

First double-digit year ahead, \$10 billion imminent

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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 2017, looking at new risk capital issued and the composition of transactions completed during the quarter.

As in the first-quarter of 2017 catastrophe bond and ILS issuance in Q2 broke records, with over \$7 billion of new risk capital brought to market (\$7.001 billion to be exact) from 29 deals, made up of 55 tranches of notes. The Artemis Deal Directory shows that Q2 issuance is \$52 million less than full-year 2016 issuance and, combined with Q1 takes H1 2017 issuance to \$9.761 billion, the most ever witnessed in a single year.

Second-quarter issuance featured a broad spectrum of both new and returning sponsors of catastrophe bond and ILS transactions, including some unknown sponsors of private deals. Twelve tranches, or roughly \$412 million of notes issued during Q2 were privately placed as investors become increasingly comfortable and confident with this type of deal structure.

In the second-quarter of 2016 catastrophe bond and ILS issuance failed to reach \$2\$ billion for the first time since 2011, so quite the contrast from the huge \$7\$ billion of issuance witnessed in the second-quarter of this year. The strong issuance pipeline in the second-quarter of 2017 on the back of a record-breaking first-quarter has resulted in the outstanding catastrophe bond and ILS market ending \$Q2\$ at a new record, of \$29.3\$ billion.

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.

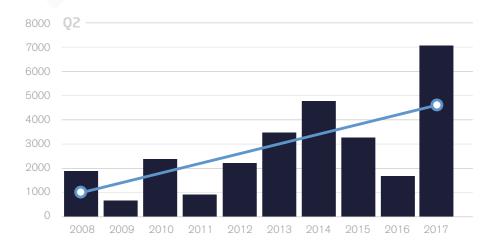
Transaction Recap

A mix of traditional 144A and private catastrophe bond transactions came to market in the record Q2 of 2017, and investors were treated to a broad mix of perils from a growing sponsor base. Details of each transaction can be seen below:

ISSUER/TRANCHE	SPONSOR	PERILS	SIZE (\$M)	DATE
Windmill I Re Ltd. (Series 2017-1)	Achmea Reinsurance Company N.V.	European peril	45.7	Jun
Northshore Re II Ltd. (Series 2017-1)	AXIS Capital & subsidiaries	International multi-peril	350	Jun
Lion II Re DAC	Assicurazioni Generali S.p.A.	European multi-peril	226	Jun
Spectrum Capital Ltd. (Series 2017-1)	Tokio Millennium Re (Bermuda)	International multi-peril	430	Jun
Oak Leaf Re Ltd. (Series 2017-1)	Southern Oak Insurance	Florida named storms	53.995	Jun
Market Re Ltd. (Series 2017-1)	Unknown	Florida named storms	65.1	Jun
Resilience Re Ltd. (Series 1761A)	Unknown	Unknown property catastrophe risks	37	Jun
Cranberry Re Ltd. (Series 2017-1)	Massachusetts MPIUA	Massachusetts multi-peril	350	Jun
Casablanca Re Ltd. (Series 2017-1)	Avatar P&C Insurance	Florida named storms	100	Jun
Eclipse Re Ltd. (Series 2017-02A)	Unknown	Unknown	53.3	May
Alamo Re Ltd. (Series 2017-1)	Texas TWIA	Texas named storm, thunderstorm	400	May
Sanders Re Ltd. (Series 2017-2)	Allstate subsidiaries	Florida multi-peril	200	May
Riverfront Re Ltd. (Series 2017-1)	Great American Insurance Group	International multi-peril	190	May
MetroCat Re Ltd. (Series 2017-1)	First Mutual Transportation Assurance Co.	New York multi-peril	125	May
Ursa Re Ltd. (Series 2017-1)	California Eartquake Authority	California earthquake	925	May
Citrus Re Ltd. (Series 2017-2)	Heritage P&C Insurance	U.S. named storms	35	May
Everglades Re II Ltd. (Series 2017-1)	Citizens Property Insurance	Florida named storms	300	May
Torrey Pines Re Ltd. (Series 2017-1)	Palomar Specialty Insurance	U.S. earthquake, U.S. multi-peril	166	May
Caelus Re V Ltd. (Series 2017-1)	Nationwide Mutual Insurance	U.S. multi-peril	375	May
Residential Re 2017 (Series 2017-1)	USAA	U.S. multi-peril	425	May
Oaktown Re Ltd. (Series 2017-1)	National Mortgage Insurance Corp.	Mortgage insurance risks	211.32	May
Integrity Re Ltd. (Series 2017-1)	American Integrity Insurance	Florida named storm, thunderstorm	210	May
Dodeka XII	Unknown	U.S. property catastrophe risks	9.631	April
Resilience Re Ltd. (Series 1741A)	Unknown	Unknown property catastrophe risks	173	April
First Coast Re Ltd. (Series 2017-1)	Security First Insurance	Florida named storm, thunderstorm	175	April
Kilimanjaro II Re Ltd. (Series 2017-2)	EverestRe	International multi-peril	300	April
Kilimanjaro II Re Ltd. (Series 2017-1)	EverestRe	International multi-peril	950	April
Pelican IV Re Ltd. (Series 2017-1)	Louisiana Citizens	Louisiana named storms	100	April
Eclipse Re Ltd. (Series 2017-01A)	Unknown	Unknown	20	April

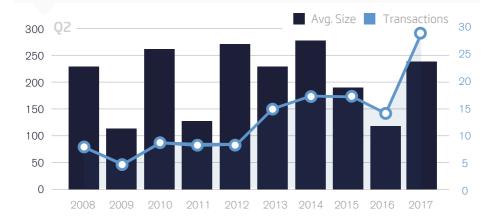
Q2 ILS issuance by year (\$M)

The \$7 billion of catastrophe bond and ILS issuance in the second-quarter of 2017 is the most ever seen in a single quarter since the market's inception, and takes H1 2017 issuance to beyond \$9.7 billion, the most ever witnessed in a single year. Second-quarter 2017 catastrophe bond and ILS issuance is roughly \$4.2 billion above the ten-year average.



Q2 ILS average transaction size & number of transactions by year (\$M)

In terms of number of transactions, the 29 brought to the catastrophe bond and ILS market in the second-quarter of 2017 is the most ever seen during the period, and above the ten-year average of 13. The average transaction size during the second-quarter is often larger than in other quarters, and the \$241.4 million average transaction size recorded in Q2 2017, is roughly \$40 million higher than the ten-year average.

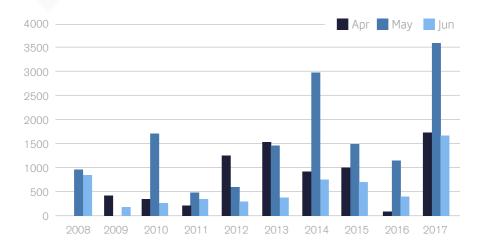


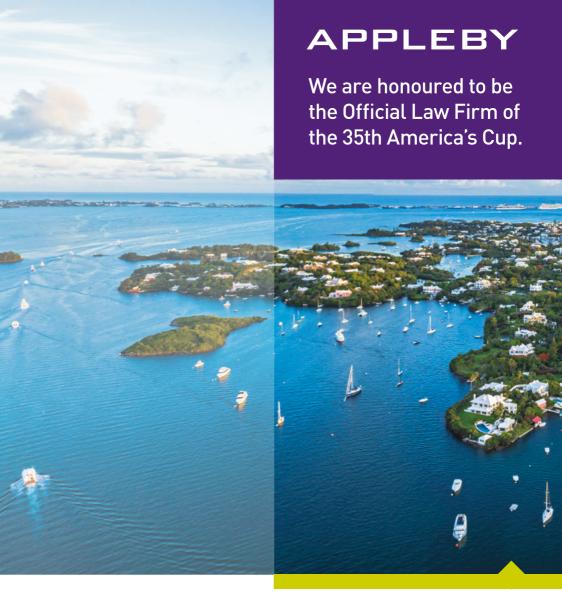
Number of transactions and volume issued by month (\$M)



Q2 issuance by month & year (\$M)

April, May and June, 2017 were all record months, for risk capital issued, combining to bring the \$7 billion to market. Issuance in April was almost \$1 billion above the ten-year average for the month, while May, which is typically the busiest month of the period, saw issuance levels surpass the ten-year average by over \$2.1 billion. Issuance in June was more than double the ten-year average of \$572 million.



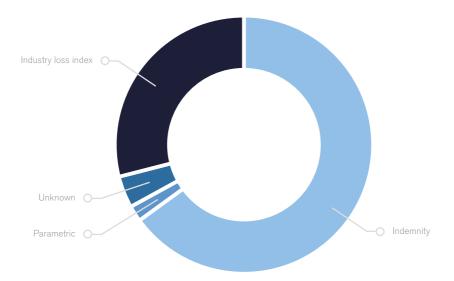






Q2 2017 ILS issuance by trigger type

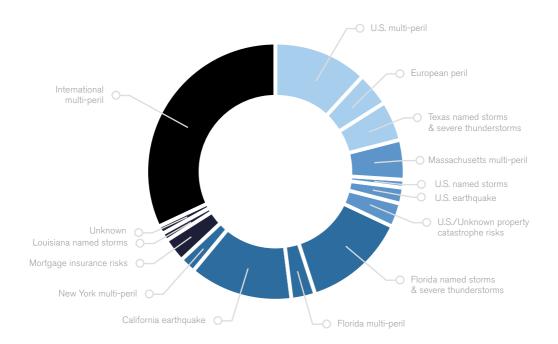
In a continuation of the trend seen in recent years, indemnity protection dominated Q2 issuance, with sponsors securing more than \$4.5 billion of indemnity protection, accounting for approximately 65% of new risk capital issued.



For the first time since Q3 2016 investors were treated to diversification in the form of a parametric trigger in Q2 2017, although this did account for only 2%, or \$125 million of issuance. Over \$2 billion, or roughly 29% of Q2 issuance utilized an industry loss index trigger, while we do not have trigger information for the remaining 4%, or \$283 million of issuance.

Q2 2017 ILS issuance by peril

No one peril dominated issuance in Q2, with the largest slice covering multiple international perils, accounting for nearly 32% of total risk capital issued. \$855 million, or nearly 12.3% of Q2 issuance covered multiple U.S. perils.



For the first time since the year 2000 European multi-peril risk featured in Q2, a \leq 200 million deal offering protection against EU windstorm and flood, and Italy earthquake risks. A further \leq 40 million of European peril coverage also featured in Q2. \leq 350 million of Massachusetts multi-peril, and \leq 125 million of New York multi-peril protection were also firsts for the market during the second-quarter.

U.S. and California quake protection accounted for around 15% of issuance, and a combination of U.S. and unknown property catastrophe risks made up nearly 4% of Q2 issuance. Deals covering multiple Florida perils accounted for over \$1.1 billion of issuance, while \$400 million of Texas named storms and severe thunderstorm protection also featured. Together, U.S. named storms and Louisiana named storms protection accounted for \$135 million of Q2 issuance, and roughly \$211 million covered mortgage insurance risks.

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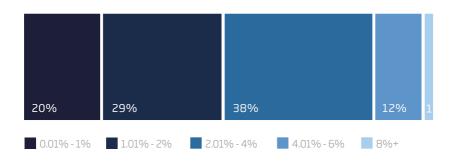
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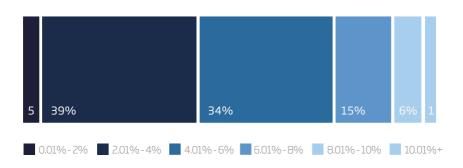
Q2 2017 ILS issuance by expected loss

For the \$6.29 billion of total risk capital issued that we have expected loss data for, 38%, or roughly \$2.39 billion had an expected loss of between 2.01% and 4%. Almost 50%, or roughly \$3 billion of Q2 issuance had an expected loss of below 2%, with around \$1.3 billion having an expected loss of less than 1%. \$755 million of issuance had an expected loss of between 4.01% and 6%, and just under \$60 million of issuance had an expected loss over 8%. The Class 10 tranche of Residential Re notes were the riskiest on offer, with an expected loss of 14.06%. Cranberry Re offered the lowest expected loss of Q2, at 0.46%.



Q2 2017 ILS issuance by coupon pricing

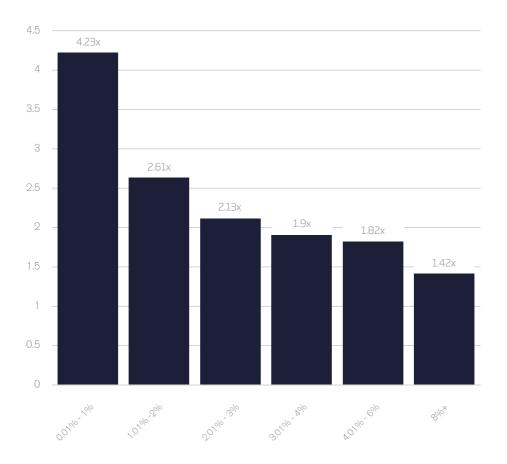
For Q2 issuance where we have pricing data (this amounts to \$6.508 billion of total risk capital issued), \$2.87 billion, or 44.1% paid investors a coupon of 4% or below. Over \$2.22 billion, or roughly 34% of Q2 issuance paid investors a coupon of between 4.01% to 6%. More than \$1.4 billion of issuance paid a coupon of over 6% in Q2 2017. The Class 10 tranche of Residential Re notes offered investors the highest coupon in Q2, of 17.5%. And the lowest coupon on offer in the period came from Cranberry Re, at 2%.



Q2 2017 average multiple by expected loss

Where we have both the expected loss and pricing data, the average multiple (price coupon divided by expected loss) during the second-quarter of 2017 was 1.99, which is lower than at the end of Q1 but above that seen at the end of 2016. The chart below shows the average multiple of Q2 issuance by expected loss range, revealing that investors command the highest multiple for the lowest risk/return deals.

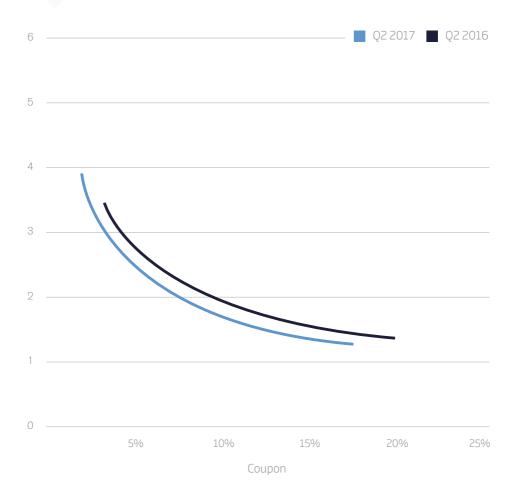
The chart shows the risk adjusted return capital markets investors took advantage of in Q2 2017, and investors are clearly willing to accept lower multiples as the risk rises, which also means the coupon would be rising.



Q2 2017 pricing & multiple year-on-year

The chart below is another way of looking at the risk adjusted return of issuance in the second-quarter of 2017, plotting the coupon versus the multiple. The two lines show that lower coupon deals command a higher multiple, and ILS investors are willing to take on much more risk for a higher return.

This chart shows that capital markets investors have been willing to accept more risk for the same amount of coupon in the second-quarter of 2017, when compared with issuance in the second-quarter of last year.



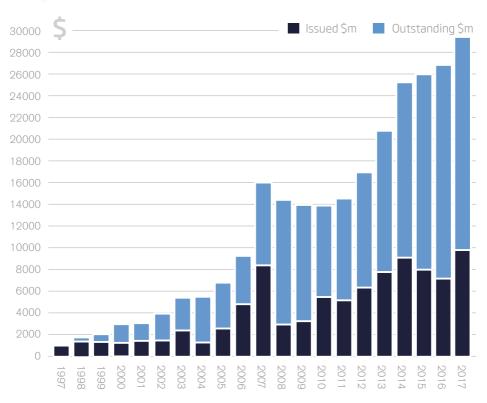
Issued / Outstanding

Issuance in the second-quarter of 2017 saw the highest volume of new risk capital come to market than any other quarter since the market's inception, roughly 20 years ago. Over \$4.8 billion of maturities occurred during Q2 2017, but \$7 billion of total issuance ensured the catastrophe bond and ILS market achieved outright growth, once again.

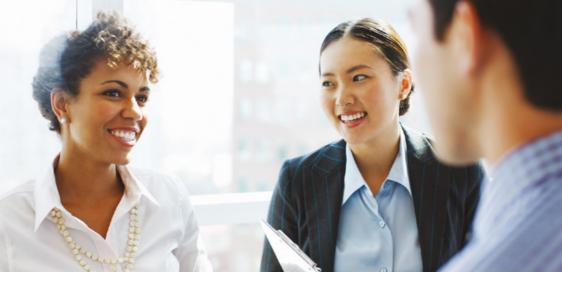
At the end of the second-quarter of 2017 the outstanding catastrophe bond and ILS market totalled \$29.3 billion, which is growth of over \$2.1 billion from the end of Q1, and is more than \$2.48 billion higher than at the end of 2016, as shown by the Artemis Deal Directory.

H1 2017 issuance reached a huge \$9.761 billion, making it the most active year for catastrophe bond and ILS issuance ever recorded, at just half-way through the year, and beating the previous record by \$667 million. Despite what some see as persistent re/insurance market headwinds, it's clear from the record-breaking first-half of 2017 that catastrophe bonds and ILS remain an attractive asset class.

A further \$1.32 billion of maturities are scheduled for H2 2017. However, the issuance pipeline remains active and we can safely say that issuance is going to hit \$10 billion for the first time, according to our data, with the outstanding market edging ever closer to and perhaps passing \$30 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/



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