



# Q4 2016 Catastrophe Bond & ILS Market Report

Market reaches new heights

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# INTRO

This report reviews the catastrophe bond and insurance-linked securities (ILS) market at the end of the fourth-quarter of 2016, looking at new risk capital issued and the composition of transactions completed during the quarter.

Data from the Artemis Deal Directory reveals that catastrophe bond and ILS issuance during Q4 2016 totalled \$2.13 billion, exceeding the ten-year average by approximately \$337 million, helping full-year issuance exceed \$7 billion for the fourth year running.

Fourth-quarter issuance and strong investor and sponsor appetite throughout 2016 helped the market end the year at a new record size, of \$26.82 billion, according to data from the Artemis Deal Directory.

At \$354.4 million, the average transaction size issued in the fourth-quarter is the largest of the last decade and, this rises to an impressive \$423.3 million with the exclusion of Q4's only private, or cat bond lite transaction. A number of larger transactions came to market in the final quarter of the year, including a \$750 million deal from XL Bermuda, the largest cat bond of 2016. While trigger diversification lacked somewhat in the fourth-quarter, returning sponsors provided investors with some valuable geographic and peril risk diversification.

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 insurance-linked securitization transactions.

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# Transaction Recap

During the fourth-quarter six deals consisting of 15 tranches of notes were brought to the catastrophe bond and ILS market, resulting in \$2.13 billion of new risk capital issued.

In both Q2 & Q3 2016 unknown sponsors and private deals dominated issuance, in terms of number of transactions, but during Q4 just one private deal came to market, a \$10 million Li Re (Series 2016-2) transaction.

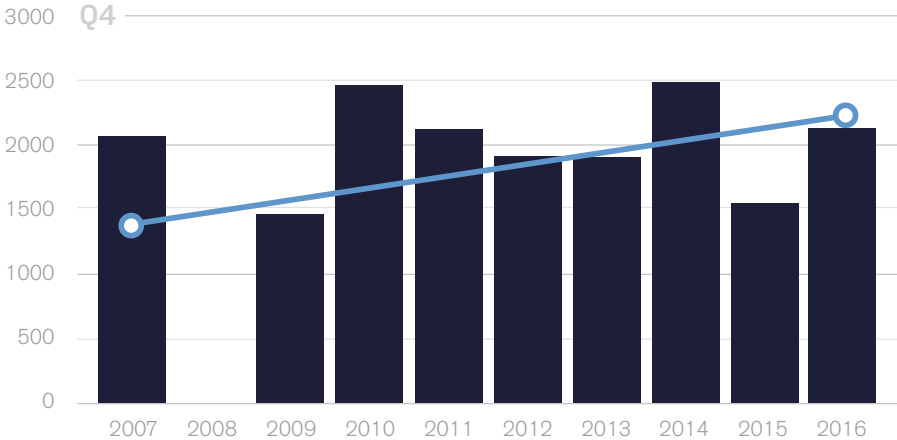
XL Bermuda returned to market with \$750 million of international multi-peril risks, covering U.S. named storms, U.S., Canada & Australian earthquake, European windstorm, and Australian tropical cyclone exposures. The California Earthquake Authority's third Ursa Re issuance provided it with \$500 million of California earthquake reinsurance. Assicurazioni Generali S.p.A. brought \$266.3 million of motor third-party liability risk to market via Horse Capital I DAC, while American Strategic Insurance returned with \$200 million of U.S. named storm and severe thunderstorm risk, via its Bonanza Re platform.

USAA added some U.S. multi-peril diversification in Q4, with a \$200 million issuance under its Residential Reinsurance platform.

ISSUER / TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Li Re (Series 2016-2)	Unknown	Property catastrophe risks	10	Dec
Galilei Re Ltd. (Series 2016-1) Class A-1	XL Bermuda Ltd.	International multi-peril	75	Dec
Galilei Re Ltd. (Series 2016-1) Class B-1	XL Bermuda Ltd.	International multi-peril	125	Dec
Galilei Re Ltd. (Series 2016-1) Class C-1	XL Bermuda Ltd.	International multi-peril	175	Dec
Galilei Re Ltd. (Series 2016-1) Class D-1	XL Bermuda Ltd.	International multi-peril	175	Dec
Galilei Re Ltd. (Series 2016-1) Class E-1	XL Bermuda Ltd.	International multi-peril	200	Dec
Horse Capital I DAC Class A	Assicurazioni Generali S.p.A.	Motor third-party liability	88.75	Dec
Horse Capital I DAC Class B	Assicurazioni Generali S.p.A.	Motor third-party liability	88.75	Dec
Horse Capital I DAC Class C	Assicurazioni Generali S.p.A.	Motor third-party liability	88.75	Dec
Bonanza Re Ltd. (Series 2016-1) Class A	American Strategic Insurance Group	U.S. named storms and severe thunderstorms	150	Dec
Bonanza Re Ltd. (Series 2016-1) Class B	American Strategic Insurance Group	U.S. named storms and severe thunderstorms	50	Dec
Ursa Re Ltd. (Series 2016-1) Class A	California Earthquake Authority	California earthquake	500	Nov
Residential Reinsurance 2016 Limited (Series 2016-2) Class 2	USAA	U.S. multi-peril	80	Nov
Residential Reinsurance 2016 Limited (Series 2016-2) Class 3	USAA	U.S. multi-peril	150	Nov
Residential Reinsurance 2016 Limited (Series 2016-2) Class 4	USAA	U.S. multi-peril	170	Nov

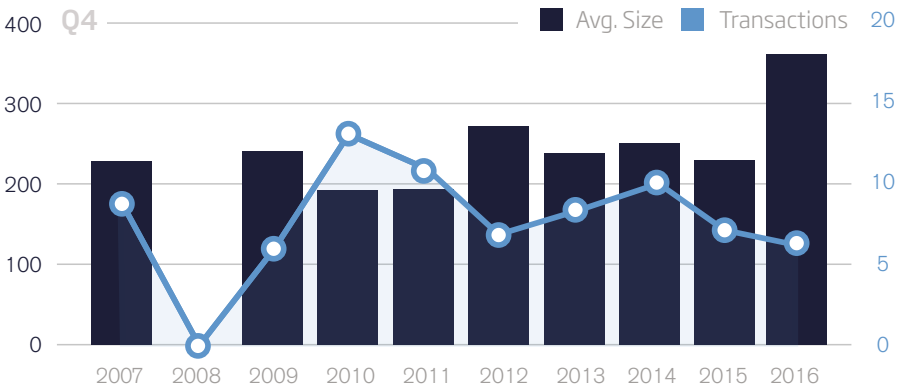
## Q4 ILS issuance by year (\$M)

The \$2.13 billion of new risk capital issued is the fifth time during the last decade that issuance levels have exceeded \$2 billion, during the fourth-quarter. Data from the Artemis Deal Directory shows that Q4 issuance was roughly \$337 million above the ten-year average.



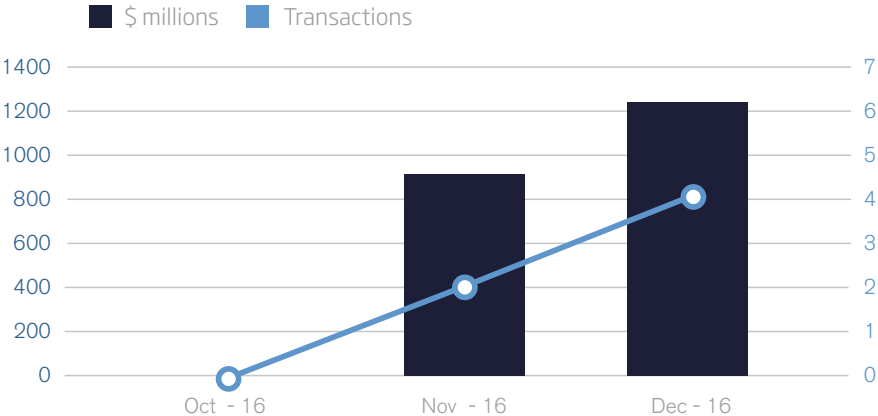
## ILS average transaction size & number of transactions by year (\$M)

The average transaction size in the fourth-quarter of 2016 was significantly higher than any recorded in the last ten-years, at roughly \$354 million, and also some way above the ten-year average of approximately \$217 million. The six deals issued in Q4 is actually the joint lowest number of deals seen in the period since 2008, a year when nothing came to market in Q4.



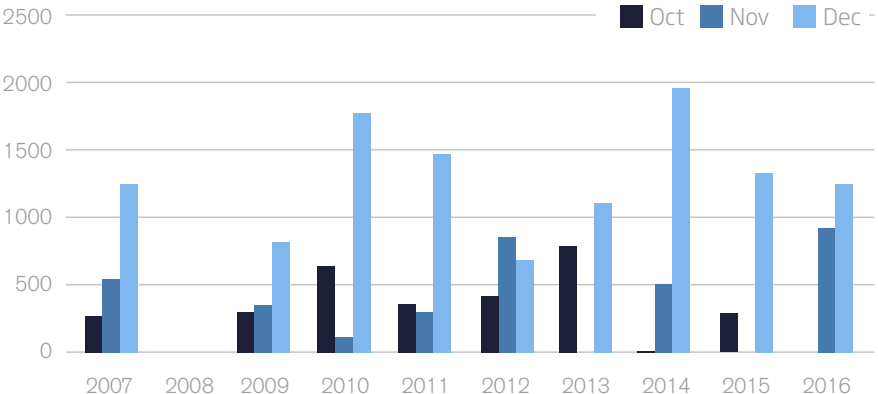
## Number of transactions and volume issued by month (\$M)

The \$900 million of issuance in November is the highest recorded in the month since the market's inception, and also the third busiest month of the year, in terms of risk capital issued. This helped offset the complete lack of catastrophe bond and ILS issuance in October. At \$1.23 billion, December issuance surpassed \$1 billion for the fourth year running.



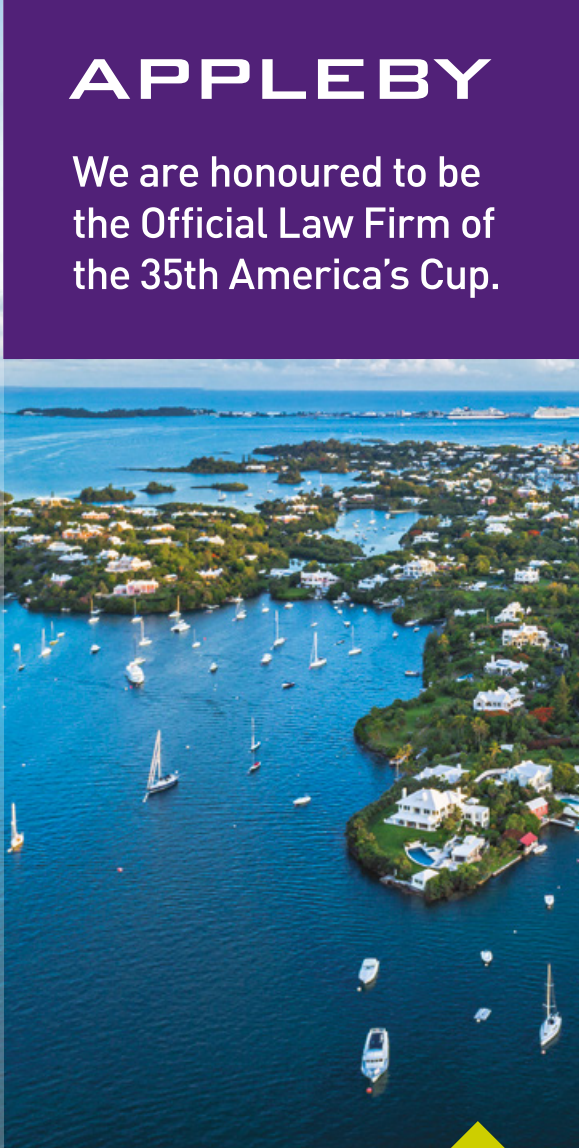
## Q4 issuance by month & year (\$M)

In terms of number of transactions, the majority came to market in the final month of the quarter. The four deals brought to market in December ensured it was the busiest month of the year, in terms of risk capital issued. The \$900 million of risk capital issued in November is approximately \$345 million above the ten-year average, according to the Artemis Deal Directory.



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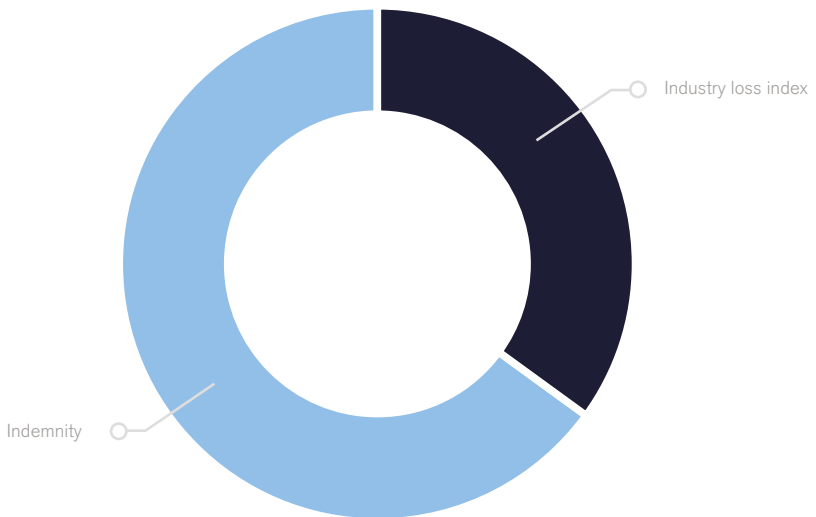


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## Q4 2016 ILS issuance by trigger type

Continuing the trend witnessed throughout the catastrophe bond market in recent years indemnity protection dominated issuance in Q4. Sponsors secured roughly \$1.37 billion of indemnity cover, which accounts for approximately 65% of total risk capital issued during the quarter.

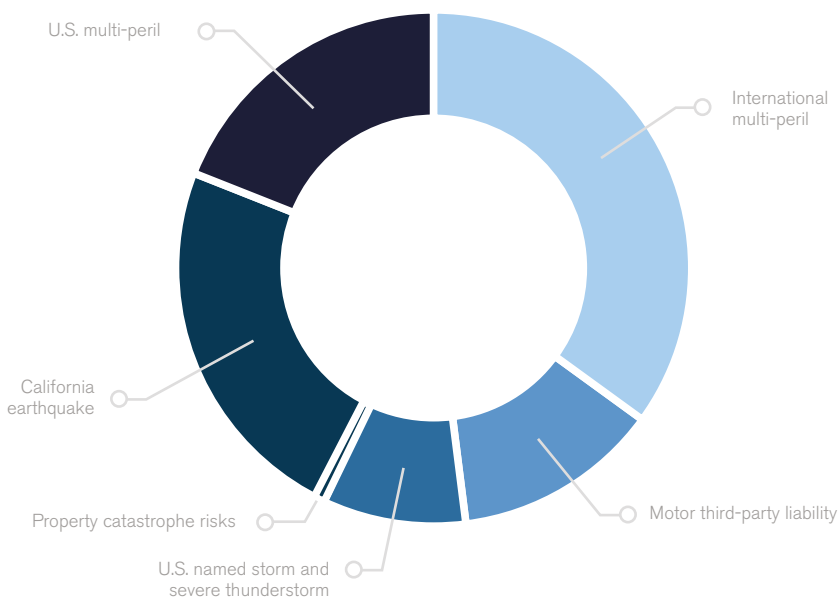


The remaining \$750 million, or 35% of new risk capital issued in Q4 utilised an industry loss index trigger, which, as shown by data from the Artemis Deal Directory, was the second most used trigger structure in 2016. As in the second-quarter of this year, trigger diversification was lacking in the final three months of 2016.



## Q4 2016 ILS issuance by peril

No single peril dominated fourth-quarter catastrophe bond issuance, and investors were able to take advantage of geographical and risk diversification.



Assicurazioni Generali's \$266.3 million deal brought some motor third-party liability risk to market, just the second time in the history of the marketplace that motor losses, in some form, has been covered. This is seen as an innovative transaction which could help to expand the ILS market.

XL Bermuda brought \$750 million of international multi-peril risk to market in Q4, which included the U.S., Europe, Australia, and a range of perils. The California Earthquake Authority's latest Ursa Re transaction provided investors with \$500 million of California earthquake diversification. USAA returned with another Residential Reinsurance issuance in Q4, providing investors with \$400 million of U.S. multi-peril risk. The launch of Bonanza Re from American Strategic Insurance offered investors \$200 million of U.S. named storms and severe thunderstorm protection, in Q4.

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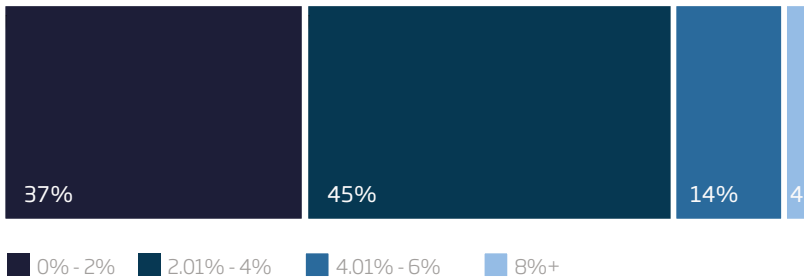
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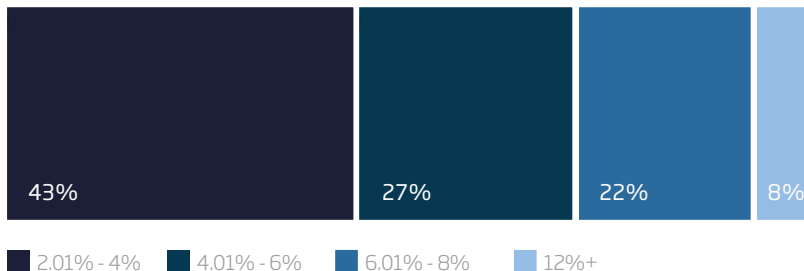
## Q4 2016 ILS issuance by expected loss

The majority, 83% or \$1.75 billion, of new risk capital issued in the fourth-quarter had an expected loss of below 4%, and the largest slice of this had an expected loss of between 2.01% and 4%. The riskiest notes on offer during the quarter came from the Galilei Re Ltd. (Series 2016-1) Class A-1 tranche of notes, which had an expected loss of 8.65%. No tranche of notes had an expected loss of below 1% in Q4, the first quarter in 2016 that this has happened. The Class E-1 tranche of Galilei Re Ltd. (Series 2016-1) notes had an expected loss of 1.29%, the lowest witnessed during the fourth-quarter.



## Q4 2016 ILS issuance by coupon pricing

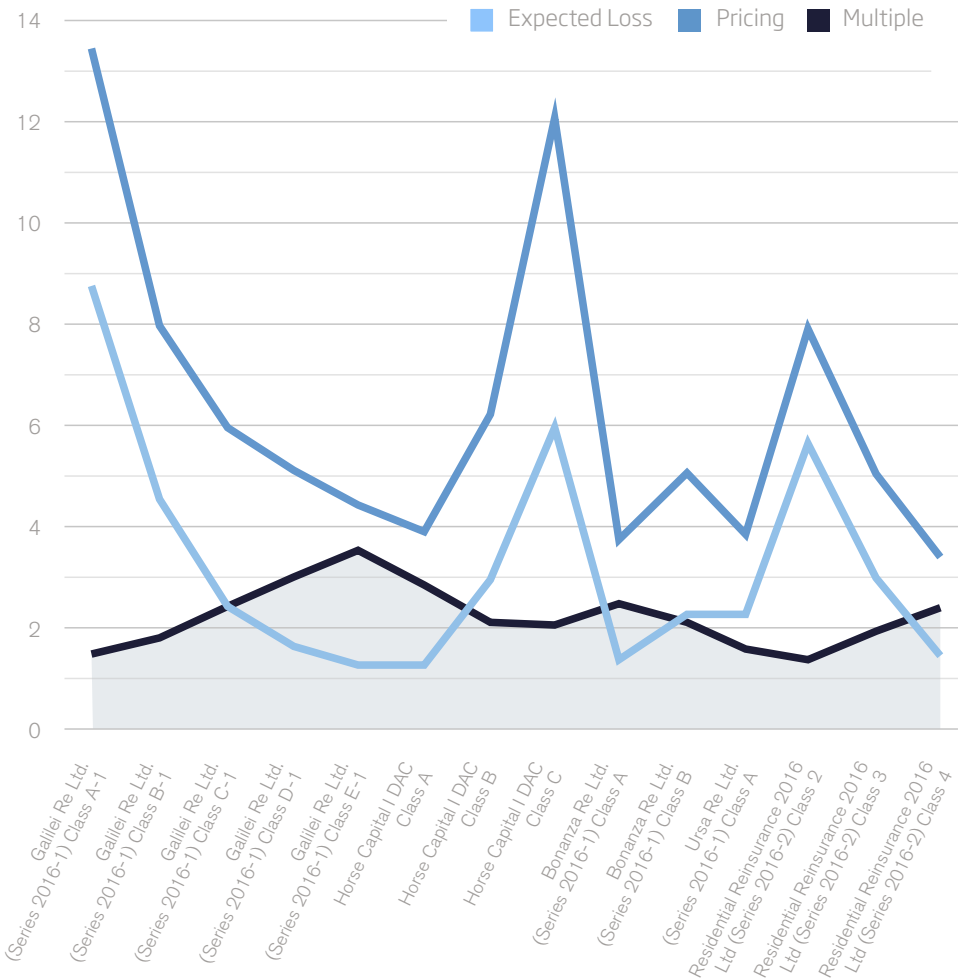
In terms of risk capital issued, 57%, or roughly \$1.2 billion of fourth-quarter issuance paid investors a coupon of above 4%. The remaining 43%, or roughly \$909 million of catastrophe bond and ILS issuance in Q4 paid investors a coupon of between 2.01% and 4%. Unsurprisingly, the riskiest tranche of notes on offer in the quarter, Galilei Re (Series 2016-1) Class A-1, had the highest coupon in Q4, of 13.25%. At 3.5%, the Class 4 tranche of Residential Reinsurance notes paid investors the lowest coupon witnessed in the fourth-quarter.



## Pricing multiples of Q4 2016 issuance

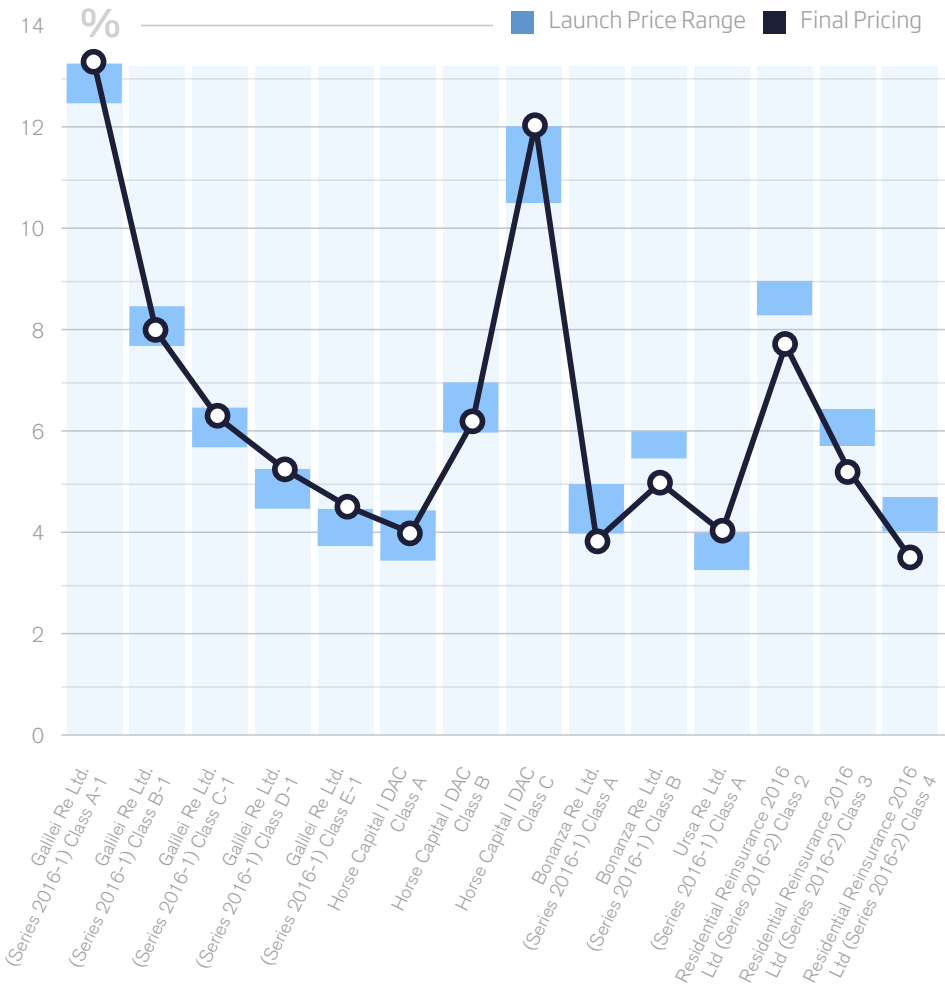
The average multiple (price coupon divided by expected loss) during the fourth-quarter of 2016 was 1.97. After declining for several quarters the average multiple of catastrophe bond and ILS issuance had stabilised somewhat during the first half of the year, before increasing slightly in the third-quarter of 2016. However, the Artemis Deal Directory shows that the average multiple in Q4 declined from the previous month, falling to just below 2.

The softened reinsurance market landscape continues to push investors to accept more risk at a lower return, but despite the average multiple falling in the fourth-quarter investors clearly remain attracted to the catastrophe bond and ILS sector.



## Cat bond and ILS price changes during Q4 2016 issuance

Despite half of the deals brought to market in Q4 pricing at or above the mid-point of initial guidance, the average price change during the fourth-quarter of 2016 was -2.91%, as price changes below the mid-point of initial price guidance were more dramatic than those that priced above. The most dramatic price decrease witnessed during Q4 came from the Class 4 tranche of Residential Reinsurance notes, which declined by 20% while marketing. Of the deals that priced above the mid-point of initial price guidance during the quarter, the Class A tranche of Ursa Re Ltd. (Series 2016-1) notes experienced the most dramatic increase while marketing, of 10.34%.

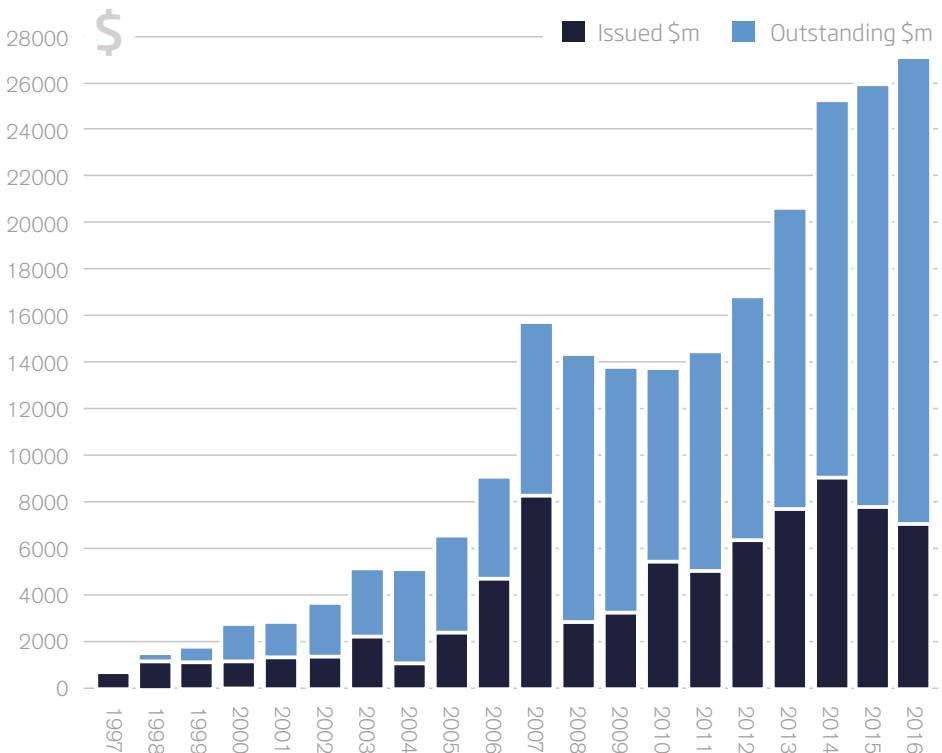


## Issued / Outstanding

Despite issuance in the fourth-quarter failing to break any individual quarterly records, the \$2.13 billion of new risk capital issued helped the outstanding catastrophe bond and ILS market end the year at an impressive \$26.82 billion. Data from the Artemis Deal Directory shows that this is a new record, the largest the outstanding market has been in its history, and is roughly \$304 million above the previous record, set at the end of Q1 2016.

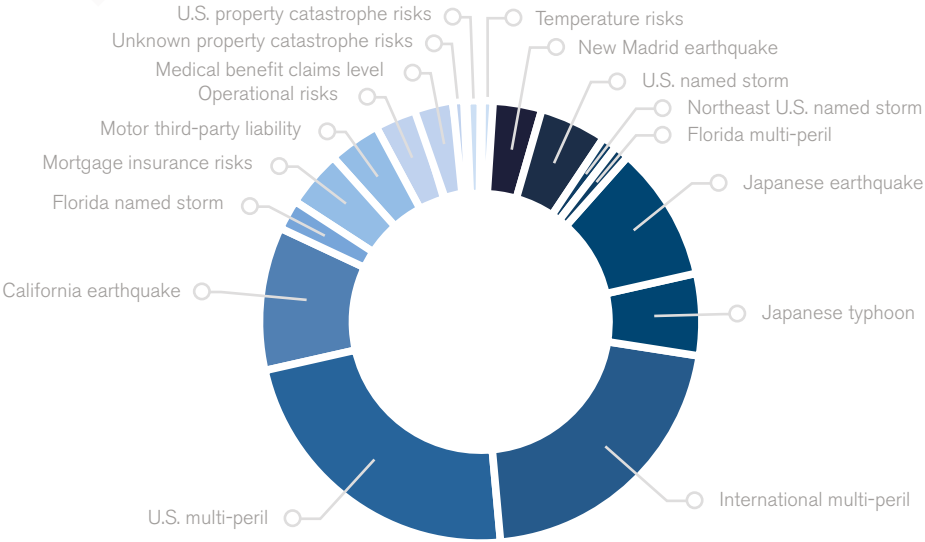
From the end of the fourth-quarter of 2015 to December 31st 2016, the outstanding market recorded growth of approximately \$917 million, as issuance throughout the year remained strong, again exceeding the \$7 billion mark.

In spite of insurance and reinsurance market pressures, catastrophe bond and ILS business clearly remains attractive to investors, underlined by the continued growth of the sector even though returns are reduced, and competition intense. Re/insurance market headwinds are expected to persist into 2017, so it will be interesting to see if the catastrophe bond and ILS market can continue to expand and grow.

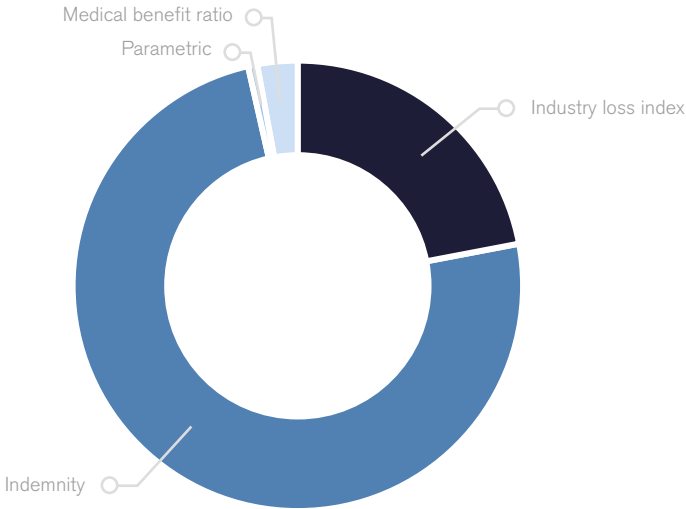


If you want to see full details of every catastrophe bond and ILS transaction included in the data in this report please visit [www.artemis.bm/deal\\_directory/](http://www.artemis.bm/deal_directory/)

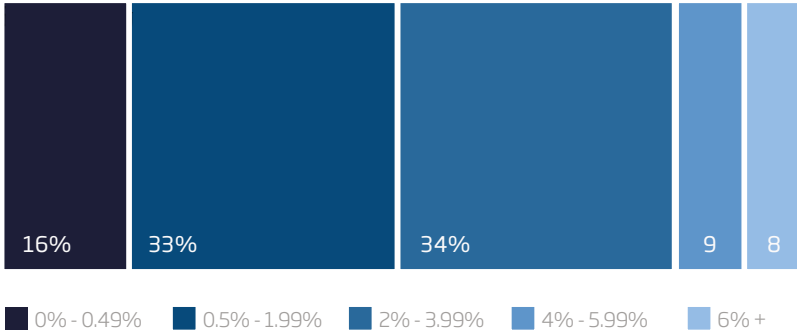
## Full-year 2016 ILS issuance by peril



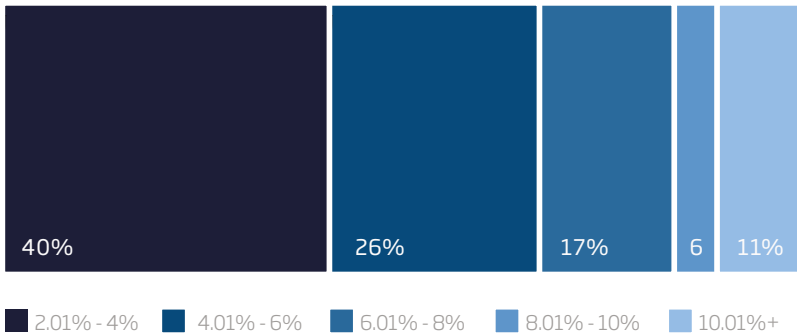
## Full-year 2016 ILS issuance by trigger



## Full-year 2016 ILS issuance by expected loss

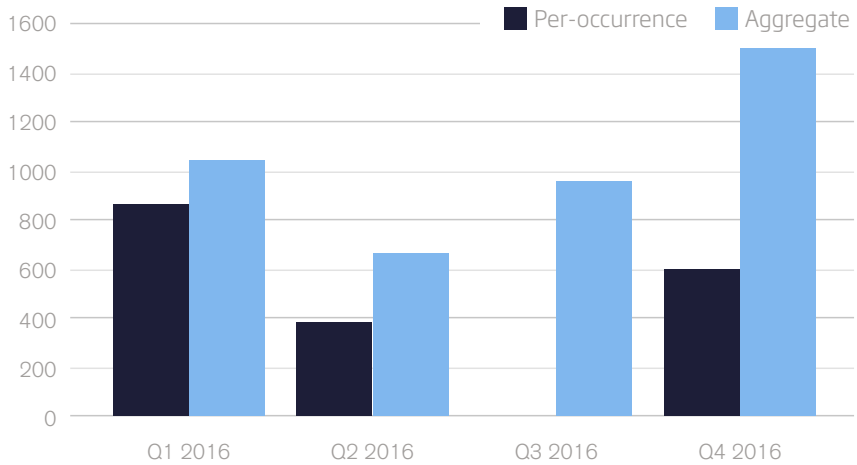


## Full-year 2016 ILS issuance by coupon pricing

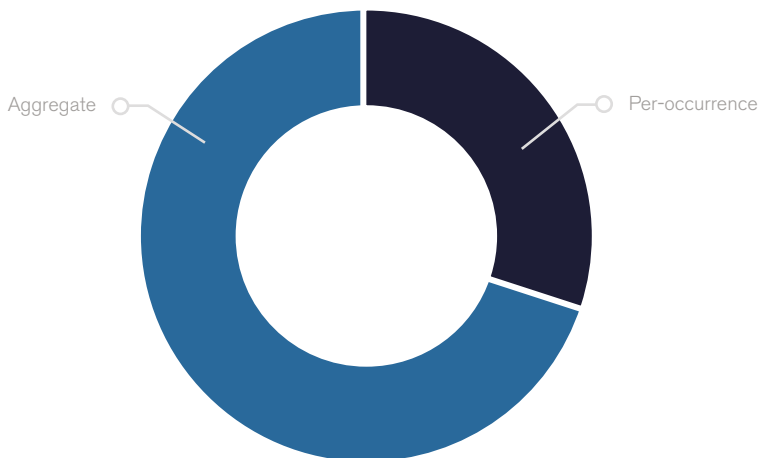




## 2016 ILS issuance per-occurrence vs aggregate split by quarter



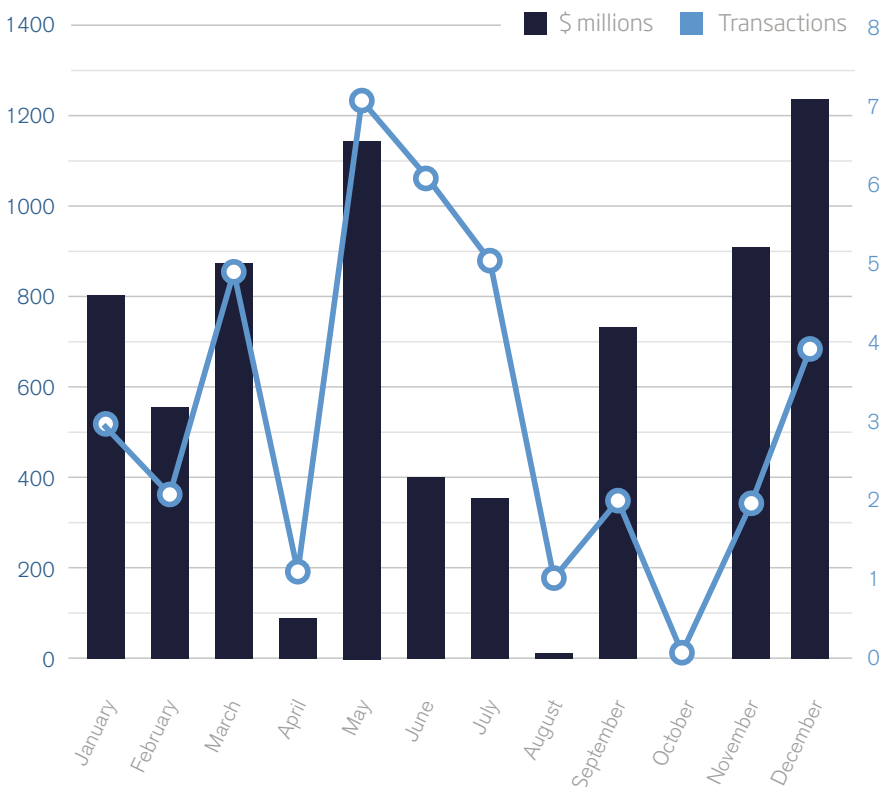
## Full-year 2016 ILS issuance per-occurrence vs aggregate split



## Full-year 2016 number of ILS transactions and volume issued by month (\$M)

For the third consecutive year market issuance was dominated by the first-half, both in terms of the number of deals and the size of transactions. For the third year running issuance in May was particularly strong and surpassed \$1 billion, however, December was the busiest month of the year in terms of risk capital issued, thanks to XL's upsized \$750 million Galilei Re Ltd. (Series 2016-1) deal, the largest cat bond seen all year.

During the month of October no deals came to market, however, strong investor appetite throughout the year saw overall issuance in 2016 total \$7.052 billion, which helped the outstanding catastrophe bond and ILS market reach its largest ever size, of \$26.82 billion.



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