

More records drive further growth

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INTRO

This report reviews the catastrophe bond and insurance-linked securities (ILS) market at the end of the first-quarter of 2017, looking at new risk capital issued and the composition of transactions completed during the quarter.

First-quarter catastrophe bond and ILS issuance once again broke records, with a huge \$2.76 billion of new risk capital brought to market from 25 tranches of notes via 14 deals. According to the Artemis Deal Directory this is the fourth consecutive year Q1 issuance has reached a new high, and in 2017 issuance was approximately \$1.4 billion above the ten-year average.

More than half of the tranches of notes issued in the first-quarter were privately placed, amounting to approximately \$891 million of total risk capital issued and underlining investor comfort and confidence with privately placed catastrophe bond transactions. A diverse spread of sponsors came to market in Q1 2017, which includes repeat and unknown sponsors, as well as two new sponsors in Terra Brasis Re and ICAT Syndicate 4242.

Catastrophe bond and ILS investors were treated to a strong issuance pipeline in the opening three months of the year, and clearly continue to view the asset class as an attractive and diversifying, alternative investment that adds real benefit to a portfolio. As a result, the outstanding market size at the end of Q1 2017 is the largest ever, at an impressive \$27.19 billion, roughly \$377 million higher than at the end of 2016.

Artemis is the leading, freely accessible source of timely, relevant and authoritative news, analysis, insight and data on the insurance-linked securities, catastrophe bond, alternative reinsurance capital and related risk transfer markets. The Artemis Deal Directory is the leading source of information, data and analysis on issued catastrophe bond and insurancelinked securitisation transactions.

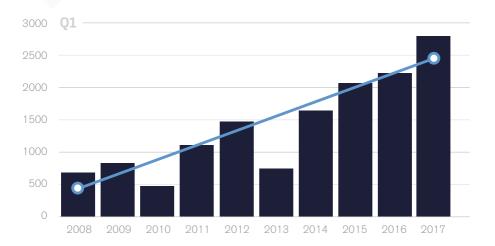
Transaction Recap

The opening quarter of 2017 saw a diverse range of perils come to market from a broad sponsor base, which included a mix of traditional 144A and private catastrophe bond transactions. Details of each transaction can be seen below.

ISSUER/TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Merna Re Ltd. (Series 2017-1)	State Farm	U.S. earthquake	300	Mar
Sanders Re Ltd. (Series 2017-1)	Allstate	U.S. multi-peril	375	Mar
Aozora Re Ltd. (Series 2017-1)	Sompo Japan Nipponkoa Insurance Company	Japan typhoon	480	Mar
Buffalo Re Ltd. (Series 2017-1) Class A	ICAT Syndicate 4242	U.S. multi-peril	105	Mar
Buffalo Re Ltd. (Series 2017-1) Class B	ICAT Syndicate 4242	U.S. multi-peril	59.5	Mar
Citrus Re Ltd. (Series 2017-1)	Heritage Property and Casualty Insurance Co.	U.S. named storms	125	Mar
Skyline Re Ltd. (Series 2017-1) Class 1	The Cincinnati Insurance Company	U.S. earthquake	100	Feb
Skyline Re Ltd. (Series 2017-1) Class 2	The Cincinnati Insurance Company	U.S. multi-peril	80	Feb
Resilience Re Ltd. (Series 1711A)	Unknown	Property catastrophe risks	63	Feb
Alpha Terra Validus I	Terra Brasis Re	LatAm property catastrophe risks	5	Feb
Vitality Re VIII Ltd. (Series 2017-1) Class A	Aetna	Medical benefit claims levels	140	Jan
Vitality Re VIII Ltd. (Series 2017-1) Class B	Aetna	Medical benefit claims levels	60	Jan
Galilei Re Ltd. (Series 2017-1) Class A-2	XL Insurance (Bermuda) Ltd.	International multi-peril	50	Jan
Galilei Re Ltd. (Series 2017-1) Class B-2	XL Insurance (Bermuda) Ltd.	International multi-peril	50	Jan
Galilei Re Ltd. (Series 2017-1) Class C-2	XL Insurance (Bermuda) Ltd.	International multi-peril	150	Jan
Galilei Re Ltd. (Series 2017-1) Class D-2	XL Insurance (Bermuda) Ltd.	International multi-peril	150	Jan
Galilei Re Ltd. (Series 2017-1) Class E-2	XL Insurance (Bermuda) Ltd.	International multi-peril	125	Jan
Artex SAC Limited - Series DX Notes	Unknown	Property catastrophe risks	50.227	Jan
Dodeka XI	Unknown	U.S. property catastrophe risks	19.451	Jan
Seaside Re (Series 2017-1A)	Unknown	Property catastrophe risks	27	Jan
Seaside Re (Series 2017-2)	Unknown	Property catastrophe risks	9.5	Jan
Seaside Re (Series 2017-3)	Unknown	Property catastrophe risks	50	Jan
Resilience Re Ltd. (Series 1712A)	Unknown	Property catastrophe risks	101	Jan
Resilience Re Ltd. (Series 1712B)	Unknown	Property catastrophe risks	35.99	Jan
Resilience Re Ltd. (Series 1712C)	Unknown	Property catastrophe risks	49.99	Jan

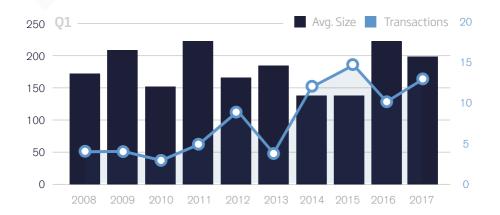
Q1 ILS issuance by year (\$M)

For the fourth consecutive year catastrophe bond and ILS issuance in the first-quarter broke records, surpassing \$2 billion for the third year running, with \$2.76 billion of new risk capital issued. As shown by data from the Artemis Deal Directory, issuance in Q1 2017 was roughly \$1.4 billion above the ten-year average.



ILS average transaction size & number of transactions by year (\$M)

The average transaction size in the first-quarter of 2017 was approximately \$197 million across 14 deals, which is above the ten-year average size of \$178 million, and six above the average number of transactions completed. Q1 saw a mix of private and traditional catastrophe bond transactions come to market, and the 14 deals recorded is the second most active first-quarter, in terms of number of deals, of the last ten-years.



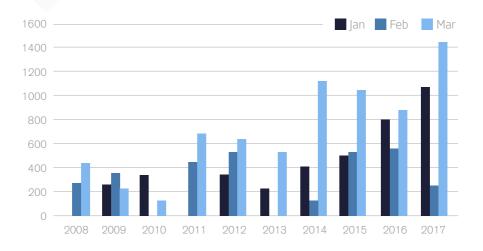
Number of transactions and volume issued by month (\$M)

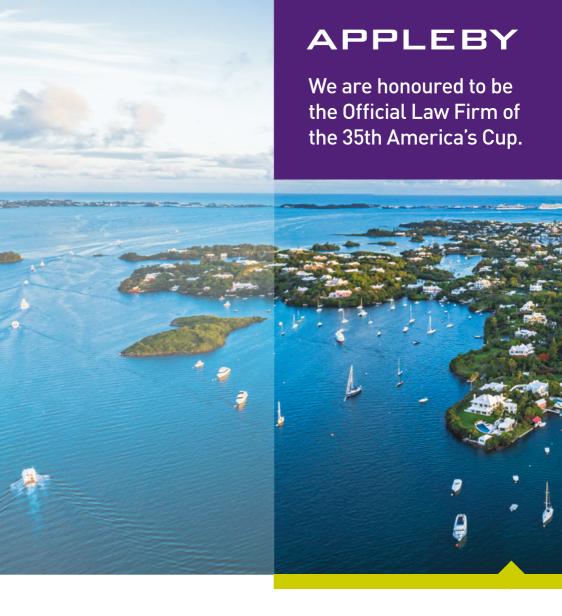
January witnessed a record \$1.07 billion of issuance in 2017 from six deals, making it the busiest month of the quarter in terms of number of transactions. February was the slowest month for issuance, with just \$248 million of risk capital brought to market from three deals. In terms of risk capital issued, March was the most active month, seeing a record \$1.45 billion of issuance from five deals.



Q1 issuance by month & year (\$M)

Record levels of new risk capital issued in both January and March more than offset a slow February in 2017, resulting in first-quarter catastrophe bond & ILS issuance being roughly \$1.4 billion above the ten-year average. As shown by the Artemis Deal Directory, February is typically the quietest month of the quarter, however the \$248 million of new risk capital issued is approximately \$52 million below the ten-year average.



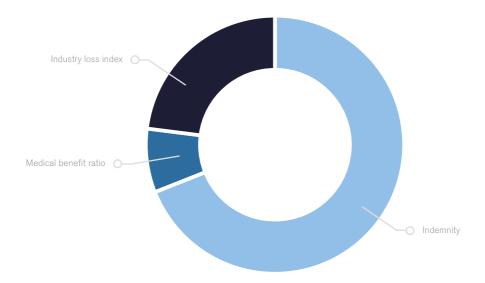






Q1 2017 ILS issuance by trigger type

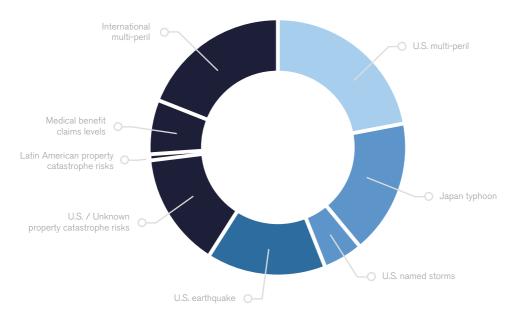
As expected, indemnity triggers dominated Q1 issuance in 2017, with sponsors securing \$1.62 billion of indemnity cover, accounting for roughly 69% of risk capital issued in the quarter, that we have detailed information for.



For the sixth consecutive first-quarter sponsor Aetna provided investors with some trigger structure diversification, with a \$200 million deal structured utilising a medical benefit ratio trigger, accounting for roughly 8% of Q1 issuance. The remaining, approximately 23%, or \$544 million of Q1 2017 catastrophe bond and ILS issuance utilised an industry loss index trigger.

Q1 2017 ILS issuance by peril

As seen throughout much of 2016 quarterly issuance, no one peril dominated the first-quarter of 2017. \$480 million of Japan typhoon risk from Sompo Japan was the largest single-peril deal in the quarter, accounting for 17% of total Q1 issuance.



For the first time in the market's history Latin American property catastrophe risk featured in the first-quarter, a \$5 million transaction from first time sponsor, Terra Brasis Re. U.S. and unknown property catastrophe risks also featured in Q1, bringing a combined \$406 million of new risk capital to the market.

25%, or roughly \$620 million of Q1 issuance covered multiple U.S. perils, including named storms, earthquakes, severe thunderstorms, volcanic eruption and meteorite impact risks. U.S. earthquake and U.S. named storm protection also featured in separate, stand-alone deals in Q1, as did \$200 million of medical benefit claims level protection from Aetna. The remaining \$525 million, or 19% of Q1 issuance covered multiple international perils.

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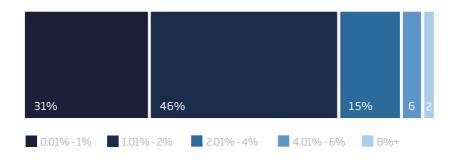
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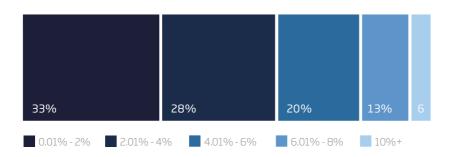
Q1 2017 ILS issuance by expected loss

For the \$1.87 billion of total risk capital issued that we have expected loss data for, the majority, 77% or \$1.43 billion of risk capital issued had an expected loss of below 2%. With \$575 million, or 31% of total issuance having an expected loss of below 1% in Q1. Roughly \$385 million of Q1 issuance had an expected loss of between 2% and 6%. The lowest expected loss seen in the quarter came from the Class A tranche of Vitality Re VIII notes, which had an expected loss of just 0.01%. The Class A-2 tranche of Galilei Re notes from XL Bermuda were the riskiest notes on offer, with an expected loss of 8.65%.



Q1 2017 ILS issuance by coupon pricing

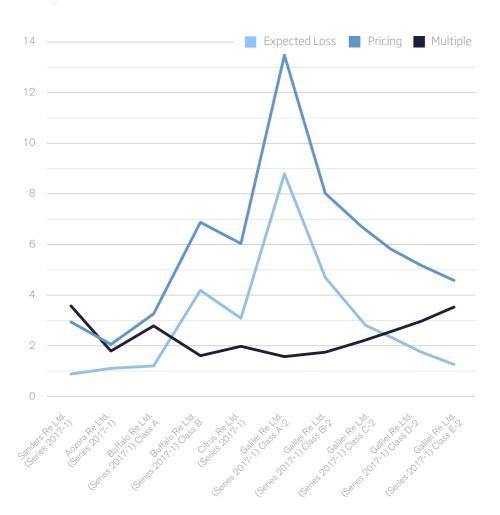
For Q1 issuance where we have pricing data (this amounts to \$2.049 billion of total risk capital issued), \$1.26 billion, or 62% paid investors a coupon of below 4%. A third, or \$680 million of Q1 issuance paid investors a coupon of below 2%. The Class A tranche of Vitality Re VIII notes, which had an extremely low expected loss, offered investors the lowest coupon in Q1, of 1.75%. The highest coupon on offer in the first-quarter came from the risky Class A-2 Galilei Re notes, at 13.25%.



Pricing multiples of Q1 2017 issuance

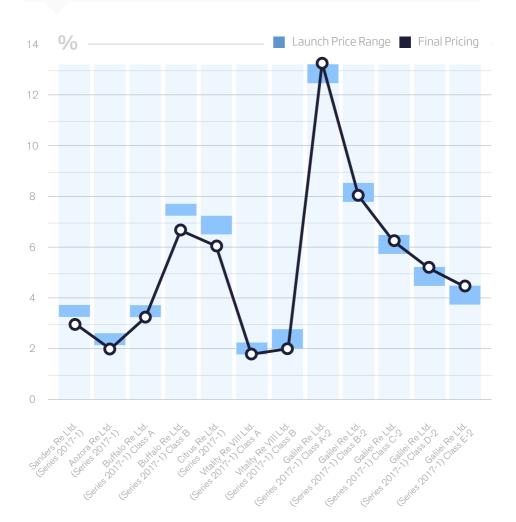
Where we have both the expected loss and pricing data, the average multiple (price coupon divided by expected loss) during the first-quarter of 2017 was 2.09, which, according to the Artemis Deal Directory is above the 1.97 seen for Q4 2016. The average multiple had declined throughout 2016 ending the year below 2, so it's promising for the market that it's returned to above 2 during the first-quarter of 2017.

Year-on-year, the average multiple in Q1 2017 has declined by 0.03 from the 2.12 recorded at the end of the first-quarter in 2016, as shown by the Artemis Deal Directory.



Cat bond and ILS price changes during Q1 2017 issuance

For the \$1.87 billion of total risk capital issued where we have full pricing data, the average price change in the first-quarter of 2017 was -5.74%. All but one tranche of Galilei Re notes issued priced above the mid-point of initial price guidance, with all other Q1 deals pricing below the mid-point of initial price guidance. The \$480 million Aozora Re issuance witnessed the steepest price decline while marketing, falling by 16.66%. While the E-2 tranche of Galilei Re notes witnessed the most dramatic price increase during the quarter, increasing by 9.09% while marketing.



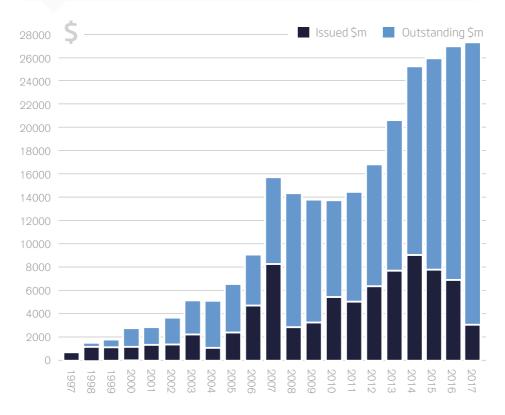
Issued / Outstanding

The first-quarter of 2017 was the strongest opening quarter, in terms of new risk capital issued, since the catastrophe bond and ILS market's inception roughly 20 years ago, and is the fourth first-quarter in a row that issuance records have been broken. An impressive \$2.76 billion of new risk capital came to market from repeat, first time, and unknown sponsors in the quarter, helping to offset more than \$2.3 billion of scheduled maturities.

As a result, the outstanding catastrophe bond and ILS market at the end of the first-quarter totalled a record \$27.19 billion, the largest size the outstanding cat bond market has ever been, beating the previous record by \$377 million, according to data from the Artemis Deal Directory.

Despite the volume of catastrophe bond and ILS maturities in the first-quarter of 2017, investor and sponsor appetite ensured the market once again recorded outright growth. When compared with the end of Q1 2016, the outstanding market in Q1 2017 is \$680 million larger, as shown by the Artemis Deal Directory.

More than \$4.5 billion of maturities are scheduled in Q2 2017, meaning that a significantly above average volume of Q2 issuance is required for the market to record growth once again.





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CONTACT ARTEMIS:

Steve Evans, Owner/Editor steve@artemis.bm +44 (0) 7711 244697

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