GALLEI RE LTD 2017.1             |                                     | 11-Jan-17            | 8-Jan-21      | 525                  | Multi                | Industry Loss Index | Bermuda                  |         |
| BUFFALO RE LTD 2017.1            |                                     | 10-Mar-17            | 7-Apr-20      | 165                  | North America        | Indemnity           | Bermuda                  |         |
| CITRUS RE LTD 2017.1             |                                     | 13-Mar-17            | 18-Mar-20     | 125                  | North America        | Indemnity           | Bermuda                  |         |
| AZORA RE LTD 2017.1              |                                     | 29-Mar-17            | 7-Apr-21      | 480                  | Asia                 | Indemnity           | Bermuda                  |         |
| SANDERS RE LTD 2017.1            |                                     | 30-Mar-17            | 6-Dec-21      | 375                  | North America        | Indemnity           | Bermuda                  |         |
| ECLIPSE RE LTD 2017.01A          |                                     | 31-Mar-17            | 1-Apr-19      | 20                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| MERNA RE LTD 2017.1              |                                     | 31-Mar-17            | 8-Apr-20      | 300                  | North America        | Indemnity           | Bermuda                  |         |
| KILMANJARO II RE LTD 2017.1      |                                     | 13-Apr-17            | 20-Apr-21     | 950                  | North America        | Industry Loss Index | Bermuda                  |         |
| KILMANJARO II RE LTD 2017.1      |                                     | 13-Apr-17            | 21-Apr-22     | 300                  | North America        | Industry Loss Index | Bermuda                  |         |
| RESILIENCE RE LTD (L714A)        |                                     | 19-Apr-17            | 6-Apr-18      | 173                  | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| PELICAN IV RE LTD 2017.1         |                                     | 19-Apr-17            | 5-May-20      | 100                  | North America        | Indemnity           | Bermuda                  |         |
| FIRST COAST RE LTD 2017.1        |                                     | 25-Apr-17            | 7-Jun-21      | 175                  | North America        | Indemnity           | Bermuda                  |         |
| INTEGRITY RE LTD 2017.1          |                                     | 2-May-17             | 10-Jun-20     | 210                  | North America        | Indemnity           | Bermuda                  |         |
| OAKTOWN RE LTD 2017.1            |                                     | 2-May-17             | 25-Apr-27     | 211                  | Other                | Indemnity           | Bermuda                  |         |
| TORREY PINES RE LTD 2017.1       |                                     | 8-May-17             | 9-Jun-20      | 166                  | North America        | Indemnity           | Bermuda                  |         |
| EVERGLADES RE II LTD 2017.1      |                                     | 9-May-17             | 8-May-20      | 300                  | North America        | Indemnity           | Bermuda                  |         |
| CITRUS RE LTD 2017.2             |                                     | 11-May-17            | 18-Mar-20     | 35                   | North America        | Indemnity           | Bermuda                  |         |
| URSA RE LTD 2017.1               |                                     | 18-May-17            | 27-May-20     | 925                  | North America        | Indemnity           | Bermuda                  |         |
| METROCAT RE LTD                  |                                     | 22-May-17            | 8-May-20      | 125                  | North America        | Parametric          | Bermuda                  |         |
| ALAMO RE LTD 2017.1              |                                     | 30-May-17            | 8-Jun-20      | 400                  | North America        | Indemnity           | Bermuda                  |         |
| ECLIPSE RE LTD 2017.01A          | 31-May-17                           | 1-Jun-18             | 53            | Unknown Region/Peril | Unknown              | Bermuda             |                          |         |
| SANDERS RE LTD 2017.2            | 31-May-17                           | 5-Jun-20             | 200           | North America        | Indemnity            | Bermuda             |                          |         |
| RIVERFRONT RE LTD 2017.1         | 31-May-17                           | 15-Jan-21            | 190           | North America        | Indemnity            | Bermuda             |                          |         |
| OAK LEAF RE LTD 2017.1           | 9-Jun-17                            | 9-Jun-18             | 53            | North America        | Indemnity            | Bermuda             |                          |         |
| CRANBERRY RE LTD 2017.1          | 12-Jun-17                           | 13-Jul-20            | 350           | North America        | Indemnity            | Bermuda             |                          |         |
| RESILIENCE RE LTD (L761A)        | 13-Jun-17                           | 4-Jun-18             | 37            | Unknown Region/Peril | Unknown              | Bermuda             |                          |         |
| SPECTRUM CAPITAL LTD 2017.1      | 19-Jun-17                           | 8-Jun-21             | 430           | North America        | Industry Loss Index  | Bermuda             |                          |         |
| LION II RE DAC                   | 29-Jun-17                           | 15-Jul-21            | 228           | Europe               | Indemnity            | Ireland             |                          |         |
| NORTHSHORE RE II LTD 2017.1      | 29-Jun-17                           | 6-Jul-20             | 350           | North America        | Industry Loss Index  | Bermuda             |                          |         |
| WINDMILL I RE LTD 2017.1         | 30-Jun-17                           | 5-Jul-20             | 46            | Europe               | Indemnity            | Bermuda             |                          |         |
| Tokio Millennium Re AG           | 3-Jul-17                            | 7-Aug-19             | 71            | Asia                 | Unknown              | Bermuda             |                          |         |
| AmTrust Financial Services       | 19-Jul-17                           | 7-Jul-21             | 100           | North America        | Indemnity            | Bermuda             |                          |         |
| Unknown cedant                   | 20-Jul-17                           | 8-Jun-18             | 8             | Unknown Region/Peril | Unknown              | Bermuda             |                          |         |
| BELLEMEADE RE 2017.1 LTD         | 1-Oct-17                            | 25-Oct-27            | 968           | Other                | Indemnity            | Bermuda             |                          |         |
| GALLEO RE LTD (2017 - 1)         | 9-Nov-17                            | 6-Jan-20             | 150           | North America        | Industry Loss Index  | Bermuda             |                          |         |
| URSA RE LTD (2017 - 2)           | 30-Nov-17                           | 10-Dec-20            | 400           | North America        | Indemnity            | Bermuda             |                          |         |
| ARTEX SAC LTD SERIES GX NOTES    | 1-Dec-17                            | 5-Apr-19             | 50            | North America        | Unknown              | Bermuda             |                          |         |
| LI RE (2017 - 1)                 | 12-Dec-17                           | 10-Apr-19            | 10            | North America        | Unknown              | Bermuda             |                          |         |
| SEASIDE RE 2018.1                | 19-Dec-17                           | 15-Jan-19            | 20            | North America        | Unknown              | Bermuda             |                          |         |
| SEASIDE RE 2018.3                | 22-Dec-17                           | 15-Jan-19            | 27            | North America        | Unknown              | Bermuda             |                          |         |
| TAILWIND RE LTD (2017 - 1)       | 27-Dec-17                           | 8-Jan-22             | 400           | Multi                | Industry Loss Index  | Bermuda             |                          |         |
| SEASIDE RE 2018.2                | 29-Dec-17                           | 15-Jan-19            | 50            | North America        | Unknown              | Bermuda             |                          |         |
| DODEKA XIV                       | 29-Dec-17                           | 8-Jan-19             | 34            | North America        | Industry Loss Index  | Bermuda             |                          |         |
| 2018                             | RIBONACCI REINSURANCE               | 10-Jan-18            | 10-Jan-19     | 70                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
|                                  | ALPHA TERRA VALIDUS II              | 1-Jan-18             | 15-Jan-19     | 5                    | Other                | Indemnity           | Bermuda                  |         |
|                                  | RESILIENCE RE LTD. (SERIES 1812A)   | 1-Feb-18             | 8-Jan-19      | 60                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
|                                  | PANTHERA RE LIMITED (SERIES 2018.1) | 1-Feb-18             | 9-Mar-20      | 100                  | Unknown Region/Peril | Unknown             | Bermuda                  |         |
|                                  | MERNA RE LTD. (SERIES 2018.1)       | 1-Mar-18             | 8-Apr-21      | 300                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | SANDERS RE LTD. (SERIES 2018.1)     | 1-Mar-18             | 7-Apr-22      | 500                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | KIZUNA RE II LTD. (SERIES 2018.1)   | 1-Mar-18             | 11-Apr-23     | 200                  | Asia                 | Indemnity           | Bermuda                  |         |
|                                  | ANGBARE RE LTD. (SERIES 2018.1)     | 1-Mar-18             | 7-Apr-22      | 320                  | Asia                 | Indemnity           | Bermuda                  |         |
|                                  | RADNOR RE 2018.1 LTD.               | 1-Mar-18             | 25-Mar-28     | 424                  | North America        | Indemnity           | Bermuda                  |         |
|                                  | RESILIENCE RE LTD. (SERIES 1811A)   | 1-Mar-18             | 8-Jan-19      | 53                   | Unknown Region/Peril | Unknown             | Bermuda                  |         |
| NAKAMA RE LTD. (SERIES 2018.1)   | 1-Mar-18                            | 13-Apr-23            | 700           | Asia                 | Indemnity            | Bermuda             |                          |         |

Source: Artemis, Bermuda Stock Exchange and Bloomberg.

## Bermuda: Registration of Special Purpose Insurers (SPIs) and Number of ILS

The number of SPI registrations during the quarter increased year-over-year (Figure 12). The BMA licensed five SPIs during Q1-2018 compared to two registrations during the same period last year.

Table VIII. SPI Registrations and ILS issuance in Bermuda, Q1-2010 to Q1-2018

|      |                     | SPI Registrations | Bermuda-based ILS |
|------|---------------------|-------------------|-------------------|
| 2010 | Q1                  | 2                 | 0                 |
|      | Q2                  | 3                 | 2                 |
|      | Q3                  | -                 | -                 |
|      | Q4                  | 3                 | 1                 |
|      | <b>Annual Total</b> | <b>8</b>          | <b>3</b>          |
| 2011 | Q1                  | 2                 | -                 |
|      | Q2                  | 8                 | 1                 |
|      | Q3                  | 4                 | 4                 |
|      | Q4                  | 9                 | 3                 |
|      | <b>Annual Total</b> | <b>23</b>         | <b>8</b>          |
| 2012 | Q1                  | 4                 | 2                 |
|      | Q2                  | 9                 | 3                 |
|      | Q3                  | 2                 | 3                 |
|      | Q4                  | 12                | 3                 |
|      | <b>Annual Total</b> | <b>27</b>         | <b>11</b>         |
| 2013 | Q1                  | 8                 | 2                 |
|      | Q2                  | 12                | 10                |
|      | Q3                  | 9                 | 7                 |
|      | Q4                  | 22                | 6                 |
|      | <b>Annual Total</b> | <b>51</b>         | <b>25</b>         |
| 2014 | Q1                  | 4                 | 9                 |
|      | Q2                  | 12                | 14                |
|      | Q3                  | 2                 | 5                 |
|      | Q4                  | 10                | 8                 |
|      | <b>Annual Total</b> | <b>28</b>         | <b>36</b>         |
| 2015 | Q1                  | 7                 | 11                |
|      | Q2                  | 7                 | 14                |
|      | Q3                  | 1                 | 8                 |
|      | Q4                  | 5                 | 3                 |
|      | <b>Annual Total</b> | <b>20</b>         | <b>36</b>         |
| 2016 | Q1                  | 2                 | 6                 |
|      | Q2                  | 6                 | 12                |
|      | Q3                  | 0                 | 8                 |
|      | Q4                  | 9                 | 4                 |
|      | <b>Annual Total</b> | <b>17</b>         | <b>30</b>         |
| 2017 | Q1                  | 2                 | 14                |
|      | Q2                  | 9                 | 24                |
|      | Q3                  | 2                 | 3                 |
|      | Q4                  | 11                | 13                |
|      | <b>Annual Total</b> | <b>24</b>         | <b>54</b>         |
| 2018 | Q1                  | 5                 | 11                |
|      | <b>Annual Total</b> | <b>5</b>          | <b>11</b>         |

## Appendix

### Bermuda: Structural Factors and Supervisory Regime

A sophisticated legal system, a strong regulatory framework, a developed infrastructure, as well as the local availability of highly-skilled human capital, underpin Bermuda's reputation as a quality jurisdiction and domicile of choice for insurance, reinsurance and financial services' companies. Bermuda is known for its innovative (re)insurance industry, which has shown resilience during the financial crisis.

Bermuda has emerged as a leader in the global ILS market after implementing a specific regulatory framework to facilitate the formation of such instruments through a new licence class for insurers. In 2009, the Bermuda Monetary Authority introduced the concept of a Special Purpose Insurer (SPI), following passage of the Insurance Amendment Act 2008. Bermuda's regulatory and supervisory framework also provides for the creation of sidecars, Industry Loss Warranties (ILWs) and collateralised reinsurance vehicles. The ILS market has benefitted from a large investor base and the existing (re)insurance expertise in Bermuda which hosts one of the world's largest reinsurance markets. The global reinsurance market had total assets of approximately \$605.0 billion at end Q2-2017.<sup>1</sup>

#### BOX 1: REGULATORY FRAMEWORK FOR ILS IN BERMUDA

The following information provides a brief overview of the legislation governing the process of forming SPIs as issuers of ILS in Bermuda.<sup>5</sup> For this purpose, SPIs are structured as "bankruptcy remote" entities which are required to be fully-funded and independent companies that accept pre-specified insurance risk from sophisticated (re)insurers. The regulatory focus during the licensing process of SPIs is on the assessment of the certainty of the contractual arrangements governing the SPI and the complete collateralisation of the policy limits of insurance risk ceded to the SPI. The SPI must have access to a sound infrastructure for underwriting and servicing claims, including sound governance surrounding the custody of collateral assets. Moreover, policyholders and investors are restricted to sophisticated participants.

##### *Incorporation and Registration Process*

The process of establishing an SPI is substantially similar to that of "conventional" commercial insurers. Key elements of the "Licensing Application" include: (i) a business plan, which provides the fundamental elements of the proposed transaction. Importantly, evidences both the fully collateralised nature of the business and sophisticated participants; (ii) a completed "SPI Checklist" (a standard BMA form); (iii) drafts of relevant transaction documents (such as reinsurance agreements, collateral trust agreements, etc.); and (iv) service provider agreements.

##### *Supervision of SPIs*

To ensure effective and prudent supervision of SPIs, the Authority has established a supervisory regime that reflects the unique characteristics of the SPI structures as well the evolving aspects of the SPI business model. The key pillars of the SPI supervisory program include: (i) Risk profiling; (ii) Review of annual and quarterly filings and closing documents; and (iii) On-site Review which involves supervisory teams conducting additional assessment work at the premises of the SPI.

## References

### Data Sources

Artemis Deal Directory  
([http://www.artemis.bm/deal\\_directory/](http://www.artemis.bm/deal_directory/))

Bermuda Stock Exchange (BSX): Insurance-Linked Securities and Programmes  
(<http://www.bsx.com/Comp-InsLinkSec.asp>)

Bloomberg L.P.

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<sup>1</sup> AON Benfield April 2018, "Reinsurance Market Outlook"

<sup>5</sup> The material presented is not intended to be a substitute for professional legal advice.