

Q1-2018 (Vol.6 No.1)

Bermuda Insurance-Linked Securities (ILS) Market Report

September 2018

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SUMMARY

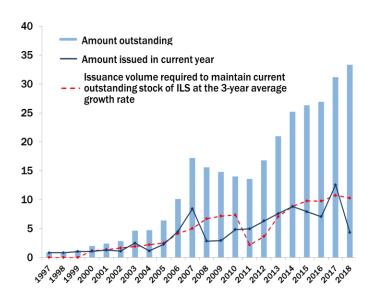
The net new risk capital issued for Q1-2018 from 17 new deals and 11 maturing deals was \$2.2 billion. Issuance volume in Q1-2018 increased year after year.

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

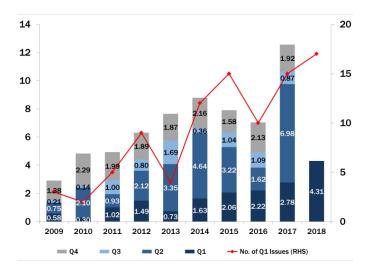
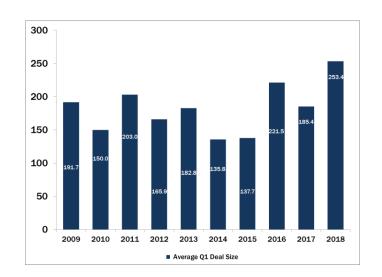


Figure 3. Global Q4 2009-Q1 2018 ILS Issuance (Average Deal Volume), 2009 to 2018 (In US\$ mln)



Source: Artemis and BMA staff calculations.

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. 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.

¹ 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
Bermuda	4.7	7.7	5.6	5.1	10.1	2.7
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	
Bermuda	25	36	36	30	52	11	
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)

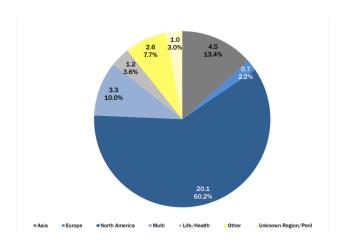
Trigger (In US\$ bln)	Bermuda	Cayman Islands	Ireland	United States & Other
Indemnity	25.4	9.8	1.1	_
Industry Loss Index	11.3	2.6	3.5	0.5
Medical Benefit Ratio Index	_	1.4	_	_
Modelled Loss	0.9	0.6	_	_
Mortality Index	_	0.8	0.2	0.3
Multiple	0.2	0.6	0.3	0.2
Parametric	1.5	0.6	_	2.3
Parametric Index	_	0.7	0.2	_
Unknown	2.1	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	15.7	3.5	0.8	_
Industry Loss Index	7.1	_	0.8	_
Longevity Index	_	_	_	_
Medical benefit ratio index	_	0.6	_	_
Modelled Loss	0.3	_	_	_
Mortality Index	_	0.1	0.2	0.3
Multiple	_	_	_	_
Parametric	0.5	_	_	1.9

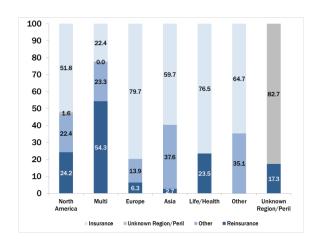
The majority of ILS covers North American perils which account for 60.2% (\$20.1 billion) of total outstanding volume (Figures 4 and 5).² Asian and multi-regional perils account for 13.4% (\$4.5 billion) and 10.0% (\$3.3 billion) of the market, respectively, while the remaining four categories are each 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.

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

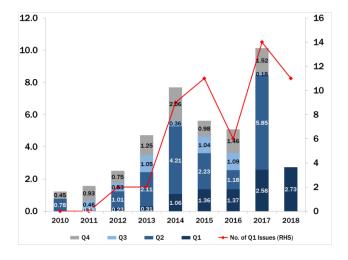
Primary Market: Domestic Issuance

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.

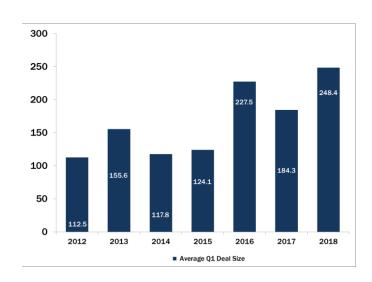
The BSX accounted for 77.3% of the global market capitalisation of ILS at the end of Q1-2018. A total of 104 ILS deals (comprising 171 tranches) is listed on the BSX with an aggregate nominal value of approximately \$25.8 billion,³ of which \$1.4 billion (5.4%) are issued by vehicles domiciled in Ireland 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.

³ 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)

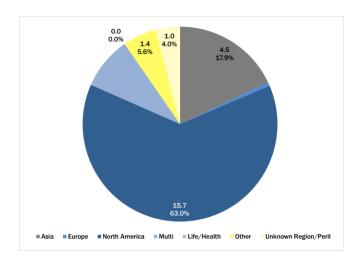
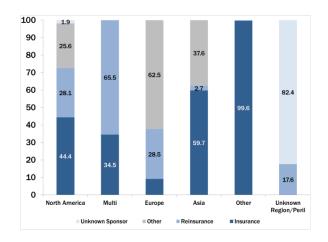


Figure 9. Outstanding Coverage per Region/Peril by ILS Sponsor Type for Domestic Deals, end Q1-2018 (In %)



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.⁴ 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)

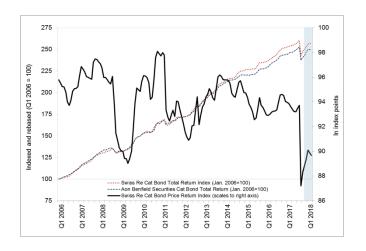
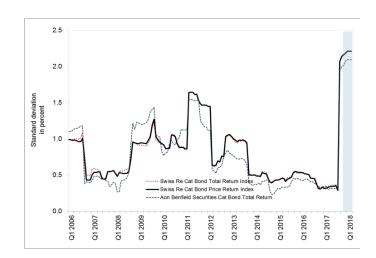


Figure 11. ILS Total Return Benchmark Indices: Annualised Return Volatility, O1 2006 - O1 2018 (In %)



Source: Bloomberg and BMA staff

⁴ 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	
Price Return 1/	Q4	Q1	Q2	Q3	Q4	Q1
Swiss Re Cat Bond Total Return Index	0.3	0.3	0.3	-1.7	1.3	0.6
Swiss Re Cat Bond Price Return Index (scales to right axis)	-0.2	-0.1	-0.1	-2.1	0.8	0.1
Aon Benfield Securities Cat Bond Total Return	0.2	0.4	0.3	-1.5	1.3	0.5
Return Volatility						
Annualised Standard Deviation 2/						
Swiss Re Cat Bond Total Return Index	0.3	0.3	0.4	0.9	2.2	2.2
Swiss Re Cat Bond Price Return Index (scales to right axis)	0.3	0.3	0.3	0.9	2.2	2.2
Aon Benfield Securities Cat Bond Total Return	0.3	0.3	0.3	0.9	2.0	2.1
Normalised Squared Returns (In standard deviations) 3/						
Swiss Re Cat Bond Total Return Index	-0.6	-0.7	-0.5	1.4	-0.2	-0.3
Swiss Re Cat Bond Price Return Index (scales to right axis)	-0.1	-0.4	-0.5	1.0	-0.2	-0.3
Aon Benfield Securities Cat Bond Total Return	-0.9	-0.6	-0.4	1.7	-0.2	-0.3

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 w indow 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	BS) Listin
	Unknown cedant	RESILIENCE RE LTD (1712)	3-Jan-17	8-Jan-19	187	Unknown Region/Peril	Unknown	Bermuda	4
	Unknown cedant	SEASIDE RE 2017-1	5-Jan-17	15-Jan-18	87	Unknown Region/Peril	Unknown	Bermuda	1
	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	
		1 1 1							-
	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	✓
φ	Aetna	VITALITY RE VIII 2017-1	25-Jan-17	8-Jan-21	200	Life/Health	Medical benefit ratio index	Cayman Islands	
2018	Terra Brasis Re	ALPHA TERRA VALIDUS I	6-Feb-17	15-Jan-18	5	North America	Indemnity	Bermuda	1
01	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	1
	State Farm	MERNA RE LTD 2017-1	31-Mar-17	8-Apr-20	300	North America	Indemnity	Bermuda	
	Unknown cedant	ECLIPSE RE LTD 2017-01A	31-Mar-17	1-Apr-19	20	Unknown Region/Peril	Unknown	Bermuda	1
	Everest Re	KILIMANJARO II RE LTD 2017-1	13-Apr-17	20-Apr-21	950	North America	Industry Loss Index	Bermuda	
		_	ł						+
	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	1
							,		-
	USAA	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 Specilaty 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	1
	Heritage Property & Casualty Insurance Company	CITRUS RE LTD 2017-2	11-May-17	18-Mar-20	35	North America	Indemnity	Bermuda	1
i l	California Earthquake Authority	URSA RE LTD 2017-1	16-May-17	27-May-20	925	North America	Indemnity	Bermuda	
107	First Mutual Transportation Assurance Co	METROCAT RE LTD	22-May-17	8-May-20	125	North America	Indemnity	Bermuda	
,	· · · · · · · · · · · · · · · · · · ·		 				-		+
y	Texas Windstorm Insurance Association	ALAMO RE LTD 2017-1	30-May-17	8-Jun-20	400	North America	Parametric	Bermuda	1
	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	V
	Great American Insurance Group	RIVERFRONT RE LTD 2017-1	31-May-17	15-Jan-21	190	North America	Indemnity	Bermuda	1
	Avatar Property & Casualty Insurance Company	CASABLANCA RE LTD 2017-1	1-Jun-17	4-Jun-20	100	North America	Indemnity	Cavman 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	1
	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		Bermuda	
	* *					<u> </u>	Indemnity		-
	Tokio Millenium Re AG	HOTARU 2	3-Jul-17	7-Aug-19	71	Asia	Unknown	Bermuda	٧
	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	١ ,
	Unknown cedant	ARTEX SAC LTD - SERIES EX NOTES	20-Jul-17	8-Jun-18	8	Unknown Region/Peril	Unknown	Bermuda	١.
.	FONDEN / Agroasemex S.A.	IBRD / FONDEN 2017	4-Aug-17	11-Aug-20	360	North America	Parametric	Other	
,		DOM RE IC LTD 2017	Δ.Δug.17	4-Aug-23	15	North America		Other	
	Unknown cedant	DOM RE IC LTD 2017	4-Aug-17	4-Aug-23	15	North America	Indemnity	Other	
	Arch Capital Group Ltd.	BELLEMEADE RE 2017-1 LTD	1-0ct-17	25-Oct-27	368	Other	Indemnity	Bermuda	-
									-
	Arch Capital Group Ltd.	BELLEMEADE RE 2017-1 LTD	1-0ct-17	25-Oct-27	368	Other	Indemnity	Bermuda	-
	Arch Capital Group Ltd. XL Bermuda Ltd.	BELLEMEADE RE 2017-1 LTD GALILEO RE LTD (2017-1)	1-Oct-17 3-Nov-17	25-0ct-27 6-Jan-20	368 150	Other North America	Indemnity Industry Loss Index	Bermuda Bermuda	, , , , , , , , , , , , , , , , , , ,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA	BELLEMEADE RE 2017-1 LTD GALILEO RE LTD (2017 -1) RESIDENTIAL REINSURANCE	1-Oct-17 3-Nov-17 17-Nov-17	25-0ct-27 6-Jan-20 6-Dec-21	368 150 295	Other North America North America	Indemnity Industry Loss Index Indemnity	Bermuda Bermuda Cayman Islands	V
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority	BELLEMEADE RE 2017-1 LTD GALILEO RE LTD (2017 -1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017 -2)	1-Oct-17 3-Nov-17 17-Nov-17 30-Nov-17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20	368 150 295 400	Other North America North America North America	Indemnity Industry Loss Index Indemnity Indemnity	Bermuda Bermuda Cayman Islands Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant	BELLEMEADE RE 2017-1 LTD GALLEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1)	1-Oct-17 3-Nov-17 17-Nov-17 30-Nov-17 1-Dec-17 12-Dec-17	25-Oct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19	368 150 295 400 50	Other North America North America North America North America North America North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Transfer	BELLEMEADE RE 2017-1 LITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAC LITD SERIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2)	1-Oct-17 3-Nov-17 17-Nov-17 30-Nov-17 1-Dec-17 12-Dec-17 14-Dec-17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19 10-Apr-19 30-May-18	368 150 295 400 50 10	Other North America North America North America North America North America North America Europe	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown codant Ulknkrown codant Allianz Risk Transfer Covea Group	BELLEMEADE RE 2017-1 L'ITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAC LITD SERIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1)	1.0ct.17 3.Nov.17 17.Nov.17 30.Nov.17 1.Dec.17 12.Dec.17 14.Dec.17 15.Dec.17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19 10-Apr-19 30-May-18 19-Jan-22	368 150 295 400 50 10 15	Other North America North America North America North America North America North America Europe Europe	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric Indemnity	Bermuda Bermuda Coyman Islands Bermuda Bermuda Bermuda Bermuda Islands	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LTD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LT RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1	1.0ct17 3.Nov17 17-Nov17 30-Nov17 1.Dec-17 12-Dec-17 14-Dec-17 15-Dec-17 19-Dec-17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19 10-Apr-19 30-May-18 19-Jan-22 15-Jan-19	368 150 295 400 50 10 15 106	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Parametric Indemnity Unknown	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown codant Ulknkrown codant Allianz Risk Transfer Covea Group	BELLEMEADE RE 2017-1 L'ITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAC LITD SERIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1)	1.0ct.17 3.Nov.17 17.Nov.17 30.Nov.17 1.Dec.17 12.Dec.17 14.Dec.17 15.Dec.17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19 10-Apr-19 30-May-18 19-Jan-22	368 150 295 400 50 10 15	Other North America North America North America North America North America North America Europe Europe	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric Indemnity	Bermuda Bermuda Coyman Islands Bermuda Bermuda Bermuda Bermuda Islands	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LTD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LT RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1	1.0ct17 3.Nov17 17-Nov17 30-Nov17 1.Dec-17 12-Dec-17 14-Dec-17 15-Dec-17 19-Dec-17	25-0ct-27 6-Jan-20 6-Dec-21 10-Dec-20 5-Apr-19 10-Apr-19 30-May-18 19-Jan-22 15-Jan-19	368 150 295 400 50 10 15 106	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Parametric Indemnity Unknown	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Tensfer Covea Group Unknown cedant Unknown cedant Unknown cedant	BELLEMEADE RE 2017-1 L'ITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAC LITD SERRIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3	1-0ct-17 3-Nov-17 17-Nov-17 30-Nov-17 1-Dec-17 12-Dec-17 14-Dec-17 15-Dec-17 19-Dec-17 22-Dec-17	25 Oct 27 6-Jan-20 6-Dec 21 10-Dec 20 5-Apr-19 10-Apr-19 30-May-18 19-Jan-22 15-Jan-19	368 150 295 400 50 10 15 106 20 27	Other North America North America North America North America North America North America Europe Europe North America North America North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric Indemnity Unknown Unknown Unknown	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Ireland Ireland Bermuda Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant Unknown cedant Unknown cedant Validus Holdings	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3 TAILWIND RE LTD (2017-1)	1-0ct17 3Nov17 17-Nov17 30Nov17 1-Dec17 12-Dec17 14-Dec17 15-Dec17 19-Dec17 22-Dec17 27-Dec17	25 Oct 27 6-Jan-20 6-Dec 21 10-Dec 20 5-Apr.19 10-Apr.19 30-May.18 19-Jan-22 15-Jan-19 15-Jan-19	368 150 295 400 50 10 15 106 20 27	Other North America North America North America North America North America North America Europe Europe Europe North America North America North America North America North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Unknown Unknown Unknown Indemnity Unknown Indemnity Unknown Industry Loss Index Unknown	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Bermuda Ireland Bermuda Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAC LITD SERIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEKA XIV	1-0ct-17 3-Nov-17 17-Nov-17 30-Nov-17 1-Dec-17 12-Dec-17 14-Dec-17 15-Dec-17 19-Dec-17 22-Dec-17 29-Dec-17 29-Dec-17	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 8 Jan 22	368 150 295 400 50 10 15 106 20 27 400 50 34	Other North America North America North America North America North America North America Europe Europe North America North America North America Morth America Multi North America North America North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index	Bermuda Bermuda Cayman Islands Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2017-2) ARTEX SAG LITD SERIES GX NOTES LI RE (2017-1) MARRET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEKA XIV VITALITY RE IX LTD. (SERIES 2018-1)	1-0ct17 3-Nov17 17-Nov17 30-Nov17 1-0ce17 1-0ce17 14-0ce17 15-0ce17 19-0ce17 22-0ce17 29-0ce17 29-0ce17	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 15 Jan 19 8 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22	368 150 295 400 50 10 15 106 20 27 400 50 34	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric Indemnity Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Vinknown cedant Unknown cedant	BELLEMEADE RE 2017-1 LTD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-2 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEHA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-17 14-0cc-17 14-0cc-17 15-0cc-17 19-0cc-17 22-0cc-17 27-0cc-17 29-0cc-17 13-nct-18 10-jan-18	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 21 15 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown	Bermuda Bermuda Cayman Islands Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODENA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II	1-0ct17 3-Nov17 17-Nov17 30-Nov17 1-0ce17 1-0ce17 14-0ce17 15-0ce17 19-0ce17 22-0ce17 29-0ce17 29-0ce17	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 15 Jan 19 8 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22	368 150 295 400 50 10 15 106 20 27 400 50 34	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Indemnity Unknown Unknown Parametric Indemnity Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Vinknown cedant Unknown cedant	BELLEMEADE RE 2017-1 LTD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-2 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEHA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-17 14-0cc-17 14-0cc-17 15-0cc-17 19-0cc-17 22-0cc-17 27-0cc-17 29-0cc-17 13-nct-18 10-jan-18	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 21 15 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70	Other North America North America North America North America North America North America Europe Europe North America	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown	Bermuda Bermuda Cayman Islands Bermuda	, , , , , , , , , , , , , , , , , , ,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODENA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II	1-0ct-17 3-Nov-17 17-Nov-17 18-Nov-17 10-0ct-17 10-0ct-17 11-0ct-17 11-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 19 10 Jan 19 10 Jan 20 10 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5	Other North America North America North America North America North America North America Europe Europe North America North America North America North America Multi North America North America North America North America North America North America Unknown Region/Peril Other	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Validus Holdings Unknown cedant Unknown cedant Unknown cedant Unknown cedant Unknown cedant Unknown cedant Terra Brasis Re Unknown cedant	BELLEMEADE RE 2017-1 LITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2027-2) ARTEX SAC LITO SERIES GX NOTES LI RE (2017-1) MARKET RE LITD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODENA JW VITALITY RE IX LITD. (SERIES 2018-1) HEBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LITD. (SERIES 2018-1) PANTHERA RE LIMITED (SERIES 2018-1)	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-17 10-0ct-17 10-0ct-17 10-0ct-17 10-0ct-17 20-0ct-17 20-0ct-17 20-0ct-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 10 Jan 22 15 Jan 19 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22 15 Jan 19 8 Jan 21 15 Jan 19 8 Jan 21 15 Jan 21 15 Jan 31	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60	Other North America Europe Europe North America North America Multi North America North America North America Unknown Region/Peril Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Unknown Unknown Unknown Unknown Unknown Industry Loss Index Unknown Indemnity Unknown Indemnity Unknown Unknown Unknown	Bermuda Bermuda Cayman Islands Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Allianz Risk Transfer Covea Group Unknown cedant Unknown	BELLEMEADE RE 2017-1 LITD GALILEO RE LITD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITD (2027-2) ARTEX SAC LITD SERIES GX NOTES LI RE (2017-1) MARKET RE LID(2017-2) HEXGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 TAILWIND RE LITD (2017-1) SEASIDE RE 2018-2 DODEKA XIV VITALITY RE IX LITD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LITD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018	1-0ct17 3-Nov17 17-Nov17 3-Nov17 1-0cv17 1-0cv17 12-0cv17 14-0cv17 15-0cv17 19-0cv17 22-0cv17 22-0cv17 29-0cv17 29-0cv17 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22 10 Jan 22 10 Jan 29	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15	Other North America North America North America North America North America North America Europe Europe North America Unknown Region/Peril Unknown Region/Peril Unknown Region/Peril Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity	Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re Unknown Unknown Republic of Peru	BELLEMEADE RE 2017-1 LITD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEMA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED (2018 IBRD CAR 120	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-17 11-0cc-17 11-0cc-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 19 10 Jan 19 15 Jan 19	368 150 295 400 50 10 15 16 20 27 400 50 34 200 70 5 60 100 15 200	Other North America Europe Europe North America North America North America North America North America Unit North Amer	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Parametric	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Germuda Bermuda Bermuda Bermuda Bermuda Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEN XIV VITALITY BE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRD CAR 120 IBRD CAR 120 IBRD CAR 118-119	1-0ct-17 3-Nov-17 17-Nov-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 8 Jan 19 10 Jan 19 15 Jan 19 16 Jan 19 17 Jan 19 18 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260	Other North America North America North America North America North America North America Europe Europe North America North America North America North America North America Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Unknow	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Germuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re Unknown Unknown Republic of Peru	BELLEMEADE RE 2017-1 LITD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEMA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED (2018 IBRD CAR 120	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-17 11-0cc-17 11-0cc-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 19 10 Jan 19 15 Jan 19	368 150 295 400 50 10 15 16 20 27 400 50 34 200 70 5 60 100 15 200	Other North America Europe Europe North America North America North America North America North America Unit North Amer	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Parametric	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Germuda Bermuda Bermuda Bermuda Bermuda Bermuda	,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEN XIV VITALITY BE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRD CAR 120 IBRD CAR 120 IBRD CAR 118-119	1-0ct-17 3-Nov-17 17-Nov-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 8 Jan 19 10 Jan 19 15 Jan 19 16 Jan 19 17 Jan 19 18 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260	Other North America North America North America North America North America North America Europe Europe North America North America North America North America North America Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Unknow	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Germuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown cedant Unknown cedant Unknown cedant Unknown cedant Validus Holdings Unknown cedant Unknown Terra Brasis Re Unknown Unknown Terra Brasis Re	BELLEMEADE RE 2017-1 LITD GALILEO RE LITO (2017-1) RESIDENTIAL REINSURANCE URSA RE. LITO (2017-2) ARTEX SAC LITO SERIES GX NOTES LI RE (2017-1) MARKET RE LITO(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODENA XIV VITALITY RE IX.LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRO CAR 120 IBRO CAR 113-119 IBRO CAR 113-119 IBRO CAR 1117	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 13 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22 15 Jan 19 15 Jan 19 10 Jan 22 10 Jan 19 15 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260	Other North America Europe Europe North America Unknown Region/Peril Multi Multi Multi	Indemnity Industry Loss Index Indemnity Unknown Unknown Unknown Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Unknown Indemnity Unknown Indemnity Parametric Parametric	Bermuda Bermuda Cayman Islands Bermuda Germuda Germuda Germuda Dermuda Bermuda Dermuda Bermuda Dermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Guernsey Other	
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re Unknown Unknown cedant Unknown cedant Unknown cedant Unknown Republic of Peru FONDEN / AGROASEMEX S.A. Republic of Colombia Republic of Chile State Farm	BELLEMEADE RE 2017-1 LITD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-3 TAILWIND RE LTD (2017-1) SEASIDE RE 2018-2 DODEKA 3W VITALITY RE IX LTD. (SERIES 2018-1) HIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILLENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRO CAR 120 IBRO CAR 115-119 IBRO CAR 116 MERNA RE LID. (SERIES 2018-1)	1-0ct.17 3-Nov.17 17-Nov.17 17-Nov.17 10-0ct.17 10-0ct.17 11-0cc.17 11-0cc.1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 10 Jan 22 15 Jan 19 10 Jan 22 15 Jan 19 16 Jan 19 17 Jan 19 18 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260 400 500 300	Other North America Europe Europe Europe North America North America North America North America North America Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Parametric Parametric Parametric Parametric Indemnity	Bermuda Bermuda Cayman Islands Bermuda Guernsee Bermuda Guernsey Other Other	, , , , , , , , , , , , , , , , , , , ,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA USAA Unknown cedant Unknown Terra Brasis Re Unknown Terra Brasis Re Unknown Terra Brasis Re Unknown Republic of Peru FONDEM / AGROASEMEX S.A. Republic of Colombia Republic of Colombia Republic of Colombia State Farm Alistate	BELLEMEADE RE 2017-1 LITD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEKA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRD CAR 118-119 IBRD CAR 116 MERNA RE LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1)	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0c-17 10-0c-17 11-0c-17 1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 15 Jan 19 15 Jan 19 10 Jan 22 15 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260 400 300 500	Other North America Europe Europe North America North America North America North America North America Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Parametric Parametric Parametric Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Germuda Germuda Germuda Germuda Bermuda Bermuda Germuda Bermuda Guernsey Other Other	, , , , , , , , , , , , , , , , , , ,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re Unknown Terra Bras	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEN XIV VITALITY BE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESULENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) IBRD CAR 113- IBRD CAR 115- IBRD CAR 116- IBRD CAR 117 IBRD CAR 116 MERNA RE LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1) VALUNA RE II LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1) KIZUNA RE II LTD. (SERIES 2018-1)	1-0ct-17 3-Nov-17 17-Nov-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 15 Jan 19 10 Jan 21 15 Jan 19 10 Jan 22 10 Jan 19 15 Jan 19 16 Jan 19 17 Jan 19 18 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260 400 500 300 500	Other North America Europe Europe North America Unknown Region/Peril Other Other Other Other North America North America Asia	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Unknown Indemnity Unknown Indemnity Parametric Parametric Parametric Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Caymanda Bermuda Bermuda Caymanda Bermuda	, , , , , , , , , , , , , , , , , , ,
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA USAA Unknown cedant Unknown Terra Brasis Re Unknown Terra Brasis Re Unknown Terra Brasis Re Unknown Republic of Peru FONDEM / AGROASEMEX S.A. Republic of Colombia Republic of Colombia Republic of Colombia State Farm Alistate	BELLEMEADE RE 2017-1 LITD GALLEO RE LTD (2017-4) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEKA XIV VITALITY RE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESILIENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) JUNGFRAU IC LIMITED 2018 IBRD CAR 118-119 IBRD CAR 116 MERNA RE LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1)	1-0ct-17 3-Nov-17 17-Nov-17 17-Nov-17 10-0c-17 10-0c-17 11-0c-17 1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 15 Jan 19 15 Jan 19 10 Jan 22 15 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260 400 300 500	Other North America Europe Europe North America North America North America North America North America Unknown Region/Peril	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Industry Loss Index Unknown Industry Loss Index Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Unknown Indemnity Parametric Parametric Parametric Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Germuda Germuda Germuda Germuda Bermuda Bermuda Germuda Bermuda Guernsey Other Other	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	Arch Capital Group Ltd. XL Bermuda Ltd. USAA California Earthquake Authority Unknown cedant Unknown Terra Brasis Re Unknown Terra Bras	BELLEMEADE RE 2017-1 LITD GALILEO RE LTD (2017-1) RESIDENTIAL REINSURANCE URSA RE. LTD (2017-2) ARTEX SAC LTD SERIES GX NOTES LI RE (2017-1) MARKET RE LTD(2017-2) HEXAGON REINSURANCE DAC (2017-1) SEASIDE RE 2018-1 SEASIDE RE 2018-1 SEASIDE RE 2018-2 DODEN XIV VITALITY BE IX LTD. (SERIES 2018-1) FIBONACCI REINSURANCE ALPHA TERRA VALIDUS II RESULENCE RE LTD. (SERIES 1812A) PANTHERA RE LIMITED (SERIES 2018-1) IBRD CAR 113- IBRD CAR 115- IBRD CAR 116- IBRD CAR 117 IBRD CAR 116 MERNA RE LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1) VALUNA RE II LTD. (SERIES 2018-1) SANDERS RE LTD. (SERIES 2018-1) KIZUNA RE II LTD. (SERIES 2018-1)	1-0ct-17 3-Nov-17 17-Nov-17 10-0ct-17 10-0ct-1	25 Oct 27 6 Jan 20 6 Dec 21 10 Dec 20 5 Apr 19 10 Apr 19 30 May 18 19 Jan 22 15 Jan 19 8 Jan 22 15 Jan 19 15 Jan 19 10 Jan 21 15 Jan 19 10 Jan 22 10 Jan 19 15 Jan 19 16 Jan 19 17 Jan 19 18 Jan 19	368 150 295 400 50 10 15 106 20 27 400 50 34 200 70 5 60 100 15 200 260 400 500 300 500	Other North America Europe Europe North America Unknown Region/Peril Other Other Other Other North America North America Asia	Indemnity Industry Loss Index Indemnity Unknown Industry Loss Index Unknown Unknown Indemnity Unknown Indemnity Parametric Parametric Parametric Indemnity	Bermuda Bermuda Cayman Islands Bermuda Bermuda Bermuda Bermuda Bermuda Ireland Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Caymanda Bermuda Bermuda Caymanda 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 (\$min)	Region/Peril Covered	Trigger Type	Country of Issuance (SF
	KIZUNA RE II LTD 20151	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 CITRUS RE 2015-1	31-Mar-15	9-Apr-18	300 278	North America	Indemnity	Bermuda
	PELICAN II RE LTD	8-Apr-15 14-Apr-15	9-Apr-18 16-Apr-18	100	North America North America	Indemnity	Bermuda 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
15	AZZURRO RE I LTD	17-Jun-15	16-Jan-19	225	Europe	Indemnity	Ireland
201	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	8-0ct-15	7-Dec-18	275	North America	Parametric	United States
	KILIMANJARO 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 GALILEO RE LTD 2016-1	29-Dec-15 27-Jan-16	14-Jan-21 8-Jan-19	300	Asia	Indemnity Industry Loss Index	Bermuda Bermuda
	CITRUS RE LTD 2016-1	24-Feb-16	25 Feb 19	250	North America	Indemnity	Bermuda
	MERNA RE LTD 2016-1	24-rep-16 3-Mar-16	25-Feb-19 8-Apr-19	300	North America	Indemnity	Bermuda
	MANATEE RE LTD 2016-1	10-Mar-16	13-Mar-19	75	North America	Indemnity	Bermuda
	AKIBARE II LTD 2016-1	14-Mar-16	7-Apr-20	200	Asia	Indemnity	Bermuda
	AOZORA 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
(0	QUEEN STREET XII RE	20-May-16	8-Apr-20	190	Multi	Industry Loss Index	Ireland
016	OPERATIONAL RE LTD	26-May-16	8-Apr-21	218	Other	Indemnity	Bermuda
201	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 29-Sep-16	26-Jul-19	225	North America	Industry Loss Index	Bermuda
	NAKAMA RE LTD 2016-1 URSA RE LTD 2016-1	29-Sep-16 30-Nov-16	13-0ct-21 10-Dec-19	700 500	Asia North America	Indemnity	Bermuda Bermuda
	URSA RE LTD 2016-1 BONANZA RE LTD 2016-1	30-Nov-16 1-Dec-16	10-Dec-19 3-Dec-19	500 200	North America North America	Indemnity	Bermuda Bermuda
	HORSE CAPITAL I DAC	1-Dec-16	3-Dec-19 15-Jun-20	200	North America Other	Indemnity	Ireland Ireland
	GALILEI 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 (1712)	3-Jan-17	8-Jan-19	187	Unknown Region/Peril	Unknown	Bermuda
	ARTEX SAC LTD - SERIES DX NOTES	10-Jan-17	6-Apr-18	50	Unknown Region/Peril	Unknown	Bermuda
	GALILEI 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
	AOZORA 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 MERNA RE LTD 2017-1	31-Mar-17 31-Mar-17	1-Apr-19 8-Apr-20	20 300	Unknown Region/Peril North America	Unknown	Bermuda Bermuda
	KILIMANJARO II RE LTD 2017-1	31-Mar-17 13-Apr-17	20-Apr-21	950	North America	Indemnity Industry Loss Index	Bermuda
	KILIMANJARO II RE LTD 2017-1	13-Apr-17	21-Apr-22	300	North America	Industry Loss Index	Bermuda
	RESILIENCE RE LTD (1741A)	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	16-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
17	SANDERS RE LTD 2017-2	31-May-17	5-Jun-20	200	North America	Indemnity	Bermuda
201	RIVERFRONT RE LTD 2017-1	31-May-17	15-Jan-21	190	North America	Indemnity	Bermuda
- 4	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 (1761A)	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	28-Jun-17	15-Jul-21	228	Europe	Indemnity	Ireland
							1
	NORTHSHORE RE II LTD 2017-1	29-Jun-17	6-Jul-20	350	North America	Industry Loss Index	Bermuda
					1	Indemnity	Bermuda
	WINDMILL I RE LTD 2017-1	30-Jun-17	5-Jul-20	46	Europe		1
	WINDMILL I RE LTD 2017-1 Tokio Millenium Re AG	30-Jun-17 3-Jul-17	5-Jul-20 7-Aug-19	46 71	Europe Asia	Unknown	Bermuda
							1
	Tokio Millenium Re AG	3-Jul-17	7-Aug-19	71	Asia	Unknown	Bermuda
	Tokio Millenium Re AG AmTrust Financial Services	3-Jul-17 19-Jul-17	7-Aug-19 7-Jul-21 8-Jun-18	71 100	Asia North America Uniknown Region/Peril	Unknown Indemnity Unknown	Bermuda Bermuda
	Toko Millenium Re AQ AmTrust Financial Services Unknown cedant BELIEMEADE RE 2017:1 LTD	3-Jul-17 19-Jul-17 20-Jul-17 1-Oct-17	7-Aug:19 7-Jul-21 8-Jun-18 25-Oct-27	71 100 8 368	Asia North America Unknown Region/Peril Other	Unknown Indemnity Unknown Indemnity	Bermuda Bermuda Bermuda Bermuda
	Tokio Millenium Re AG AmTrust Financial Services Unknown cedant BELLEMEADE RE 2017-1 LITD GALLEG RE LTD (2017-4)	3-Jul-17 19-Jul-17 20-Jul-17 1-Oct-17 3-Nov-17	7-Aug 19 7-Jul 21 8-Jun 18 25-Oct 27 6-Jan 20	71 100 8 368 150	Asia North America Unknown Region/Peril Other North America	Unknown Indemnity Unknown Indemnity Indennity Industry Loss Index	Bermuda Bermuda Bermuda Bermuda Bermuda
	Toko Millenium Re AG Am Trust Financial Services Unknown celant BELLEMAGE RE 2017 A LTD GALLEG RE LTD (2017 A) URSA RE LTD (2017 2)	3-Jul-17 19-Jul-17 20-Jul-17 1-0ct-17 3-Nov-17 30-Nov-17	7-Aug 19 7-Jul-21 8-Jun-18 25-Oct-27 6-Jan-20 10-Dec-20	71 100 8 368 150 400	Asia North America Unknown Region/Peril Other North America North America	Unknown Indemnity Unknown Indemnity Industry Loss Index Indemnity	Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda
	Tokio Millerium Re AG Am Insut Financial Services Undosomo cedant BELLEMADG RE 2017-1 LTD GALEO RE LTD (2017-1) LWSA RE: LTD (2017-2) APTEX SAC LTD SERVES GX NOTES	3-Jul-17 19-Jul-17 20-Jul-17 1-0c-17 3-Nov-17 3-Nov-17 1-De-17	7-Aug 19 7-Jul 21 8-Jun 18 25-Oct 27 6-Jun 20 10-Dec 20 5-Apr 19	71 100 8 368 150 400 50	Asia North America Unknown Region/Perl Other North America North America North America	Unknown Indemnity Unknown Indemnity Industry Loss Index Indemnity Industry Loss Index Indemnity	Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda
	Tokin Millerium Re MG Am Trust Financial Services Unbinoam cedant BELLEMADG RE 2017-1 UTD GALEG RE LTD (2017-4) UNBA RE. LTD (2017-2) ARTES SAC UTD SERRES KNOTES U RE (2017-1)	3-lai-17 19-Jui-17 20-Jui-17 1-0e-17 3-Nov-17 3-Nov-17 1-De-17 12-De-17	7-Aug19 7-Jul 21 8-Jun 18 25-Oct 27 6-Jan 20 10-Dec 20 5-Apr 19 10-Apr 19	71 100 8 368 150 400 50	Asia North America Urianoun Region/Peril Other North America North America North America North America North America	Unknown Indemnity Unknown Indemnity Industry Loss Index Indemnity Unknown Unknown Unknown	Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda Bermuda
	Tokio Millenium Re MG Amfloss Financial Services Unknown cedant BELLEMANGE RE 2017-1 UTD GALLEO RE LTD (2017-4) URSA RE. LTD (2017-2) ARTEX SAN CID SERIES OX NOTES LI RE (2017-4) SEASIDE RE 2018-1	3-lai-17 19-lai-17 20-lai-17 1-0c-17 3Nov-17 3-0Nov-17 1-0e-17 12-0e-17 19-0e-17	7-Aug19 7-Jul 21 8-Jun 18 25-Oct 27 6-Jan 20 10-Dec 20 5-Apr 19 10-Apr 19 15-Jan 19	71 100 8 368 150 400 50 10	Asia North America Uraknown Region/Peril Other North America North America North America North America North America	Unknown Indemnity Unknown Indemnity Indemnity Indexity Indexity Indexity Indexity Indexity Unknown Unknown Unknown	Bermuda
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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
	Q1	2	0
	Q2	3	2
2010	Q3	-	-
2	Q4	3	1
	Annual Total	8	3
	Q1	2	-
	Q2	8	1
2011	Q3	4	4
2	Q4	9	3
	Annual Total	23	8
	Q1	4	2
	Q2	9	3
2012	Q3	2	3
2	Q4	12	3
	Annual Total	27	11
	Q1	8	2
	Q2	12	10
2013	Q3	9	7
2	Q4	22	6
	Annual Total	51	25
	Q1	4	9
	Q2	12	14
2014	Q3	2	5
(1	Q4	10	8
	Annual Total	28	36
	Q1	7	11
	Q2	7	14
2015	Q3	1	8
.,	Q4	5	3
	Annual Total	20	36
	Q1	2	6
(0	Q2	6	12
2016	Q3	0	8
	Q4	9	4
	Annual Total	17	30
	Q1	2	14
	Q2	9	24
2017	Q3	2	3
	Q4	11	13
	Annual Total	24	54
2018	Q1	5	11
20	Annual Total	5	11

Source: BMA 11

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.

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.⁵ 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

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¹AON Benfield April 2018, "Reinsurance Market Outlook"

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