



Q4 2015 Catastrophe Bond & ILS Market Report

Outright market growth continues

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INTRO

This report reviews the catastrophe bond and insurance-linked securities (ILS) market at the end of 2015, looking at new risk capital issued during the fourth-quarter, the composition of transactions completed and also a brief review of the full-year 2015.

Despite being one of the quietest fourth-quarters of the last decade, catastrophe bond and ILS issuance remained strong, totalling \$1.525 billion, according to the Artemis Deal Directory. Q4 is usually a fairly active period for cat bond and ILS transactions, and while no deals came to the market during November, more than \$1 billion of issuance during the final month of the year helped take full-year issuance for 2015 to \$7.841 billion.

The \$1.525 billion of risk capital issued during the quarter came from six deals, which, excluding 2008 when no deals came to market during Q4, is the joint lowest number of transactions witnessed during a Q4 over the last decade, as recorded by the Artemis Deal Directory.

The fourth-quarter of 2015 alone failed to break any records, but strong investor appetite and the solid level of issuance witnessed throughout the year continued. As a result the size of the outstanding catastrophe bond and ILS market at the end of 2015 reached an impressive \$25.903 billion, the highest level ever recorded in the Artemis Deal Directory.

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, freely available source of information, data and analysis on issued catastrophe bond and insurance-linked securitization transactions.

Transaction Recap

The fourth-quarter of 2015 saw a diverse range of perils brought to market, mostly from returning sponsors but one new catastrophe bond sponsor did enter the sector. A total of six deals came to market, featuring eight tranches of notes and amounting to \$1.525 billion of risk capital issued. For the first time this year no cat bond lites were issued during the quarter, which has been a growing force of the market in previous months.

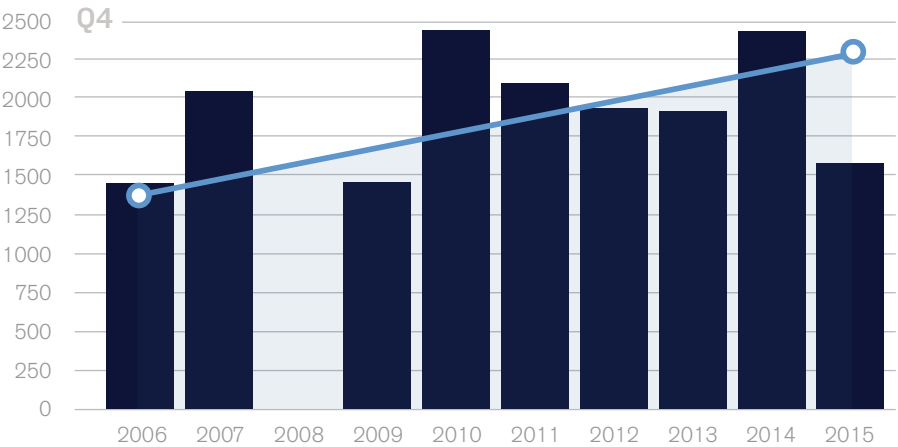
The only new cat bond and ILS sponsor witnessed during Q4 was Amtrak, with its \$275 million PennUnion Re transaction, which utilised the capital markets for insurance protection against U.S. storm surge, wind, and earthquakes. Everest Re returned with its latest offering from its Kilimanjaro Re platform, this was also the largest cat bond of the quarter, at \$625 million. USAA, one of the most prolific cat bond sponsors ever, returned to secure a further \$125 million of reinsurance protection against multiple U.S. perils.

Zenkyoren brought some Japanese earthquake risk to the cat bond market during the fourth-quarter, with its fourth issuance under its Nakama Re platform, sized at \$300 million. The other \$200 million of risk capital issued during the quarter came from returning sponsors Swiss Re and Munich Re, via their Vita Capital and Queen Street issuance platforms, respectively. Swiss Re provided investors with \$100 million of extreme mortality risks, while Munich Re added some U.S. hurricane and Australian cyclone diversification to Q4 2015 issuance.

ISSUER / TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Nakama Re Ltd. (Series 2015-1)	Zenkyoren	Japan earthquake	300	Dec
Vita Capital VI Limited (Series 2015-1)	Swiss Re	Extreme mortality	100	Dec
Queen Street XI Re dac	Munich Re	U.S. hurricane, Australia cyclone	100	Dec
Residential Reinsurance 2015 Ltd. (Series 2015-2)	USAA	U.S. multi-peril	125	Dec
Kilimanjaro Re Ltd. (Series 2015-1)	Everest Re	U.S., Canada, Puerto Rico, D.C. named storm and earthquake	625	Dec
PennUnion Re Ltd. (Series 2015-1)	Amtrak	U.S. named storm wind & surge, U.S. earthquake	275	Oct

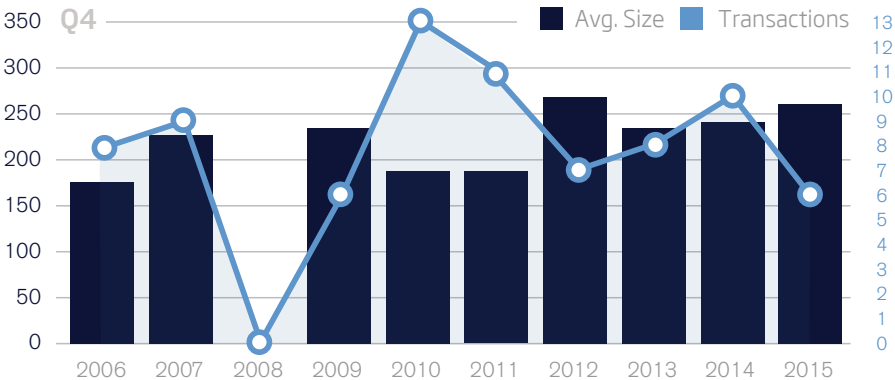
Q4 ILS issuance by year (\$M)

The fourth-quarter of 2015 saw \$1.525 billion of catastrophe bond and ILS risk capital issued, falling below the ten-year average of \$1.7 billion. Data from the Artemis Deal Directory shows that Q4 2015 was actually the quietest final quarter since 2009.



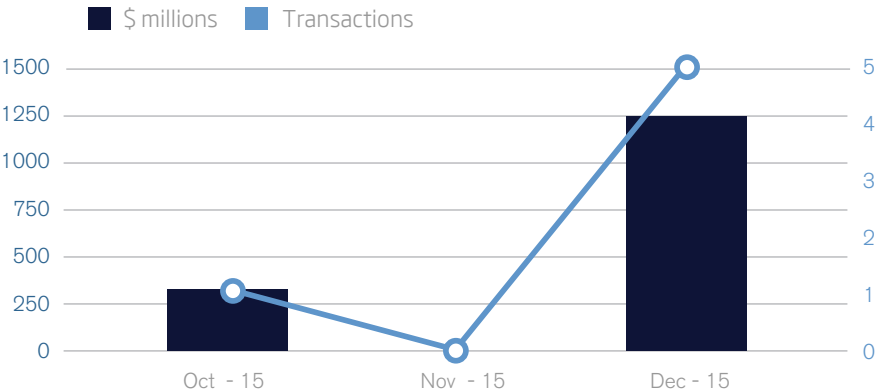
ILS average transaction size & number of transactions by year (\$M)

The average transaction size recorded in the Artemis Deal Directory in Q4 2015 was \$254 million, which is \$52 million higher than the ten-year average. Despite the number of transactions issued during the quarter being the joint lowest of the last decade, at six, the average transaction size recorded in Q4 is actually the second highest of the last ten-years.



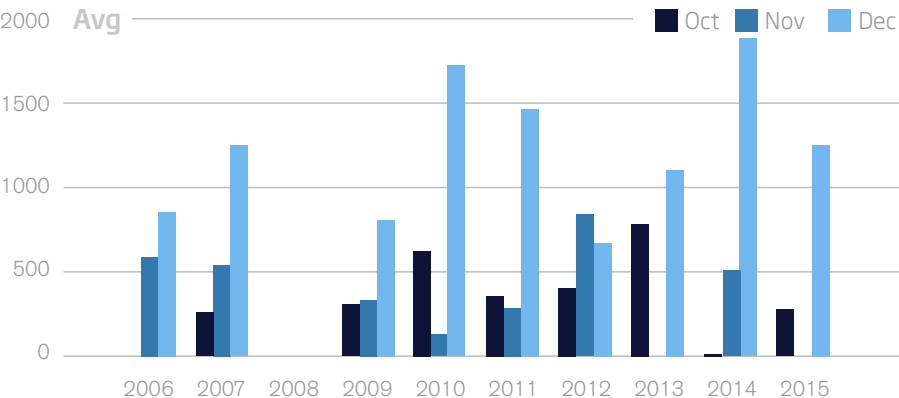
Number of transactions and volume issued by month (\$M)

Cat bond and ILS issuance started very slowly during the fourth-quarter of the year, with Amtrak's \$275 million deal being the only transaction prior to December. However, returning sponsors, including Everest Re's largest Kilimanjaro Re issuance to date, at \$625 million, helped issuance again exceed \$1 billion during Q4.



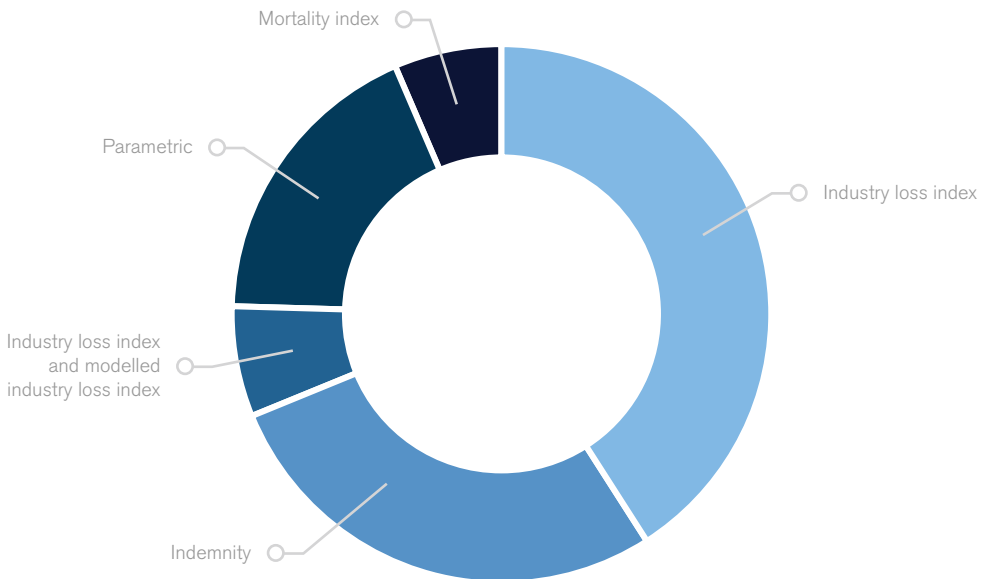
Q4 issuance by month & year

Examining Q4 cat bond and ILS issuance by month reveals that, as is typical during the period, December saw the highest volume of issuance. In fact, after March and May, December was the third month of the year to see issuance surpass the \$1 billion mark. Issuance in October was limited during 2015, and for the third time in the last decade, no deals came to market during the month of November.



Q4 2015 ILS issuance by trigger type

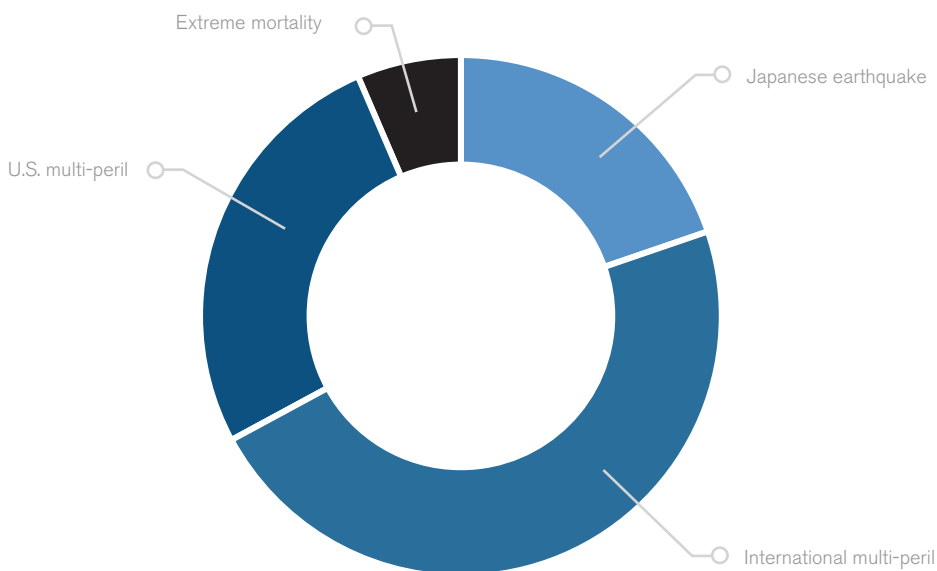
The fourth-quarter of 2015 saw a diversified range of ILS trigger structures utilised by sponsors. For the first time this year, indemnity triggers failed to dominate issuance during the quarter, with only 28%, or \$425 million of risk capital issued structured on an indemnity basis.



Just under half of issuance during the fourth-quarter utilised an industry loss index trigger, with the majority coming from the \$625 million Kilimanjaro Re transaction from Everest Re, while Munich Re's Queen Street brought some modelled industry loss to market as well. First time sponsor Amtrak brought \$275 million of parametric structured trigger to the market via its PennUnion Re deal. Swiss Re's latest Vita Capital cat bond provided some mortality index trigger diversification, while Zenkyoren and USAA provided the \$425 million of indemnity protection.

Q4 2015 ILS issuance by peril

Looking at Q4 2015 cat bond and ILS issuance by peril shows that international multi-peril coverage, which includes the U.S., Australia, Canada, and Puerto Rico, dominated issuance. Continuing the trend witnessed in Q3 2015 and in line with Q4 last year, there were no pure U.S. wind or hurricane transactions in the quarter.

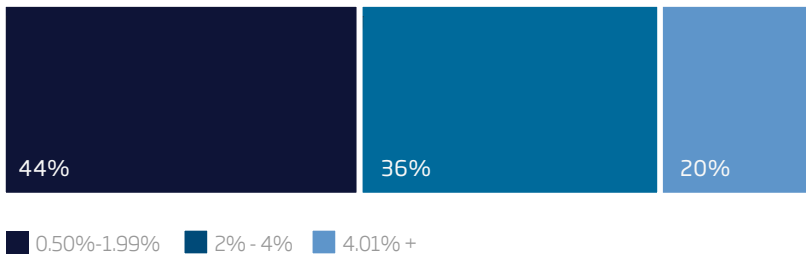


Cat bonds issued in the quarter did provide some protection against U.S. wind risks, although these deals also contained other perils. Similarly, transactions that covered U.S. earthquake exposures during the quarter also sat alongside other perils. Zenkyoren returned to the market with its latest Nakama Re issuance, providing \$300 million of protection against Japanese earthquake risks.

While Swiss Re's latest Vita Capital transaction provided investors with some welcomed diversification during the fourth-quarter of 2015, with \$100 million of protection against extreme mortality exposures.

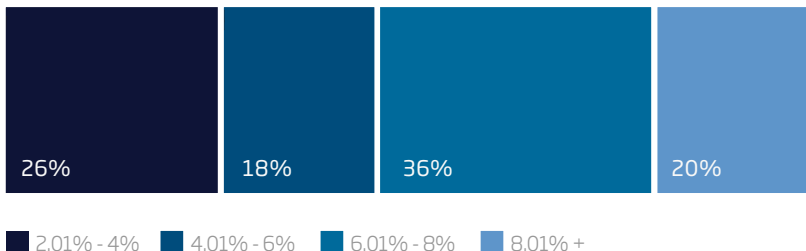
Q4 2015 ILS issuance by expected loss

The majority of catastrophe bonds issued during the final quarter of the year had an expected loss of above 2%, signalling that perhaps investors are willing to take on slightly more risk than this time last year, when more than half of issuance had an EL of less than 0.49%. It also reflects investor demand for higher returns, which require higher expected losses to be assumed. The riskiest issue of the quarter was the Class D tranche of Kilimanjaro Re notes from Everest Re, the only tranche that had an expected loss of above 4%. The two lowest risk notes came from Swiss Re with Vita Capital, and the Class 2 tranche of Nakama Re notes, which both had an expected loss below 1%.



Q4 2015 ILS issuance by coupon pricing

With expected losses of issued cat bonds during Q4 being higher than a year earlier, it's no surprise that the yields on offer followed a similar trend. The majority of coupons, 56%, on offer during the fourth-quarter would pay investors more than 6.01%, compared to just 29% in the previous year. Roughly a quarter of issuance during the fourth-quarter of 2015 paid investors a coupon of between 2.01% to 4%, compared to more than half, 52%, during the same period last year.

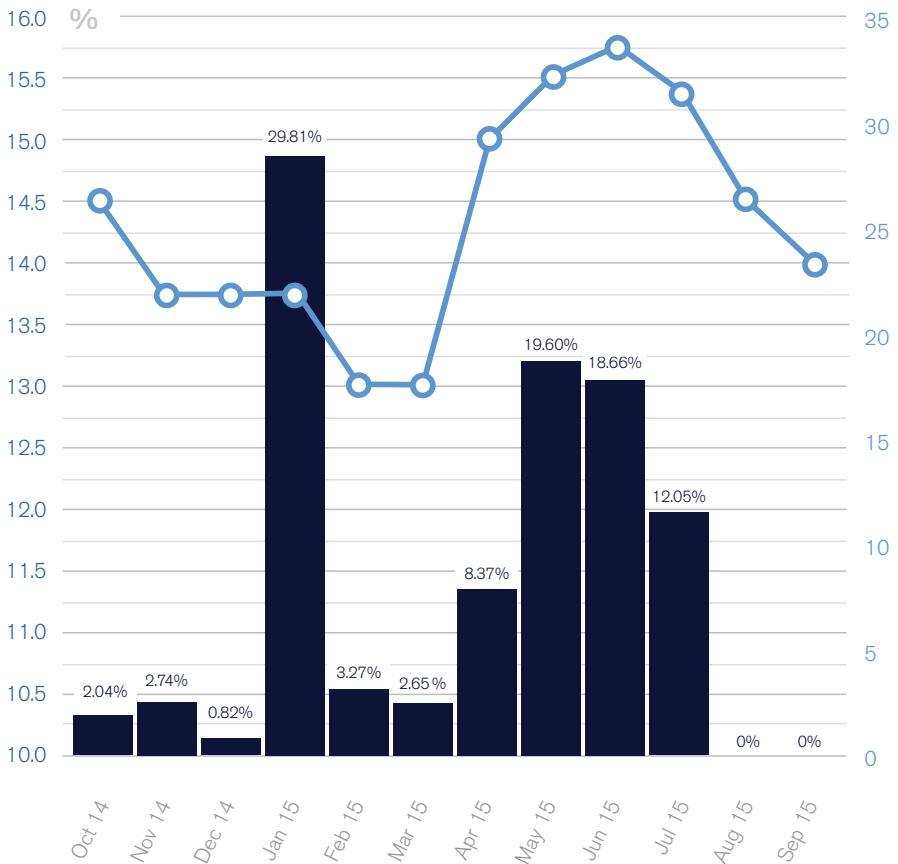




US Natural Perils \$40B (LHS) plotted against Guy Carpenter ILW portfolio Oct 14 - Sep 15 (RHS)

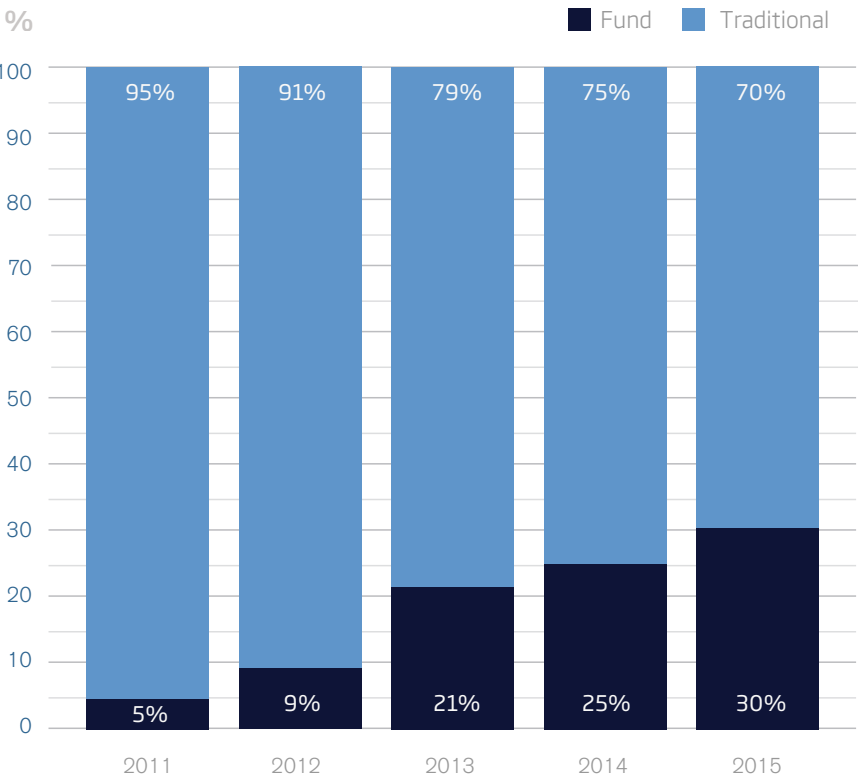
Guy Carpenter estimates the outstanding notional value of the ILW market at US\$4.25bn. During the middle of 2015 there was an unprecedented surge in demand for Florida and US wind exposed capacity, which resulted in a hardening of pricing by up to 20% and the exhaustion of supply from the usual sources of capacity. Demand and pricing for other worldwide perils remained stable during the year.

The graph below shows the seasonality of ILW's purchased during 2015 and the uplift in pricing for US All Natural Perils coverage attaching at an industry loss level of US\$40bn.



Guy Carpenter ILW Portfolio

Another interesting dynamic of the ILW market during 2015 was the increasing activity amongst the ILS fund management community using the ILW product to hedge their peak peril catastrophe exposure. Guy Carpenter and its securities affiliate GC Securities have been able to support this demand from ILS fund managers in both traditional reinsurance and ISDA Swap form.

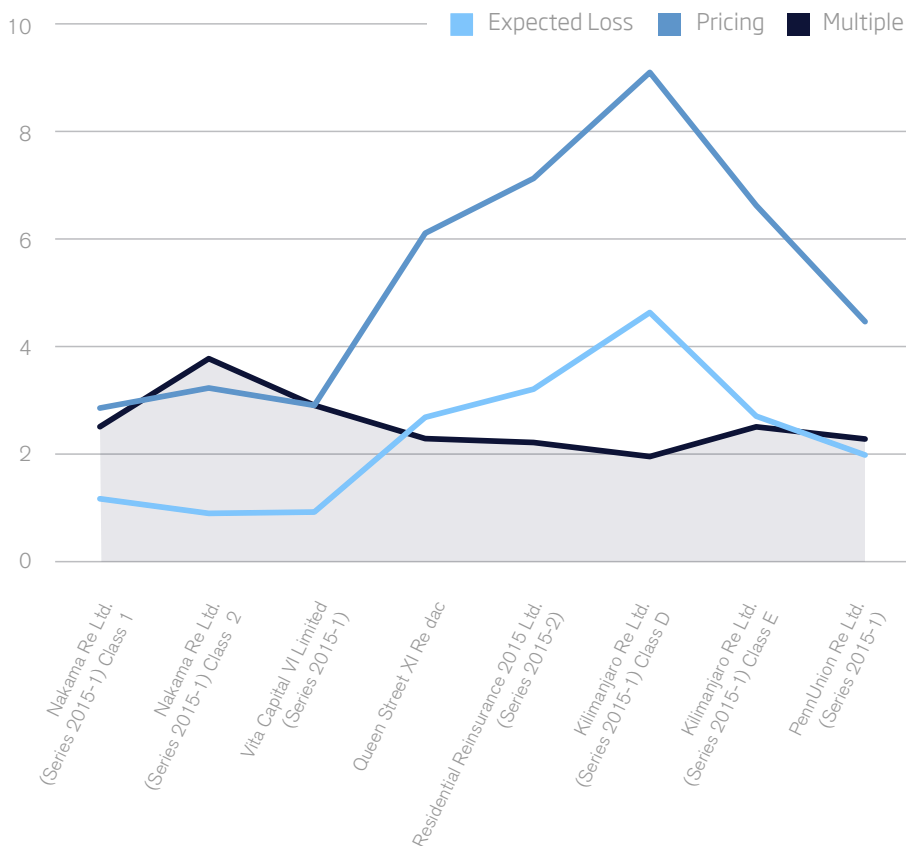


GC Securities, is a division of MMC Securities Corp., member FINRA/NFA/SIPC, main office: 1166 Avenue of the Americas, New York, NY 10036, phone: 212.345.5000. MMC Securities Corp. and Guy Carpenter & Company, LLC are affiliates and wholly owned by Marsh & McLennan Companies.

Pricing multiples of Q4 2015 issuance

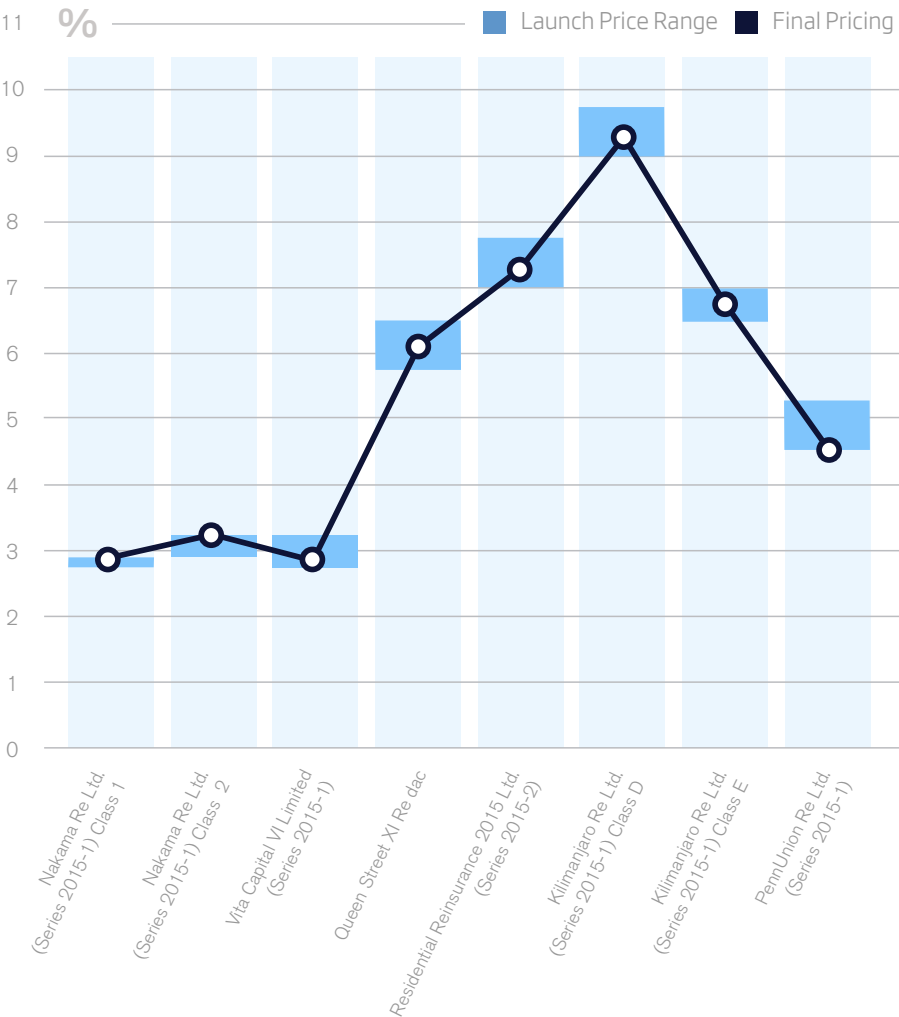
The average multiple (price coupon divided by expected loss) of Q4 2015's cat bond and ILS issuance was 2.34 on an annualised basis. This is lower than the average multiple for the full-year (2.46), based on all deals we have data for, and below the average multiple witnessed during the fourth-quarter of last year.

The average multiple moderately decreased throughout 2015, signalling that in a competitive and challenging market, perhaps investors are willing to take on more risk at a lower return. However, ILS investor discipline was evident during Q4, as half the deals during the quarter priced at, or above the mid-point of initial price guidance, with the other half falling only slightly below, suggesting investors would only be pushed so far on pricing.



Cat bond and ILS price changes during Q4 2015 issuance

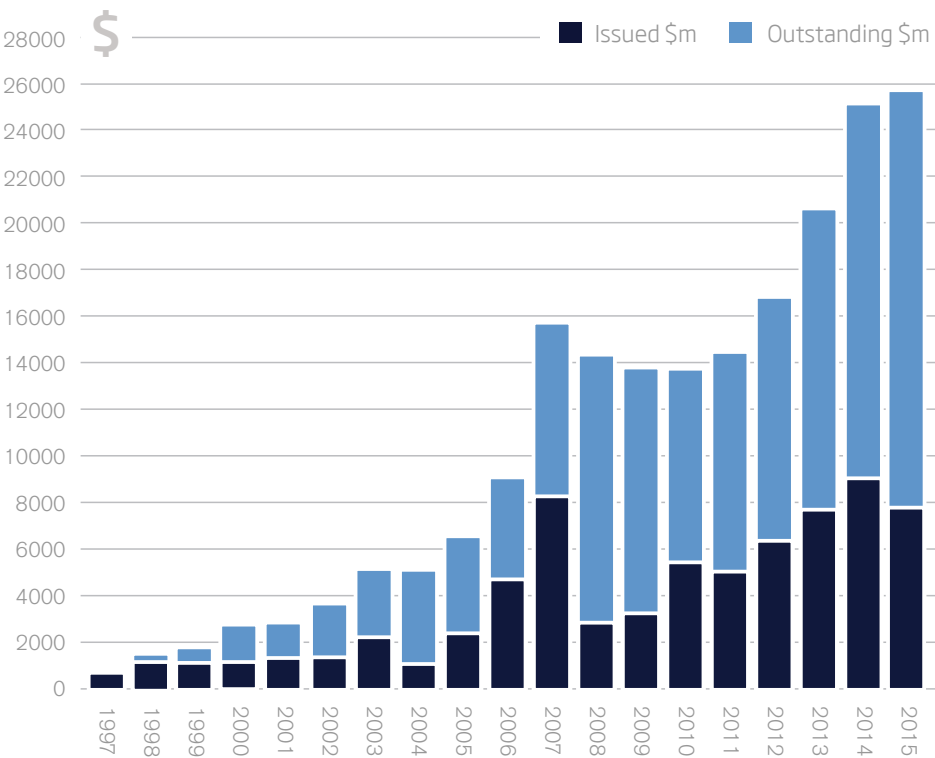
Four out of the eight tranches of cat bond and ILS notes issued during the fourth-quarter priced at, or above the mid-point of initial coupon guidance, further evidence of some price stabilisation in the market. The most dramatic price increase from initial price guidance was seen with the Class 2 tranche of Nakama Re notes, which experienced a price increase of 6.12% while marketing. On the other side of the spectrum, PennUnion Re experienced a significant price change of -7.69% while marketing. The average price change during Q4 2015 was -0.66%, so roughly stable.



Issued / Outstanding

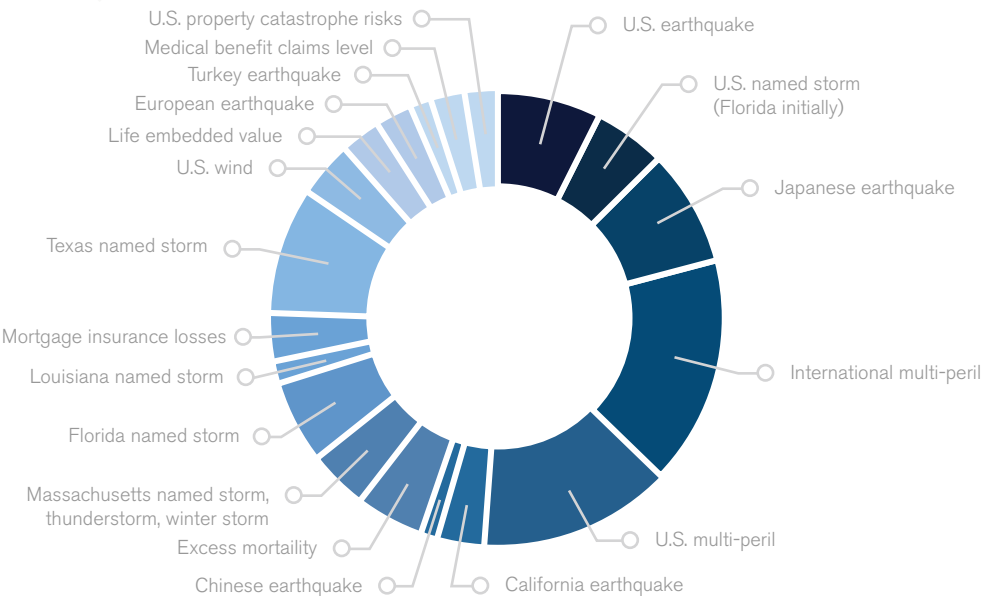
During 2015 the outstanding catastrophe bond and ILS market recorded outright growth of roughly \$624 million, ending the year at \$25.903 billion, the highest level ever recorded. A continuation of the solid issuance trend witnessed throughout the last two years remained during Q4, and the \$1.525 billion of transactions issued helped take full-year 2015 issuance to \$7.841 billion, the third highest ever recorded for a single year.

Despite the fourth-quarter of 2015 being the quietest of the year in terms of number of deals issued, in part due to a lack of privately placed deals when compared to recent quarters, strong issuance from repeat sponsors during December ensured the overall market size grew, and stayed beyond the \$25 billion mark first breached a year ago, in Q4 2014.

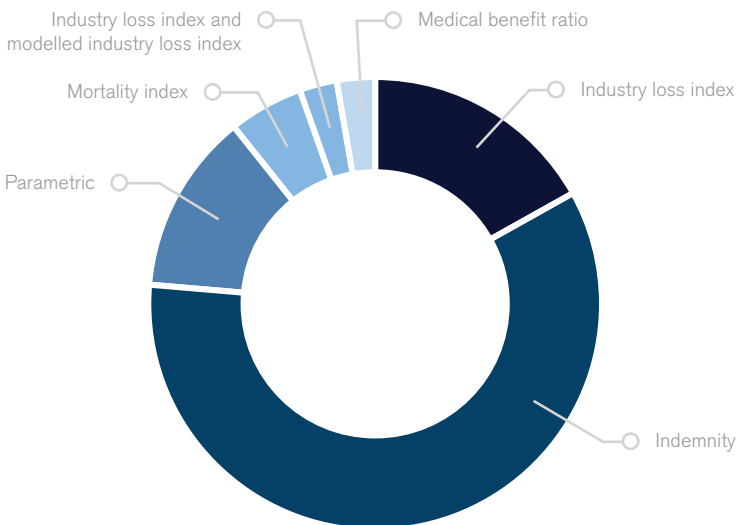


If you want to see full details of every catastrophe bond and ILS transaction included in the data in this report please visit www.artemis.bm/deal_directory/

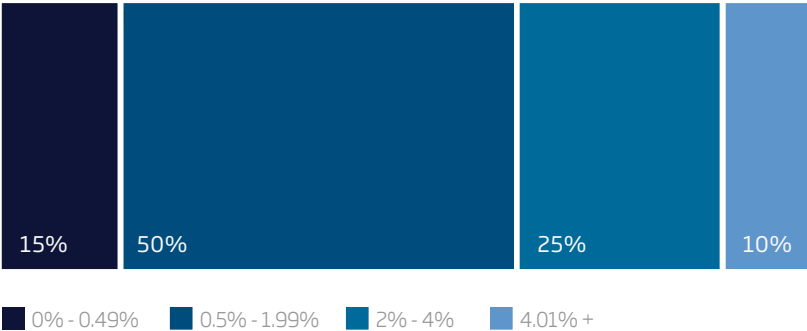
Full-year 2015 ILS issuance by peril



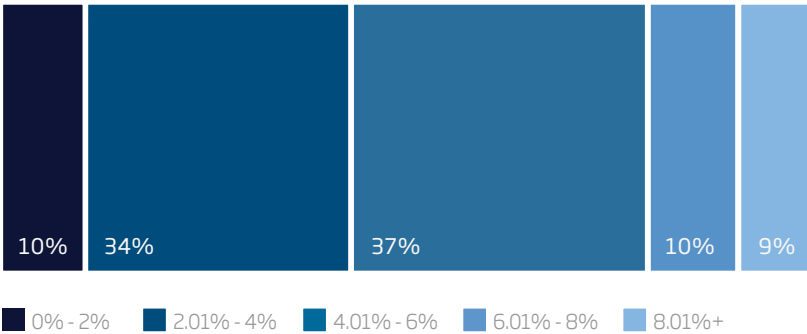
Full-year 2015 ILS issuance by trigger



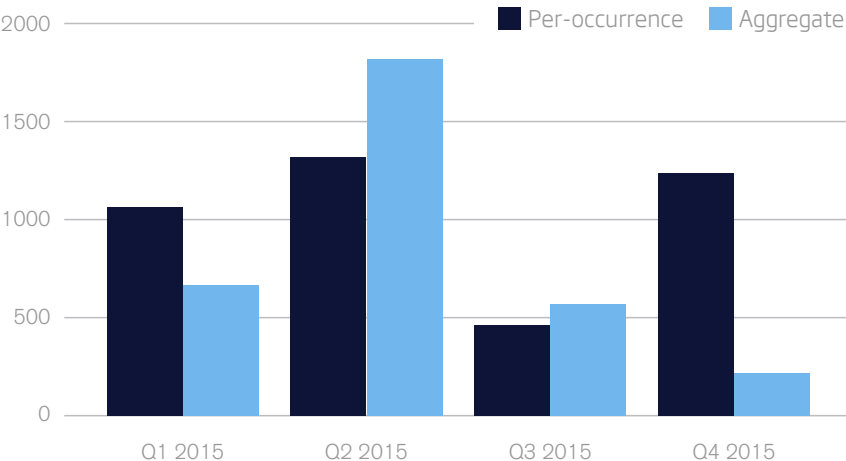
Full-year 2015 ILS issuance by expected loss



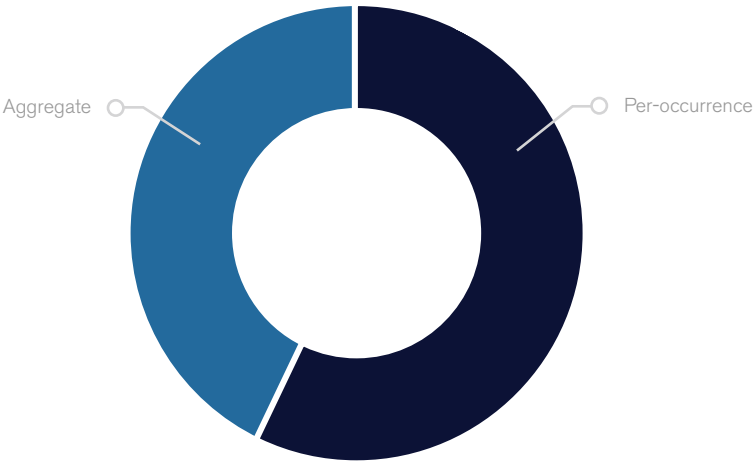
Full-year 2015 ILS issuance by coupon pricing



2015 ILS issuance per-occurrence vs aggregate split by quarter



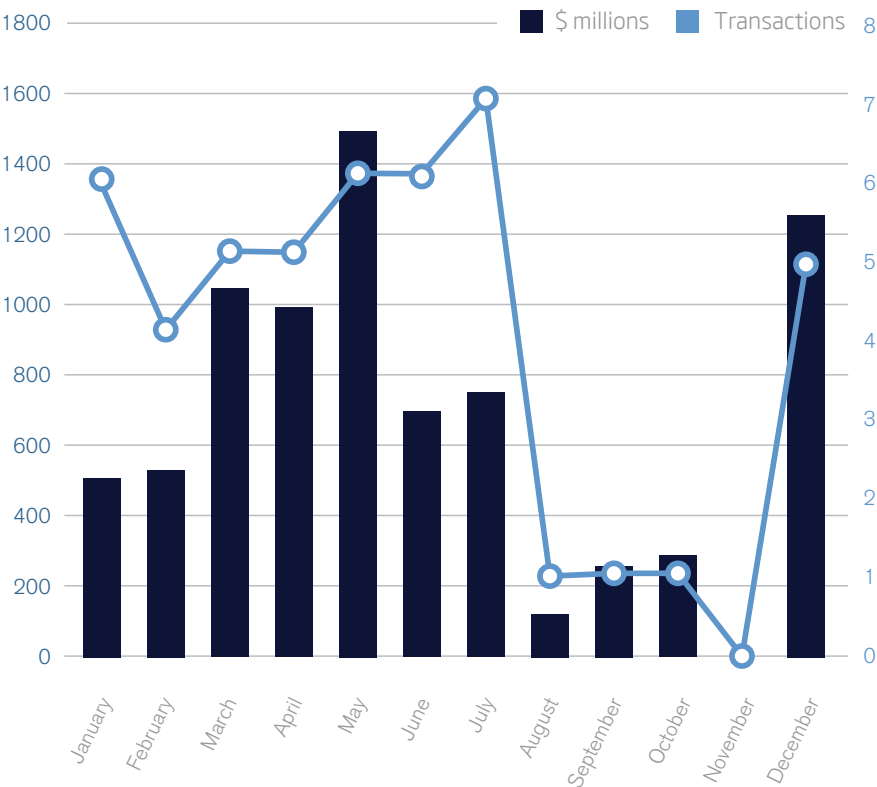
Full-year 2015 ILS issuance per-occurrence vs aggregate split



Full-year 2015 number of ILS transactions and volume issued by month (\$M)

Catastrophe bond and ILS issuance in 2015 was dominated by the first-half of the year, which saw more than \$5.2 billion, or 66.6% of the total risk capital issued. As in 2014, the month of May saw the highest level of issuance during the year, at \$1.47 billion, with March and December being the only other months to see more than \$1 billion worth of transactions come to market.

As the challenging reinsurance market landscape is expected to continue into 2016, alongside the implementation of Europe’s Solvency II regulation, it will be interesting to see just how influential the ILS market will be in the coming months, and whether the sector can continue down its impressive growth path.





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