



Q4 2019 Catastrophe Bond & ILS Market Report

Catastrophe risk rebounds
in a record fourth-quarter

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INTRO

The Artemis Q4 2019 catastrophe bond and related insurance-linked securities (ILS) report examines and reviews the market at the end of the fourth-quarter of 2019, exploring new risk capital issued and the composition of transactions completed during the quarter.

In the fourth-quarter of 2019, catastrophe bond and ILS issuance reached a huge \$3.3 billion, which is \$1.1 billion above the ten-year average for the quarter, as shown by the Artemis Deal Directory.

Since 2015, only once has issuance in the final quarter of the year surpassed the \$2 billion mark, so the fact it's exceeded \$3 billion is really quite impressive. Combined with the previous three quarters of the year, Q4 issuance took the total outstanding market size to a new end-of-year high, of \$41 billion.

Mortgage insurance risk was again a strong feature in Q4, accounting for more than \$880 million of issuance. However, catastrophe risk-focused deals rebounded in the quarter to reach \$2.4 billion, the largest quarter for cat risk since Q2 2018.

The \$3.3 billion of total new risk capital issued in the quarter came from 15 transactions consisting of 28 tranches of notes, as shown by 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 source of information, data and analysis on issued catastrophe bond and insurance-linked securitization transactions.

Transaction Recap

International multi-peril deals accounted for the largest slice of Q4 issuance, at \$1.33 billion, or 40% of total issuance. \$850 million of this came from Everest Re through its Kilimanjaro Re platform, while the remainder came from XL Bermuda's Galileo Re platform. Combined, the two transactions offered protection against a range of perils in diverse regions.

Somewhat unsurprisingly given the recent expansion of mortgage risk in the space, two mortgage ILS deals came to market in Q4, accounting for approximately 27% of issuance. One deal was from repeat sponsor Arch Capital Group, while Genworth Mortgage Insurance accessed the capital markets for the first time in Q4 2019 for over \$300 million of mortgage reinsurance.

Another new sponsor in Q4 2019 was the Republic of the Philippines via the World Bank, which sponsored a \$75 million tranche of Philippine earthquake notes and a \$150 million tranche of Philippine tropical cyclone notes. Covea Group returned for its second deal under its Hexagon Reinsurance DAC platform, securing \$133 million of protection against multiple perils in France.

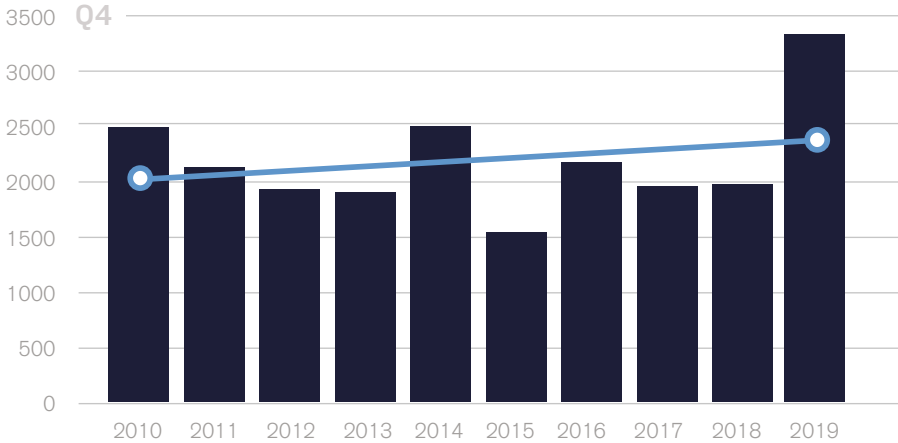
The California earthquake Authority returned with \$400 million of protection against California earthquake risks, while USAA sponsored \$160 million of U.S. multi-peril risks in the period.

Seven private deals featured in Q4, bringing a combined \$157 million of U.S. & unknown property catastrophe risks and \$10 million of California earthquake risk to market.

ISSUER / TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Artex SAC Limited – Series IX Notes	Unknown	Unknown property cat risks	50.255	Dec
Seaside Re (Series 2020-2)	Unknown	U.S. property cat risks	20	Dec
Seaside Re (Series 2020-1)	Unknown	U.S. property cat risks	7	Dec
Seaside Re (Series 2020-51)	Unknown	U.S. property cat risks	50	Dec
LI Re (Series 2019-1)	Unknown	California earthquake	10	Dec
Kilimanjaro III Re Ltd. (Series 2019-1/2019-2)	Everest Re	International multi-peril	850	Dec
Galileo Re Ltd. (Series 2019-1)	XL Bermuda Ltd.	International multi-peril	475	Dec
Ursa Re Ltd. (Series 2019-1)	California Earthquake Authority	California earthquake	400	Nov
Triangle Re 2019-1 Ltd.	Genworth Mortgage Insurance	Mortgage insurance risks	302.791	Nov
IBRD CAR123 / 124	Republic of the Philippines	Philippine multi-peril	225	Nov
Residential Reinsurance 2019 Limited (Series 2019-2)	USAA	U.S. multi-peril	160	Nov
Hexagon II Reinsurance DAC (Series 2019-1)	Covéa Group	France multi-peril	132.93	Nov
Eclipse Re Ltd. (Series 2019-07A)	Unknown	Unknown property cat risks	20	Oct
Bellemeade Re 2019-4 Ltd.	Arch Capital Group Ltd.	Mortgage insurance risks	577.28	Oct
ILN SAC Ltd. Series 2019-1	Unknown	Unknown property cat risks	10	Oct

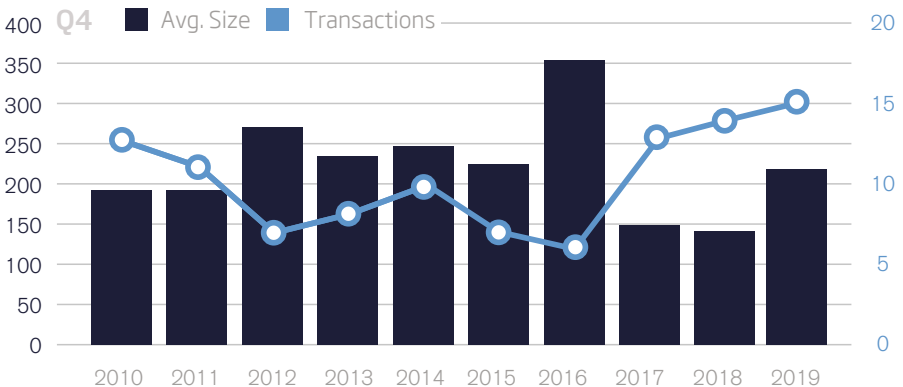
Q4 ILS issuance by year (\$M)

Catastrophe bond and ILS issuance in the fourth-quarter of 2019 is the highest ever recorded in the period, at an impressive \$3.3 billion. This is \$1.1 billion above the ten-year average for the quarter and \$1.4 billion above the level seen in the fourth-quarter of last year, as shown by the Artemis Deal Directory.



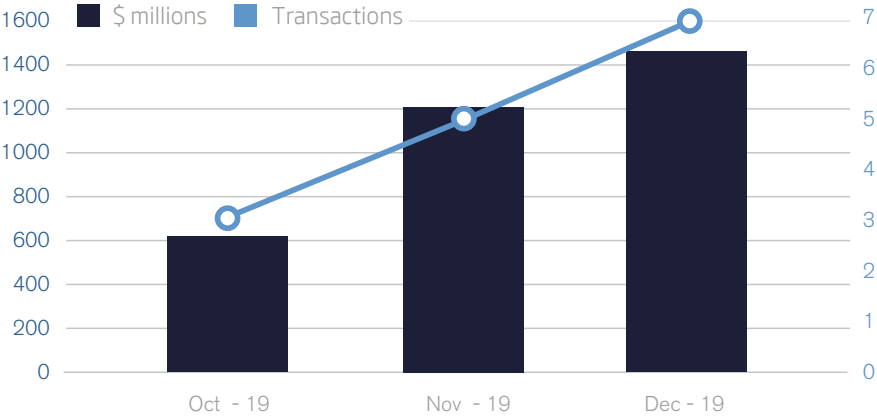
ILS average transaction size & number of transactions by year (\$M)

At roughly \$219 million, the average transaction size of fourth-quarter issuance is slightly below the ten-year average for the quarter. In terms of the number of transactions brought to market, the 15 issued in Q4 2019 is above the ten-year average of 10 and higher than the 14 witnessed a year earlier.



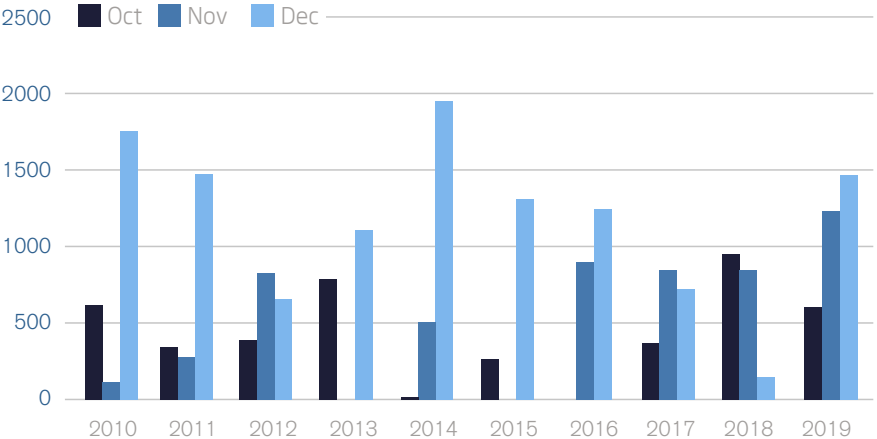
Number of transactions and volume issued by month (\$M)

In line with the average witnessed over the last decade, December issuance was the strongest of the fourth-quarter, at \$1.5 billion. At \$1.2 billion, issuance in November was more than double the ten-year average for the month, and is roughly \$377 million higher than last year. October issuance fell by more than \$342 million year-on-year, but at \$607 million is still above the ten-year average for the month by over \$172 million.



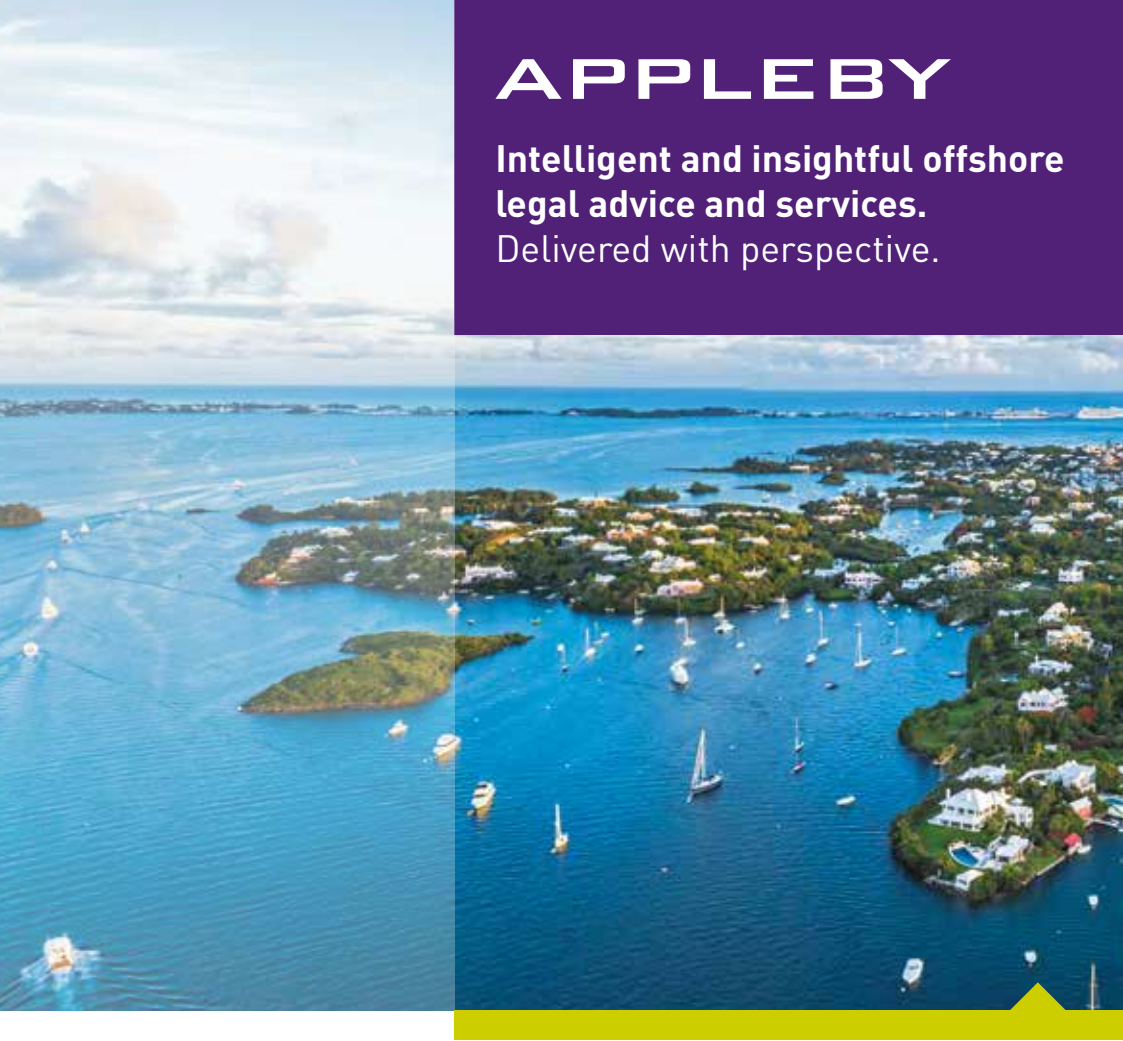
Q4 issuance by month & year (\$M)

The huge level of issuance witnessed in December came from seven transactions, while November's tally came from five separate deals. In the month of October, the Artemis Deal Directory shows that three deals came to market.



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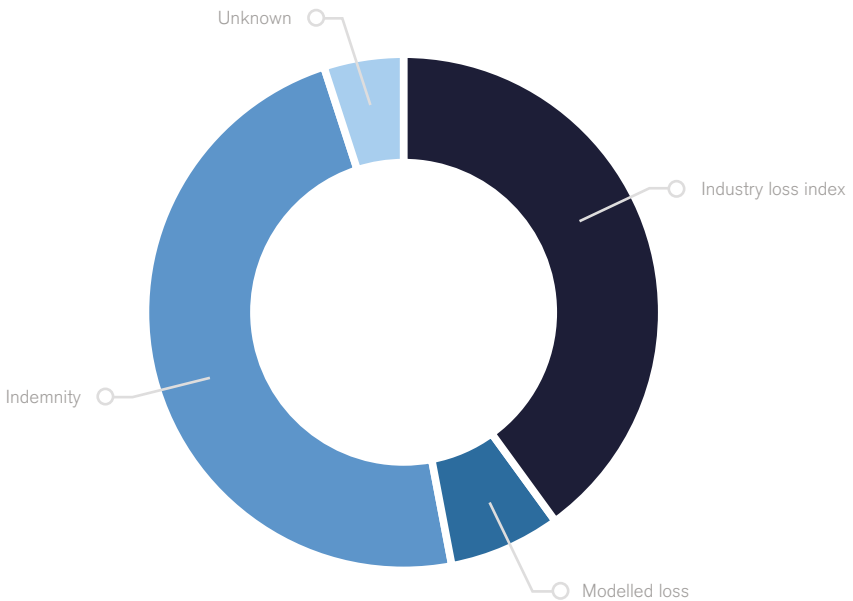
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Q4 2019 ILS issuance by trigger type

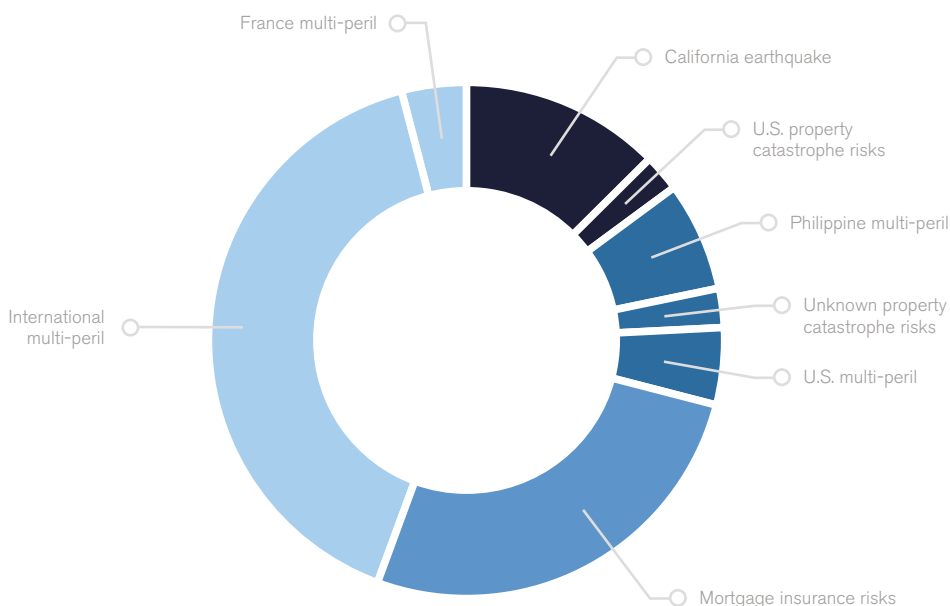
48%, or more than \$1.57 billion of issuance utilised an indemnity trigger structure in the fourth-quarter of 2019. This is quite a change from last year, when trigger diversification was lacking and indemnity deals accounted for 88% of quarterly issuance. Industry loss triggers also featured in Q4 2019, accounting for roughly 41% of issuance.



Roughly 7%, or \$225 million of issuance in the fourth-quarter utilised a modelled loss trigger, while we do not have trigger information for approximately 5%, or \$157 million of issuance.

Q4 2019 ILS issuance by peril

The rebound of cat risk in the quarter was helped by an \$850 million deal from Everest Re, providing protection against multiple international perils, including U.S. and Canada named storm and quake risks, among others. XL Bermuda's \$475 million deal also covered multiple international perils, such as Australia, Canada and U.S. quake, European windstorm and Australian tropical cyclone risk, alongside additional named storm and severe thunderstorm risks.

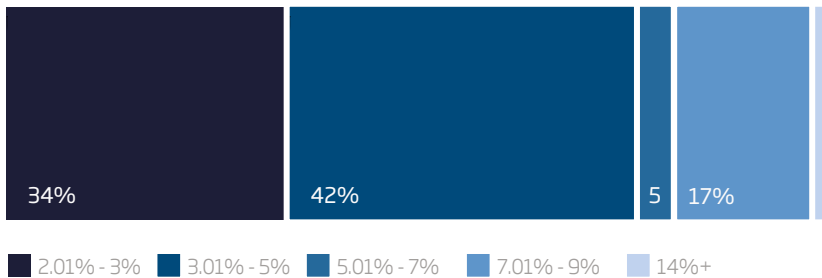


Issued by the World Bank on behalf of the Republic of the Philippines, a \$75 million tranche of notes exposed to Philippine quake risks and a \$150 million tranche of notes exposed to Philippine tropical cyclone risks, were two new perils of the quarter. Covea Group also brought some diversification to market, with around \$133 million of protection against multiple France perils.

USAA issued its 34th cat bond in Q4, a \$160 million U.S. multi-peril deal, while the CEA brought \$400 million California quake risks to market. The seven private deals issued provided investors with a combined \$157 million of U.S. & unknown property cat risks, and \$10 million of California quake risk.

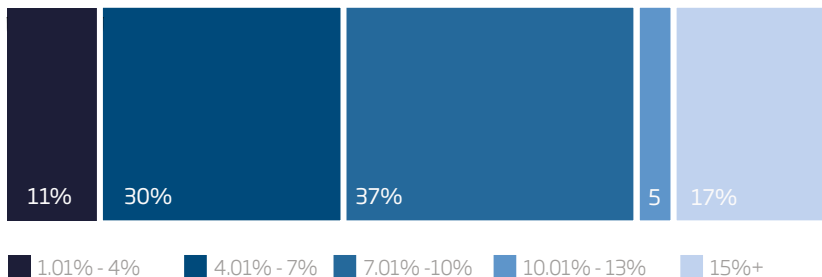
Q4 2019 ILS issuance by expected loss

For the \$2.24 billion of new risk capital issued that we have expected loss data for, \$1.7 billion, or 76% had an expected loss of between 2.01% and 5%, with the majority of this having an expected loss of 3.01% and 5%. \$485 million of issuance had an expected loss of between 5.01% and 9%. More than 2% of Q4 issuance had an expected loss of above 14%, which came from the Class 1 tranche of ResRe notes. The lowest expected loss on offer in Q4 came from the Ursa Re notes, at 2.11%.



Q4 2019 ILS issuance by coupon pricing

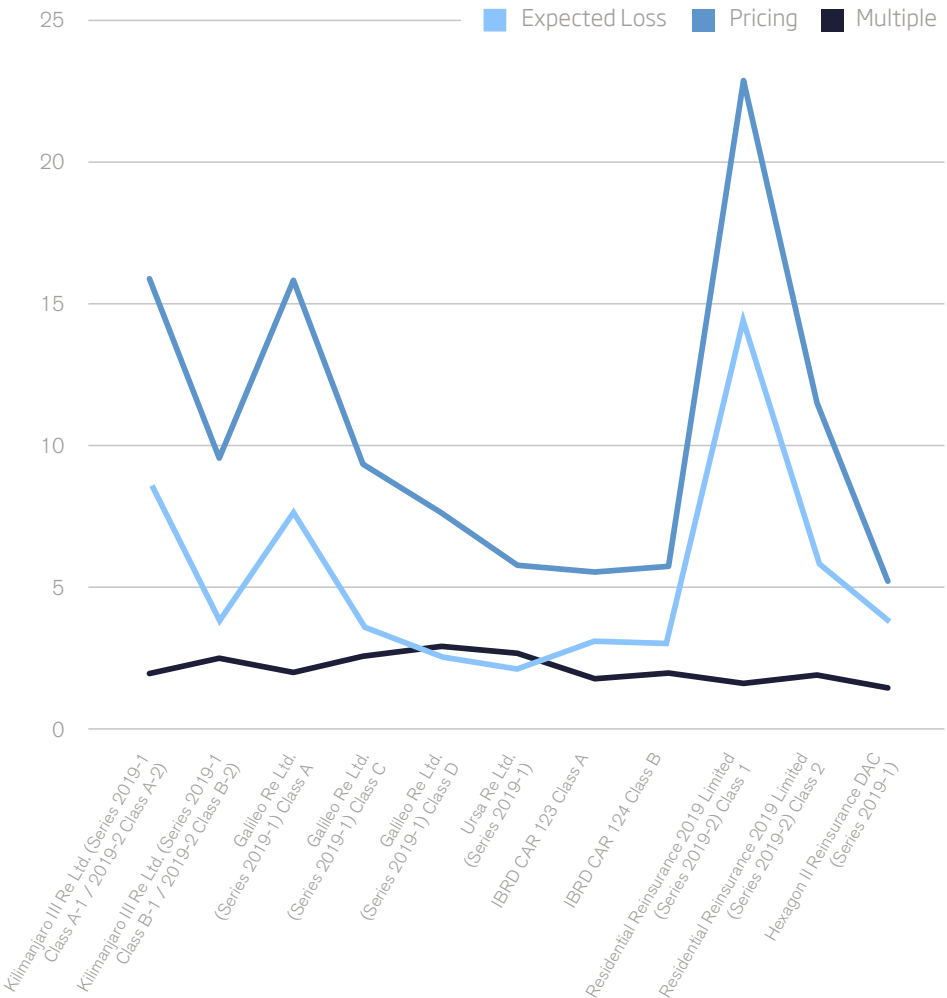
The majority, or \$1.45 billion of the \$2.55 billion of risk capital issued where we have pricing data, offered investors a coupon above 7.01% in Q4 2019. 42% of quarterly issuance offered a coupon of between 1.01% and 7%, with the majority, or \$775 million of this offering a coupon of between 4.01% and 7%. Four tranches of notes offered investors a coupon of above 15% in Q4, including the Class 1 tranche of ResRe notes, which had a coupon of 22.75%. The lowest coupon on offer in Q4, at 1.9%, came from a tranche of mortgage ILS notes.



Pricing multiples of Q4 2019 issuance

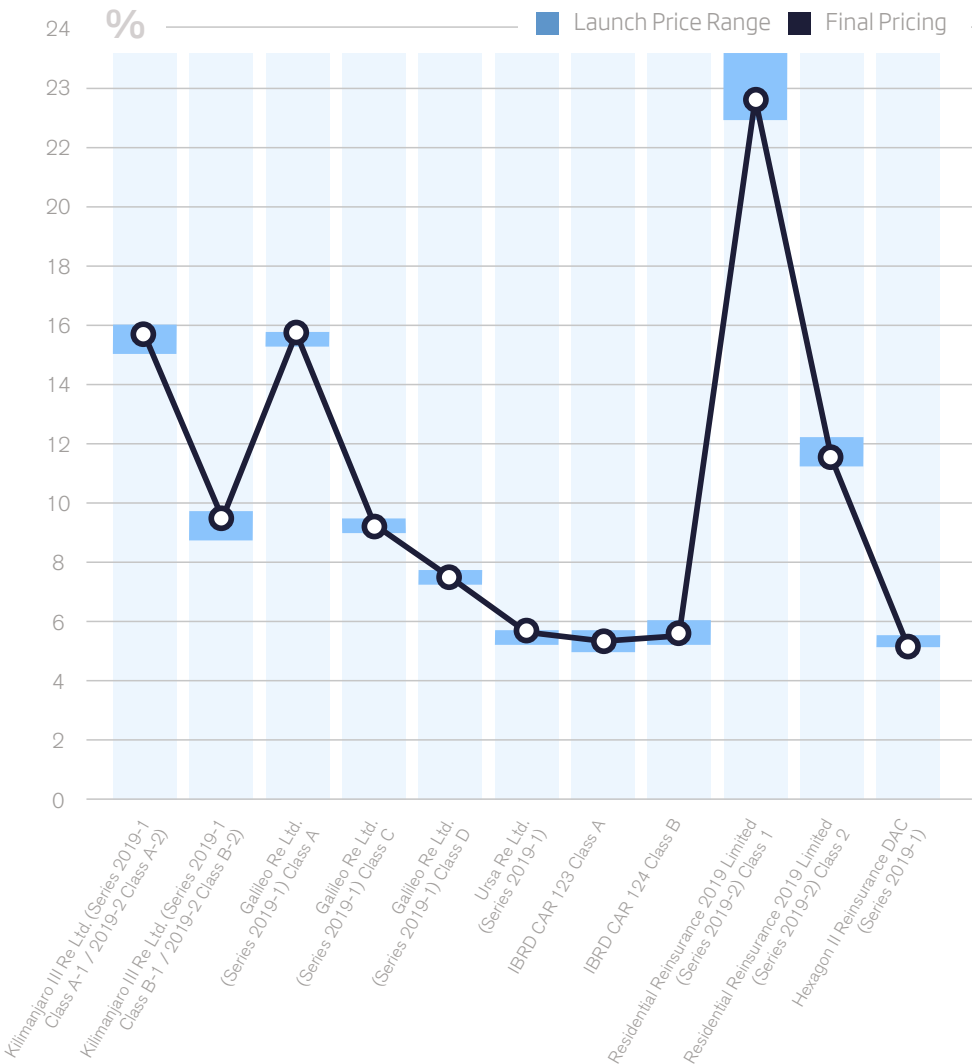
Where we have both the expected loss and pricing data, the average multiple (price coupon divided by expected loss) during the fourth-quarter of 2019 was 1.97. As shown by Artemis' data, the average multiple improved in the first half of 2019 after falling to 1.82 at the end of 2018.

While the average multiple dropped below 2 in the fourth-quarter of 2019, it remains above the level seen in the fourth-quarter of last year.



Cat bond and ILS price changes during Q4 2019 issuance

For the \$2.24 billion of new risk issued that we have full pricing data for, the average price change during the quarter was 0.67%. Just three tranches of notes issued in Q4 2019 priced below the mid-point of initial price guidance, with the steepest price decline being seen with the Hexagon II Re notes, which fell by 4.62% while marketing. Six tranches of notes priced above the mid-point of initial price guidance, while one tranche of notes priced at the mid-point. The largest price increase came from the Ursa Re notes, which increased by 4.54% while marketing.



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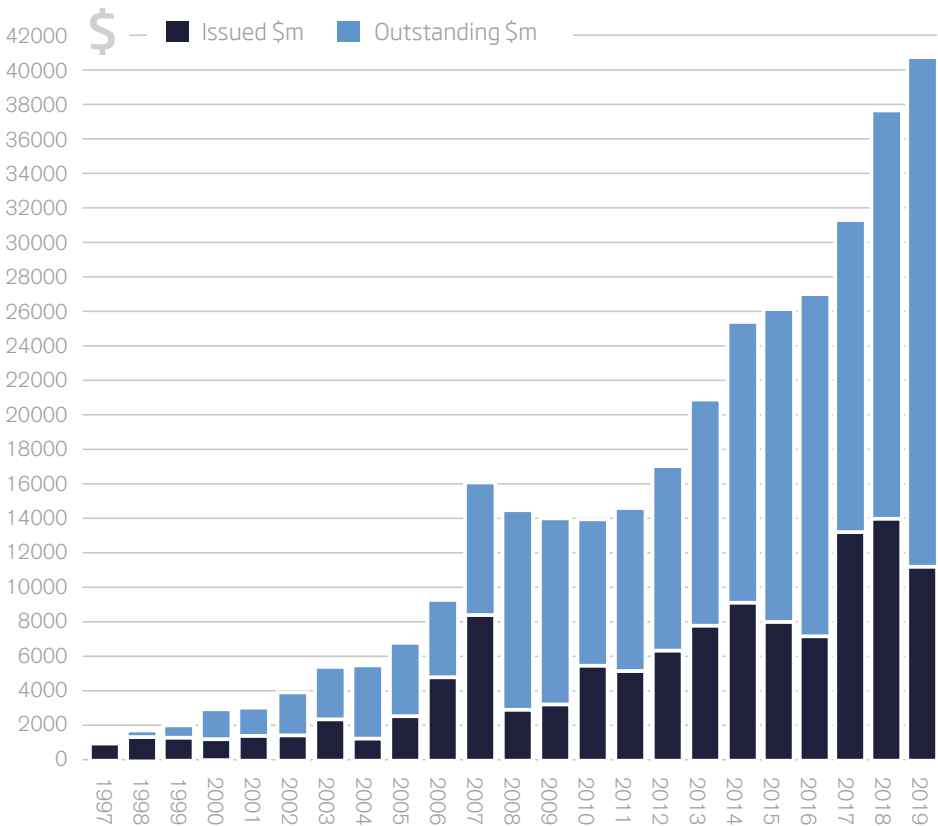
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Issued / Outstanding

As shown by the Artemis Deal Directory, the outstanding catastrophe bond and ILS market at the end of 2019 reached a new high, of \$41 billion. Despite falling over \$2.7 billion year-on-year, issuance levels remained above the \$10 billion mark for the third consecutive year.

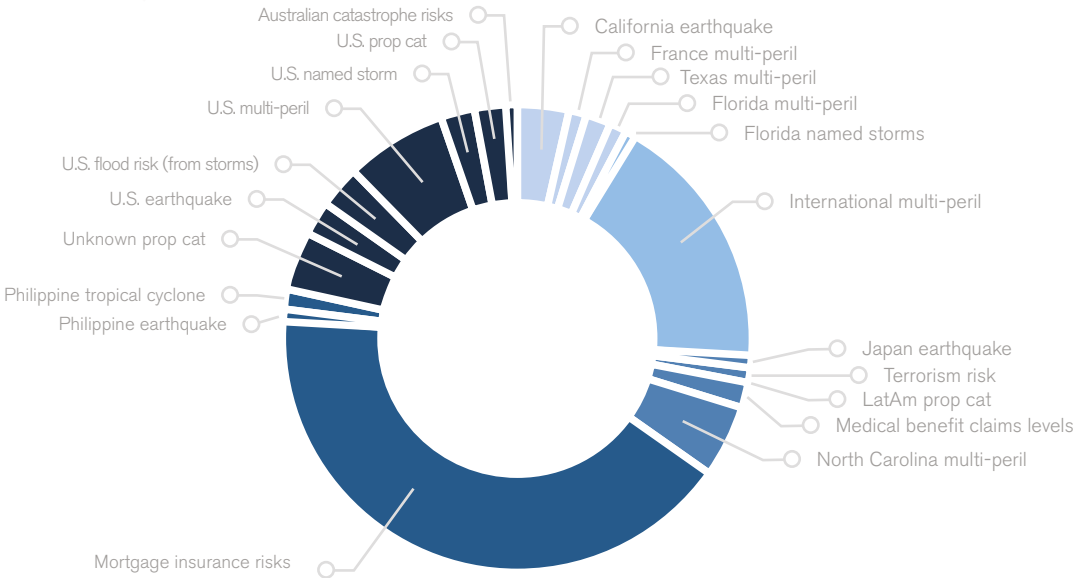
At \$11.1 billion, catastrophe bond and ILS issuance in 2019 was the third highest ever recorded, according to Artemis' data. However, it's worth noting that as in both 2017 and 2018, this was helped significantly by mortgage ILS deals, which in 2019, accounted for 41% of total issuance.

Undoubtedly, mortgage ILS deals are increasingly contributing to annual issuance levels in the ILS market. However, Artemis' data shows that once removed, the size of the outstanding catastrophe bond and ILS market has still grown each year since the first mortgage deal in 2015. Furthermore, at year-end 2019 the market would still be at a record size, of more than \$36 billion.

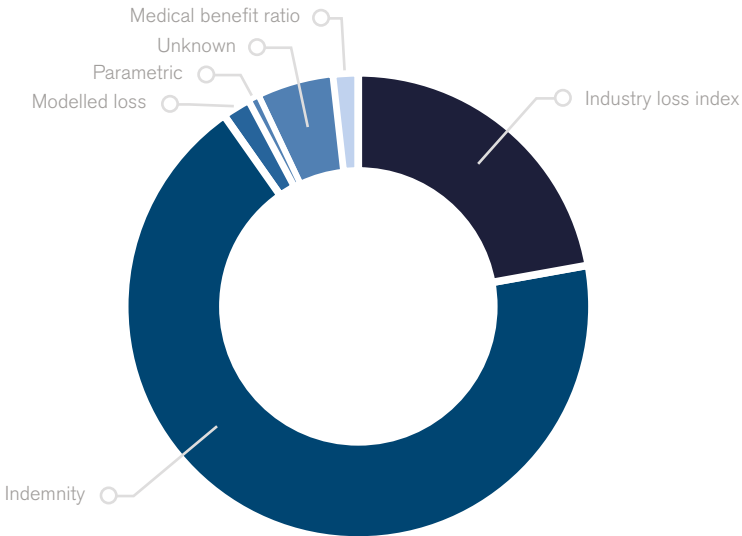


If you want to see full details of every catastrophe bond and ILS transaction included in the data in this report please visit www.artemis.bm/deal_directory/

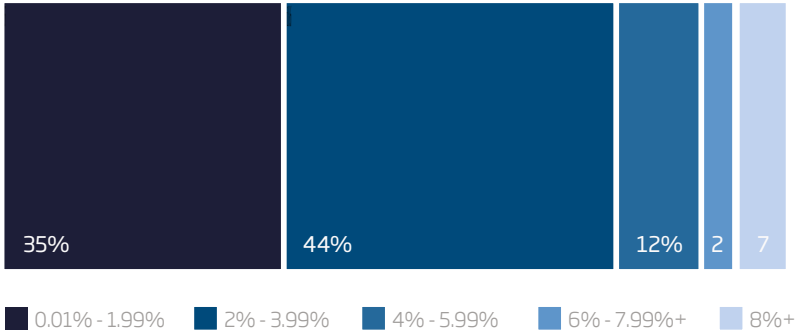
Full-year 2019 ILS issuance by peril



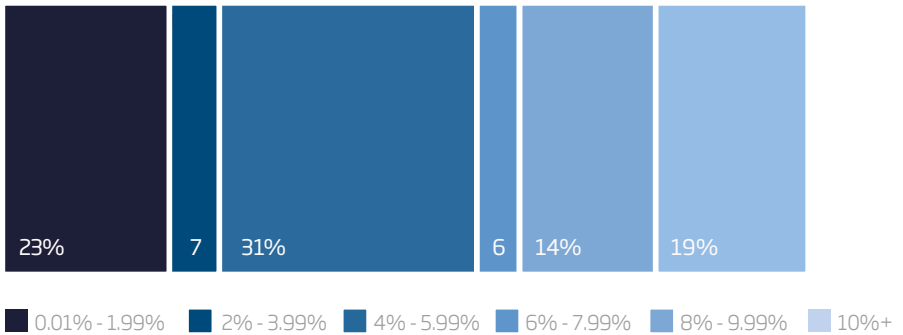
Full-year 2019 ILS issuance by trigger



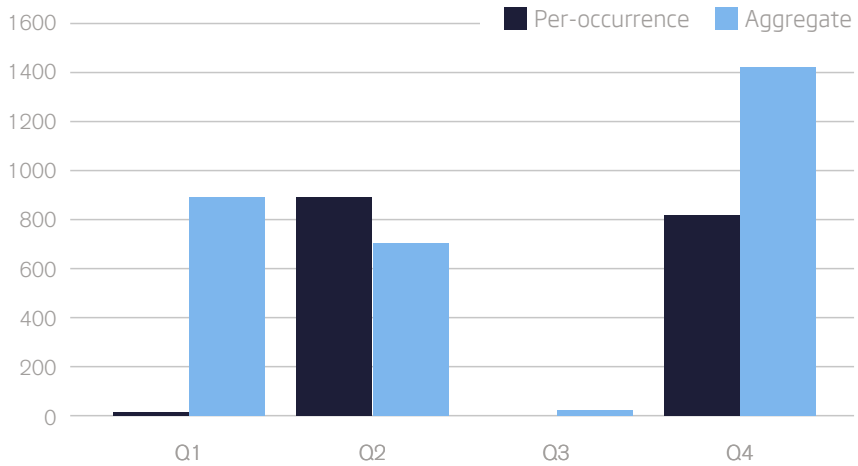
Full-year 2019 ILS issuance by expected loss



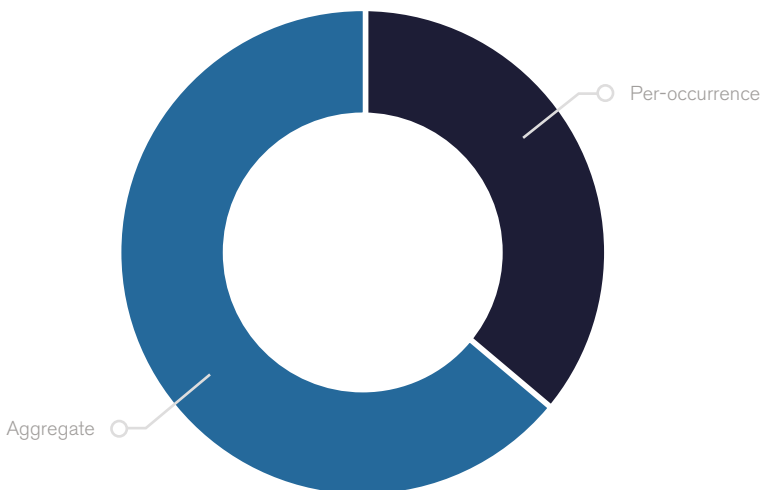
Full-year 2019 ILS issuance by coupon pricing



2019 ILS issuance per-occurrence vs aggregate split by quarter



Full-year 2019 ILS issuance per-occurrence vs aggregate split

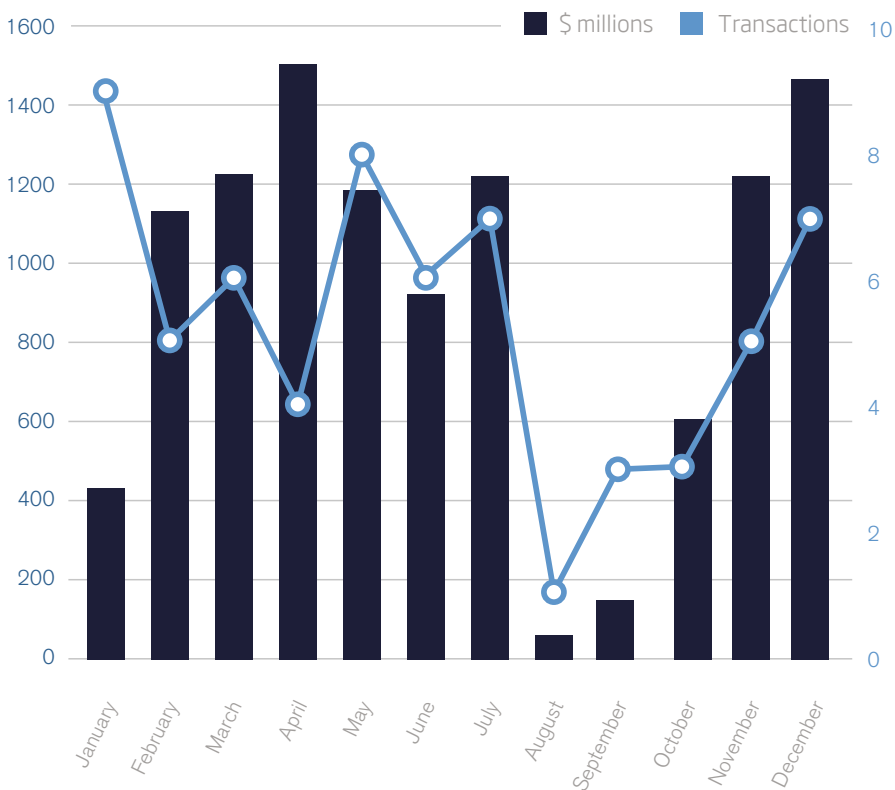


Full-year 2019 number of ILS transactions and volume issued by month (\$M)

For the sixth year running, the majority of catastrophe bond and ILS issuance came to market in the first-half of the year, in terms of the size of transactions and the number of deals. 38 separate transactions were issued in the opening six months of the year, amounting to approximately \$6.4 billion.

Seven months of the year witnessed issuance levels of more than \$1 billion, with the strongest level seen in the month of April, at more than \$1.5 billion. For the second year in a row, at least one deal came to market in each month of the year, with the most (9) occurring in January and the least (1) in August.

As shown by the Artemis Deal Directory, three deals with a current combined value of \$850 million are already scheduled to be issued in January, and it's likely that more are in the pipeline as the re/insurance and ILS markets look to capitalise on improving market conditions.



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