



Q2 2016 Catastrophe Bond & ILS Market Report

A quiet quarter fails to keep
up with investor demand

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INTRO

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

Data from the Artemis Deal Directory shows that over the last decade catastrophe bond and ILS issuance in the second-quarter averages more than \$2.6 billion, the only quarter in this period to average north of \$2 billion.

Q2 2016 issuance failed to hit \$2 billion, with just \$1.624 billion of new risk capital issued from 14 transactions, so not meeting investor demand. This is the first time since 2011 that issuance has failed to reach \$2 billion, resulting in a decline in the outstanding market size from the record-breaking \$26.516 billion seen at the end of Q1, to \$25.174 billion.

A quiet second-quarter, in terms of deal volume, saw the outstanding catastrophe bond and ILS market size decline from the end of Q1. Despite this, a host of private deals and continued investor appetite meant the outstanding market remained above the \$25 billion threshold first breached at the end of 2014, according to 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

14 deals comprised of 23 tranches of notes came to market in Q2, resulting in \$1.624 billion of new catastrophe bond risk capital issued.

Two new sponsors entered the space in Q2. United Insurance Holdings brought U.S. named storm and earthquake risk to investors and Security First Insurance Co. utilised the capital markets for protection against Florida named storms and severe thunderstorms.

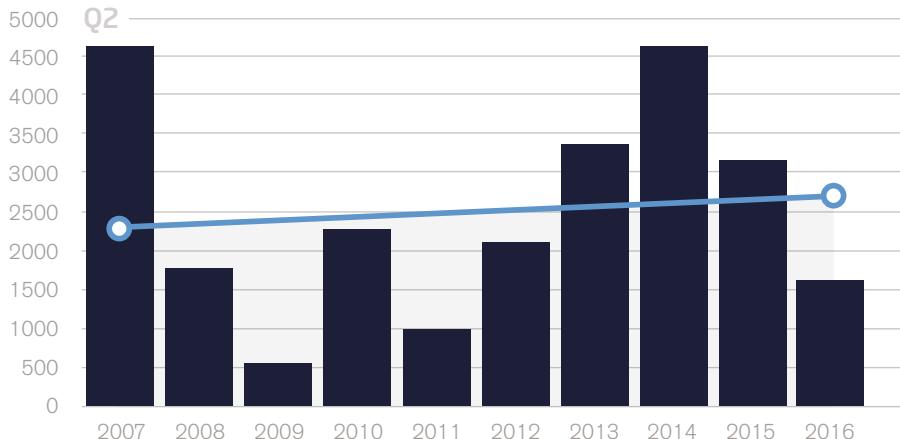
Repeat sponsors dominated Q2 providing 74%, or \$1.199 billion of new risk capital issued. Allianz added \$185 million of U.S. named storm and quake protection, while Southern Oak Insurance Co. brought \$53.575 million of Florida named storm risk to market. USAA returned in Q2 with its latest Residential Re multiple U.S. peril cat bond, and Munich Re's newest Queen Street deal provided welcomed geographical diversification. Zurich and United Guaranty (AIG) returned with operational risk, and mortgage insurance risk diversification, respectively, accounting for 32% of Q2 issuance, in terms of deal volume.

50% of Q2 transactions were privately placed, amounting to roughly \$304 million. There was a notable lack of private deals in Q1 2016, but a range of unknown sponsors added property catastrophe risks, California quake, and Florida named storms protection, in Q2.

ISSUER / TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Oak Leaf Re Ltd. (Series 2016-1)	Southern Oak Insurance Co.	Florida named storms	53.575	Jun
Market Re Ltd. (Series 2016-4)	Unknown	Florida named storms	25	Jun
Blue Halo Re Ltd. (Series 2016-1)	Allianz Risk Transfer	U.S. named storm, U.S. quake	185	Jun
Market Re Ltd. (Series 2016-2)	Unknown	Florida named storms	78.7	Jun
Resilience Re Ltd. (Series 1661A)	Unknown	Property catastrophe risks	34	Jun
Dodeka VIII	Unknown	U.S. property catastrophe risks	23.812	Jun
Laetere Re Ltd. (Series 2016-1)	United Insurance Holdings	U.S. named storm, U.S. quake	100	May
First Coast Re Ltd. (Series 2016-1)	Security First Insurance Co.	Florida named storm, severe thunderstorm	75	May
LIRe (Series 2016-1)	Unknown	Property catastrophe risks	3.75	May
Operational Re Ltd.	Zurich Insurance Co. Ltd.	Operational risks	222	May
Queen Street XII Redac (2016)	Munich Re	U.S. hurricane, Euro wind	190	May
Residential Reinsurance 2016 Limited (Series 2016-1)	USAA	U.S. multi-peril	250	May
Bellemeade Re II Ltd. (Series 2016-1)	United Guaranty (AIG)	Mortgage insurance risks	298.6	May
Resilience Re Ltd. (Series 1642B)	Unknown	California earthquake	85	Apr

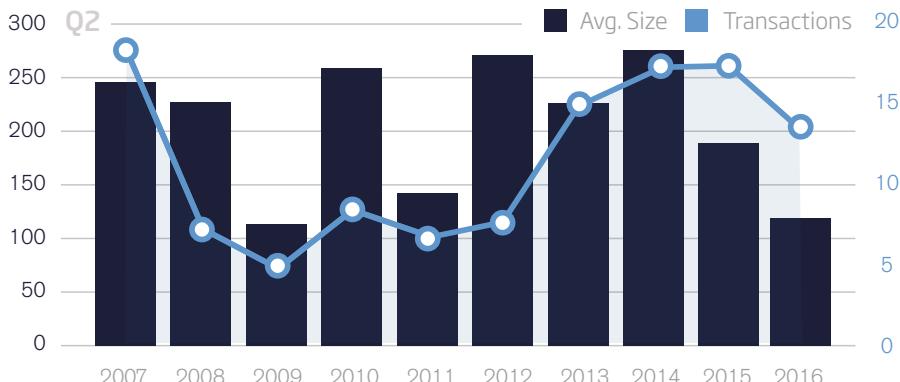
Q2 ILS issuance by year (\$M)

For the first time since 2011 catastrophe bond and ILS issuance failed to surpass the \$2 billion mark in the second-quarter of 2016, with \$1.624 billion of new risk capital brought to market. Data from the Artemis Deal Directory shows that four of the last ten Q2s have recorded more than \$3 billion of issuance.



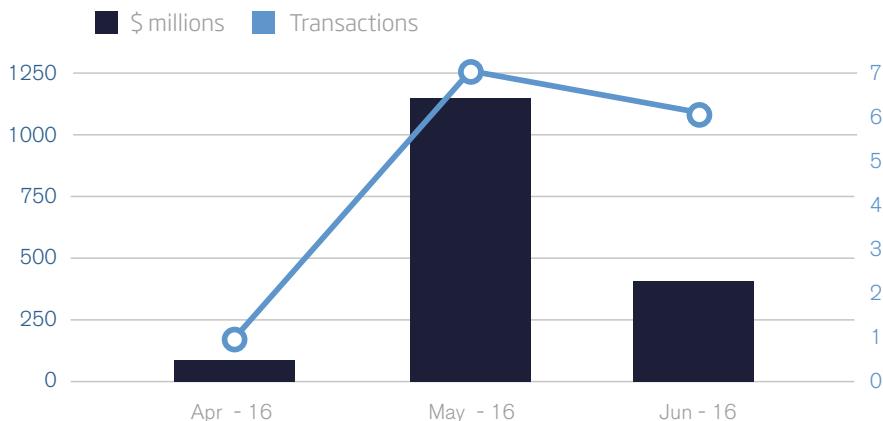
ILS average transaction size & number of transactions by year (\$M)

During the second-quarter of 2016 the average transaction size was roughly \$116 million from 14 deals, which is almost \$90 million below the ten-year average for volume, but 2.1 above the average number of transactions. Unlike Q1, a host of smaller, private deals came to market during Q2, which increased the number of transactions but, owing to their typically smaller size, reduced the Q2 average transaction size to its lowest level since 2009.



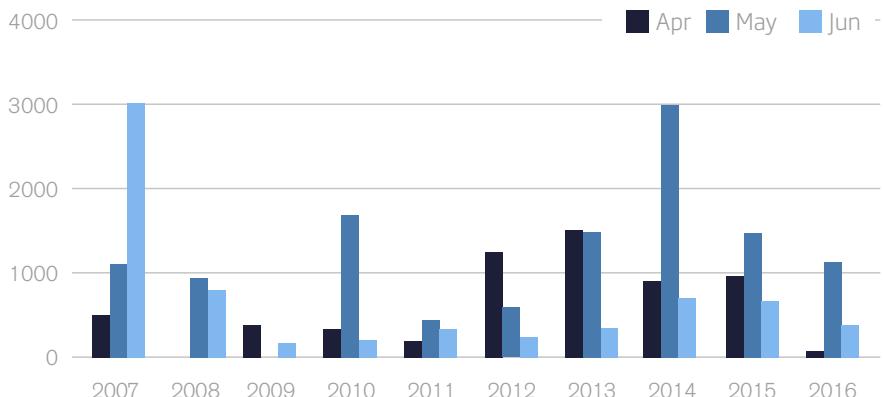
Number of transactions and volume issued by month (\$M)

Typical of recent Q2 issuance levels the majority of deals, in terms of risk capital issued, came to market in May, with roughly \$1.14 billion of catastrophe bond and ILS issuance in the month. Only one deal came to market in April, but a wave of private catastrophe bond and ILS issuance in June helped Q2 issuance exceed \$1.5 billion, for the fifth consecutive year.



Q2 issuance by month & year (\$M)

In a notable reverse of more recent Q2 trends issuance started slowly in the quarter, with just \$85 million of new risk capital brought to market in April. In recent years, June has been the quietest month for Q2 catastrophe bond and ILS issuance, but a lack of activity in April and the launch of several private deals, resulted in more than \$400 million of issuance in the final month of the quarter.





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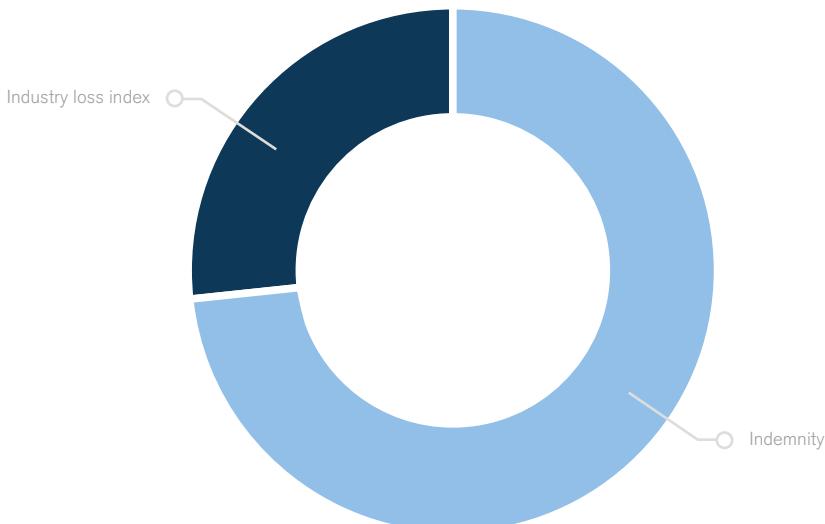
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Q2 2016 ILS issuance by trigger type

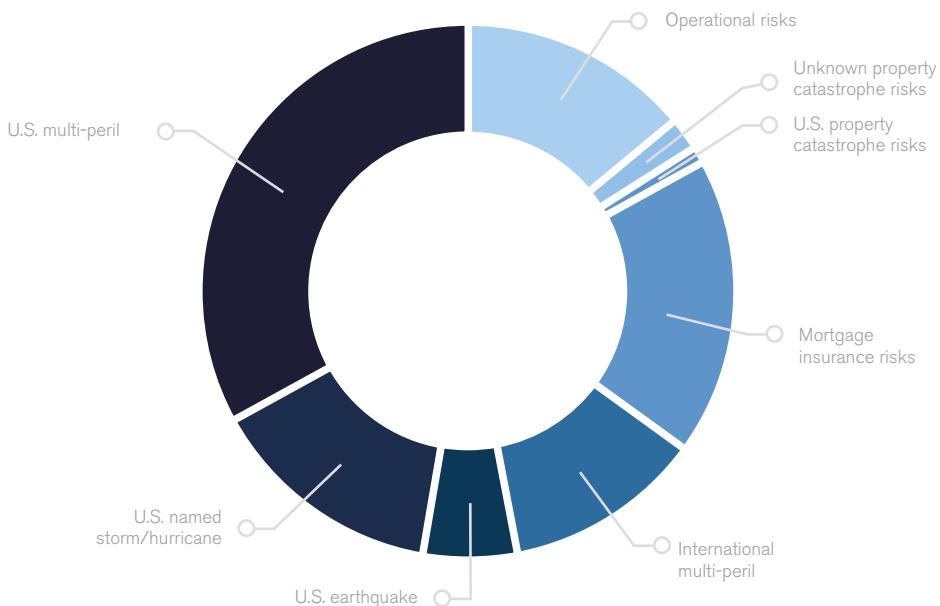
As in Q2 2015 and the first-quarter of this year, indemnity protection dominated issuance in Q2 2016, with sponsors securing more than \$1.1 billion of indemnity structured cover, accounting for 73% of the total risk capital issued in the quarter.



The remaining 27%, or \$399 million of issuance in Q2 utilised an industry loss index trigger structure. Compared with recent quarters, catastrophe bond and ILS issuance during Q2 lacked trigger diversification, with indemnity and industry loss index protection being the only triggers utilised by sponsors. Data from the Artemis Deal Directory shows that this is the first time this has happened in any quarter, since Q4 2014. Three out of the 14 deals that came to market in Q2 failed to disclose trigger structure information.

Q2 2016 ILS issuance by peril

Continuing the trend seen in the first-quarter of 2016 no single peril significantly dominated catastrophe bond and ILS issuance in Q2, so the quarter offered investors a variety of perils. U.S. multi-peril claimed the largest slice of issuance in Q2 at \$535 million, or 33% of total risk capital issued.



Zurich brought \$222 million of operational risk diversification to investors during the quarter, the first time in the history of the catastrophe bond and ILS market that a deal has covered this exposure. United Guaranty (AIG) returned to the market in Q2, providing investors with \$298.6 million of mortgage insurance risk diversification.

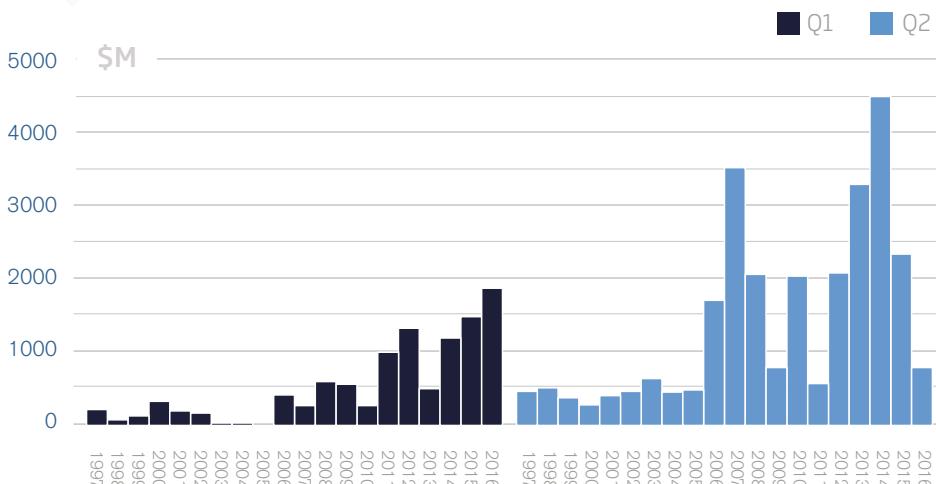
\$190 million of international multi-peril, which this quarter featured U.S. hurricane and European windstorm, protection came to market in Q2. Further diversification came from an unknown sponsor that provided \$85 million of protection against U.S. earthquake risks. While U.S. named storms and hurricanes made up \$232 million, or 14% of Q2 issuance. The remaining \$62 million of issuance offered investors diversification in the form of property catastrophe risks.

Insurance Linked Securities (ILS)

A tale of two ILS quarters during the first half of 2016 highlights the divergence of the ILS market this year. In the first quarter of 2016, GC Securities, a division of MMC Securities LLC ("GC Securities" or "we") saw the most active 144A P&C catastrophe bond market in the market's history with \$1.87B of new issuance through 7 transactions. However, in the second quarter of 2016, we saw 144A P&C new issuance slow dramatically to being the lowest issuance quarter of the last 5 years and the second lowest issuance quarter within the last 11 years. It is also notable that second quarter 144A P&C new issuance (based on aggregate notional) was the lowest percentage (29.96%) of the first half calendar year 144A new issuance activity since the inception of the ILS market.

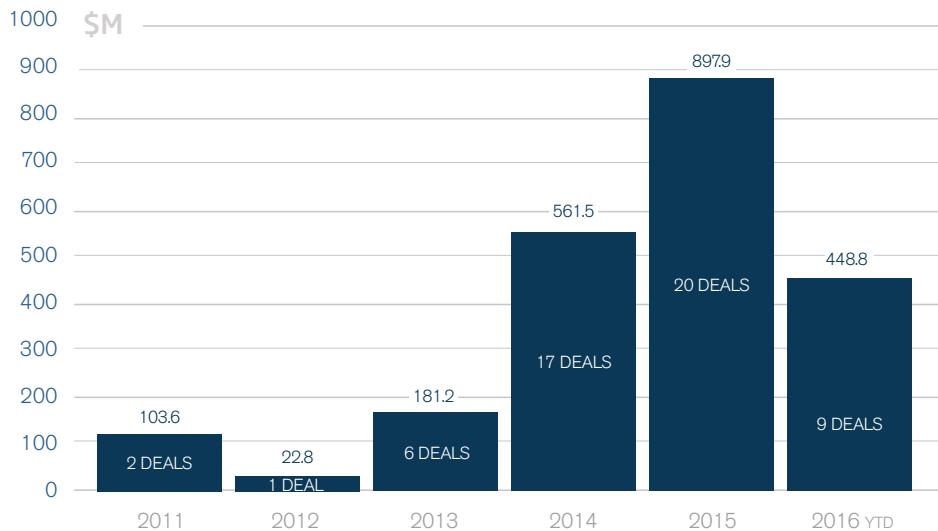
The decline in second quarter issuance coupled with \$2.759B of 144A P&C catastrophe bond maturities and redemption has resulted in a decline in aggregate outstanding 144A P&C cat bond issuance to \$21.069B (as of June 30, 2016). A highlight of the second quarter is that two new sponsors (U.S. insurers) accessed the 144A P&C catastrophe bond market.

While the private cat bond market continues to grow, we acknowledge that some of these issuances are transactions that were previously completed in collateralized reinsurance format and/or from issuers who previously utilized only 144A offering format. Collateralized reinsurance aggregate limits have been flat to slightly down as well. The table below shows the 1st Quarter and 2nd Quarter 144A P&C catastrophe bond issuance since 1997:



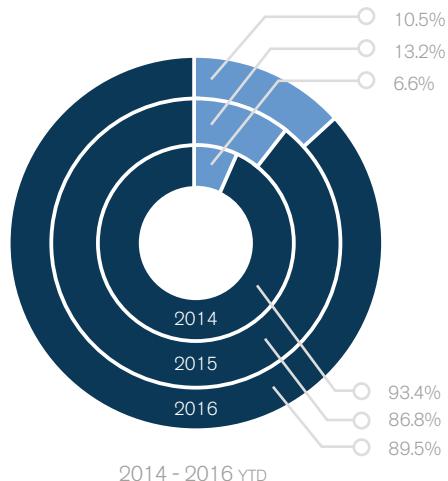
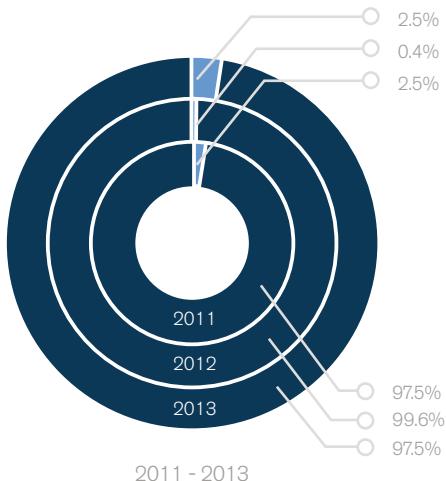
Source: GC Securities Proprietary Database (P&C catastrophe bonds as of June 30, 2016).

Risk capital issued



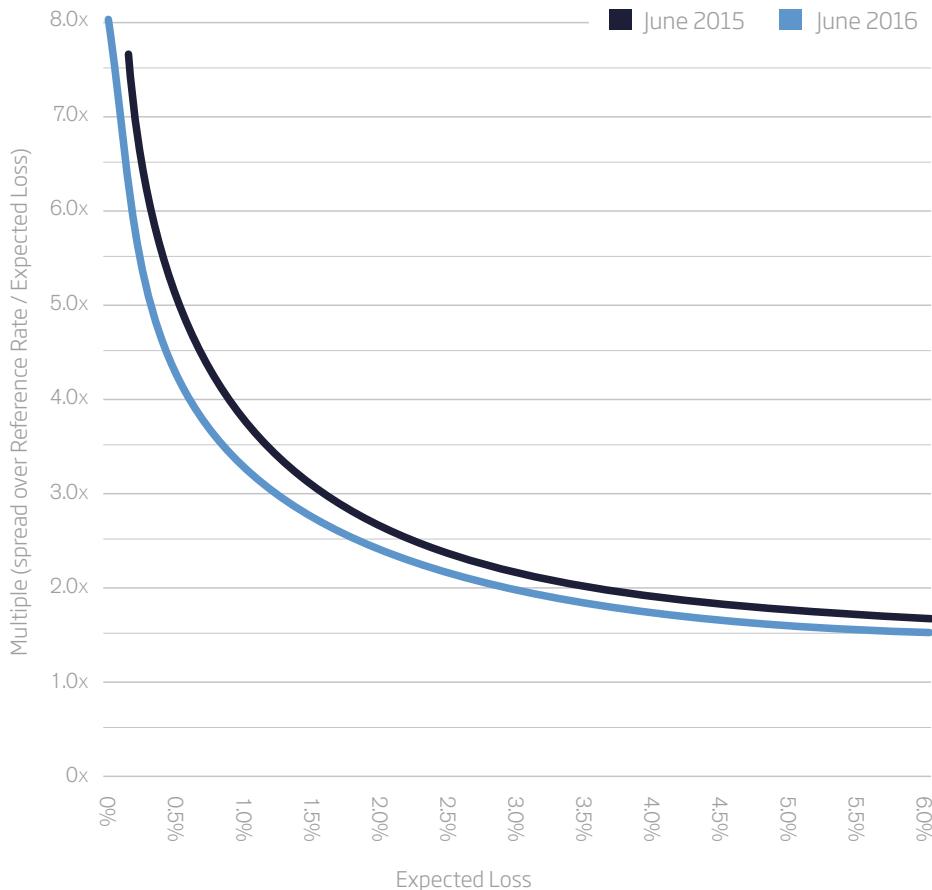
Private vs. 144A by Limit.

■ Private ■ 144A



Source: GC Securities Proprietary Database (P&C catastrophe bonds as of June 30, 2016).

Pricing stability in the ILS market since end of 2014 has contributed to the stagnation of aggregate issuance volume given that traditional reinsurance pricing has continued to decrease since end of 2014 and has generally fallen in line with ILS pricing. As a result of light P&C new issuance pipeline and upcoming 144A P&C catastrophe maturities (\$700M in 3rd quarter 2016, \$680M in 4th quarter 2016 and \$1.9B in January 2017), we expect further softening in ILS pricing, which is already begun to be demonstrated through the comparison of GC Securities' secondary pricing curves for 144A P&C catastrophe bond issuance as of June 15, 2015 to June 15, 2016.



In addition to pricing pressure beginning to build, several structural trends occurred in the first half of 2016, which have all been favorable for cedents. Below are highlights of select structural trends:

- Use of semi-private cat bond structures (i.e. 4(2) private cat bonds that are resellable in 144A format) with two established 144A issuers: Such structures can be useful for issuances generally less than \$75M for streamlining transactions costs though cedents need to be mindful of any counter increases on the net ROL paid to investors when evaluating such usage. Overall, such format is part of the suite of offering formats for alternative capital to fit cedents of all types: large/small, one/multi-year and insurers/reinsurers/corporates.
- Increased use of putable notes over US Treasury Money Market Funds (UST MMFs): For those cedents where UST MMFs are not required, use of putable notes (issued by development banks such as the International Bank of Reconstruction and Development or European Bank of Reconstruction and Development) have become attractive to investors to generate additional overall return with investors seeking such opportunities both in the new issuance marketplace as well as secondary marketplace; it has been particularly useful for low expected loss / loss net ROL transactions.
- USAA has accessed the first all-natural perils 144A P&C catastrophe bond demonstrating the broadening appetite from some investors for expanding perils. Investors have already been assuming all-natural perils risks in the form of collateralized reinsurance so it is natural in our view that such structure would expand to catastrophe bonds.
- Growing use of contractual liquidity features in catastrophe bonds for voluntary markets where the expected 90-days worth of paid claims to the affected layer can be advanced to the cedent along with reimbursement of actual paid claims.
- Longer development periods before collateral release continues to expand in the catastrophe bond market. While development periods for collateralized reinsurance have been up to 67 months, the catastrophe bond market has recently expanded from a general standard of 36 months (particularly for indemnity triggered transactions) to 48 months. Investors' willingness to provide longer development periods is particularly relevant for earthquake risk that can have longer development tail periods compared to other perils.
- Increased trigger style options: Use of cascading trigger structures where the attachment level of the catastrophe adjusts depending upon the amount of underlying retention and traditional reinsurance was used several times in the first half of 2016. Additionally, multi-peril term aggregate protection was also embraced by the ILS investor base.



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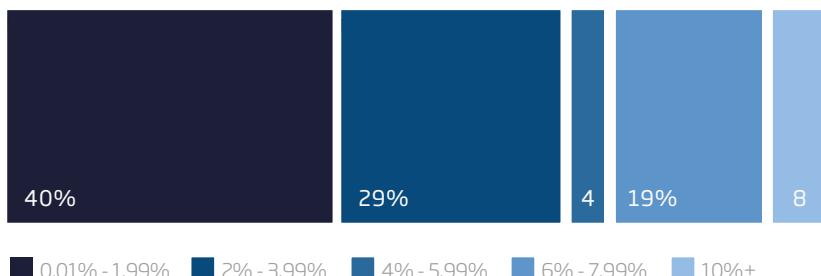
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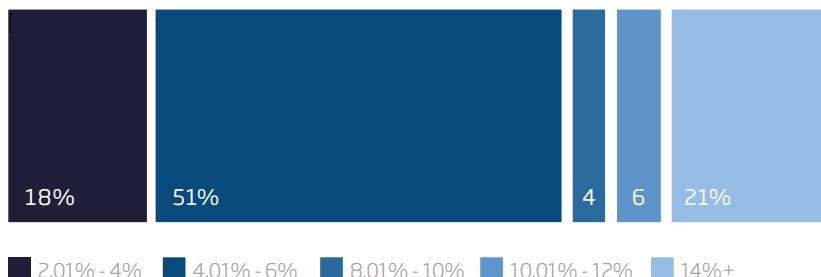
Q2 2016 ILS issuance by expected loss

For deals that we have expected loss data for (this amounts to \$1.022 billion of total risk capital issued), the majority of issuance, in terms of deal volume, had an expected loss of above 2% in the second-quarter of 2016, amounting to \$615 million. The riskiest notes on offer during Q2 came from the Class B Blue Halo Re notes from Allianz, and the Class C Laetere Re notes from United Insurance Holdings, which both had an expected loss of above 11%. On the other end of the spectrum, all three tranches of Operational Re had an expected loss of below 0.5%, while the Class 13 tranche of Residential Re had an expected loss of 0.62%, meaning that \$332 million of total risk capital issued in the quarter had an expected loss of below 1%.



Q2 2016 ILS issuance by coupon pricing

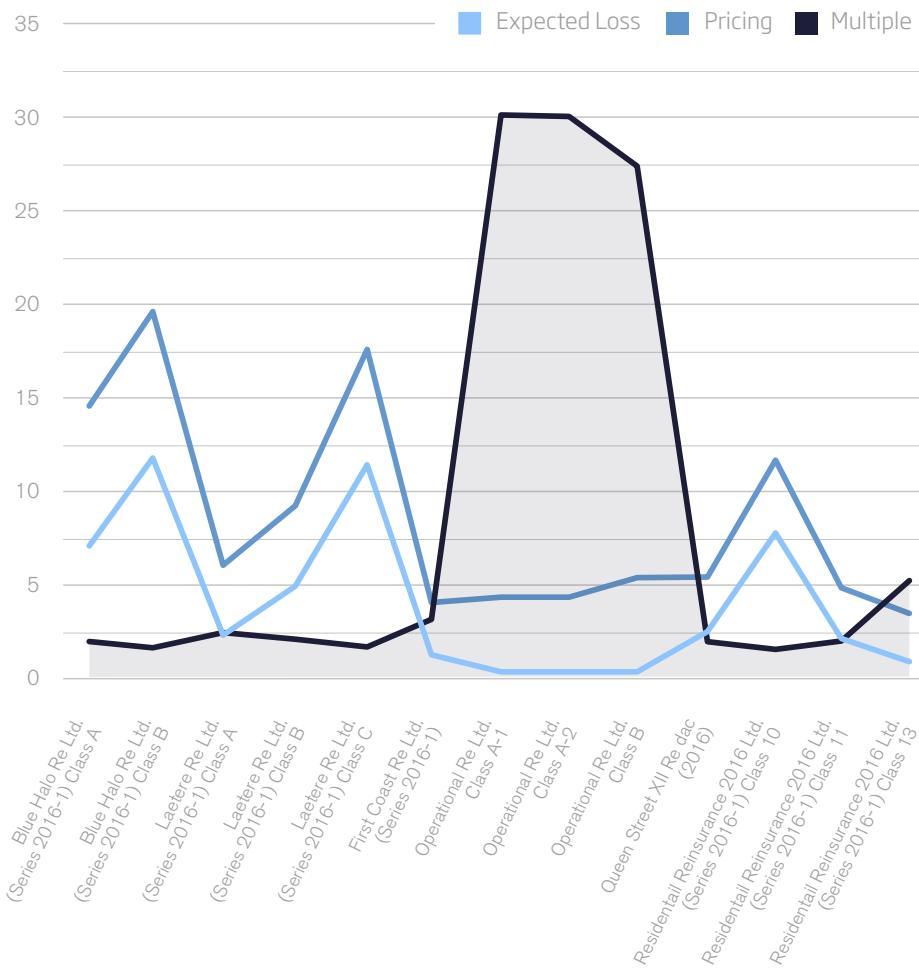
In terms of deal volume 69%, or \$702 million of catastrophe bond and ILS issuance during Q2, that we have pricing data for (this amounts to \$1.022 billion of total risk capital issued), offered investors a coupon of 6% or lower. In an improvement from Q1 2016 pricing trends, and in line with the more common target level for investors, more than half of deals (\$517mn), in terms of volume, offered investors a coupon in the range of 4.01% to 6%. Unsurprisingly, owing to its high expected loss, the Class B tranche of Blue Halo Re offered the highest yield in Q2, at 19.75%. While the Class 13 tranche of Residential Re was the only tranche to offer a coupon of below 4%, during Q2.



Pricing multiples of Q2 2016 issuance

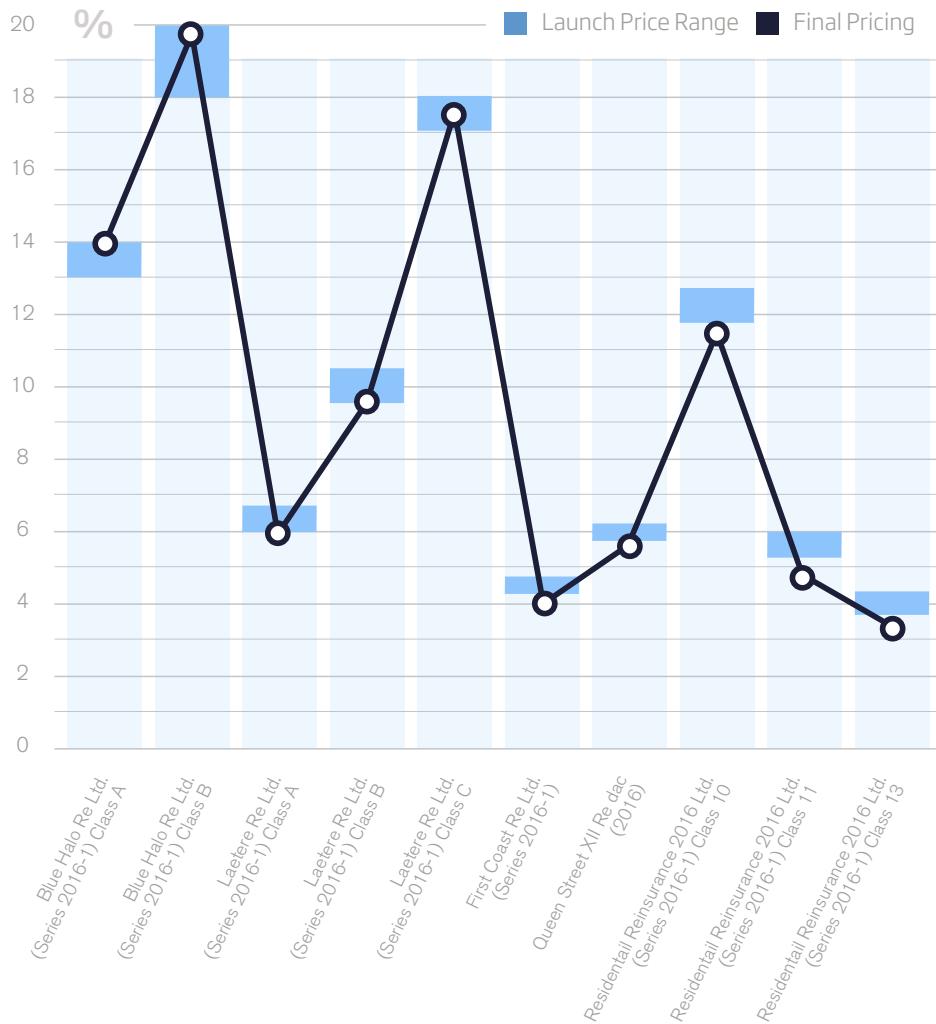
For deals that we have both expected loss and pricing data for (this amounts to \$1.022 billion of total risk capital issued), the average multiple (price coupon divided by expected loss) during Q2 was 2.12, the same witnessed in the first-quarter of 2016. The average multiple of catastrophe bond and ILS issuance had been on a steady decline throughout 2015, continuing in the opening months of this year. Although the average multiple stabilised during the second-quarter, the softened reinsurance market continues to push investors to take on more risk at a lower return.

Suggesting that the market is still trying to establish a floor in terms of pricing, seven out of the ten tranches of notes issued in Q2, that we have full pricing data for, priced below the mid-point of initial price guidance.



Cat bond and ILS price changes during Q2 2016 issuance

Moving away from the positive average price change witnessed during the first-quarter of 2016, of 0.60%, the pricing trend in Q2 was more in line with that seen in the second half of 2015. For deals that we have full pricing data for (this amounts to \$800 million of total risk capital issued), the average price change during the second-quarter was -6.73%. The most dramatic price decrease in the quarter came from the Class 13 tranche of Residential Re notes, declining by 18.75% while marketing. Both tranches of Blue Halo Re notes experienced price increases while marketing, and the Class C tranche of Laeterre Re notes priced at the mid-point of initial price guidance.

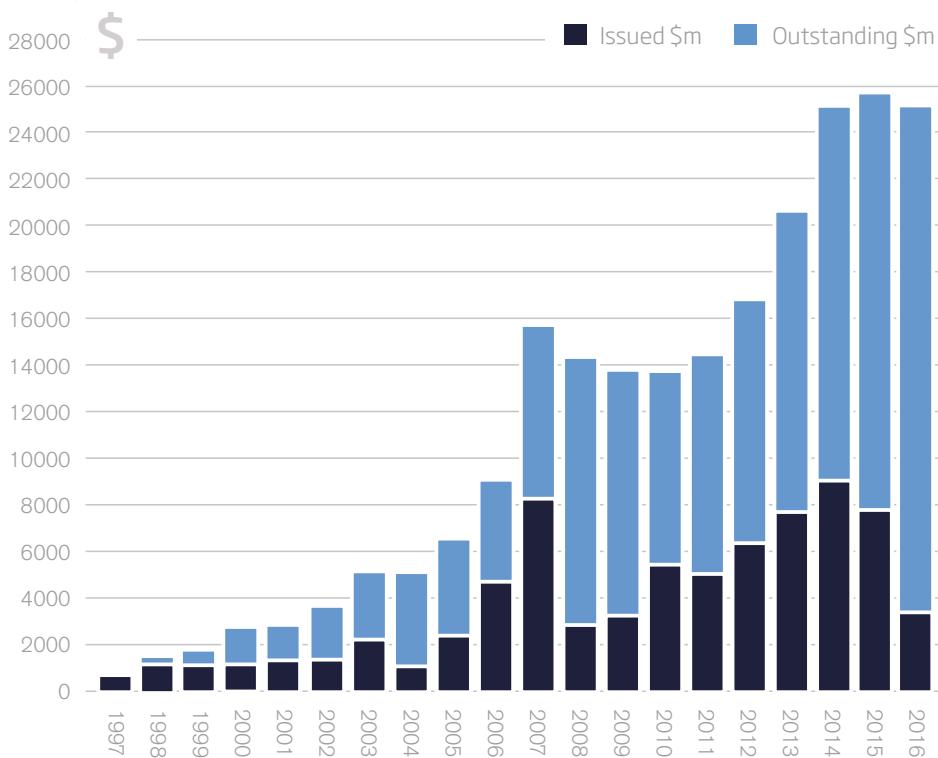


Issued / Outstanding

Catastrophe bond and ILS issuance in the second-quarter of 2016 failed to break any records. \$1.624 billion of new risk capital issued ensured it was actually one of the quietest Q2's of the last decade, according to data from the Artemis Deal Directory. A decline in issuance when compared with more recent second-quarter levels, combined with well over \$2 billion of maturities in the period, meant the outstanding catastrophe bond and ILS market size shrank by \$1.042 billion, from the end of Q1.

Despite a contraction in market size, the record-breaking levels of issuance seen in the first-quarter and a steady, albeit moderated issuance stream in the second-quarter of 2016, helped the catastrophe bond and ILS market end Q2 with an outstanding market size of \$25.174 billion.

The Artemis Deal Directory shows that this total is actually \$627 million larger than at the end of Q2, 2015. Typically, Q3 is the quietest period for catastrophe bond and ILS issuance, and with over \$800 million of deals scheduled to mature in the quarter it will take an above average volume of activity for the market to achieve outright growth.



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/



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