Munich RE

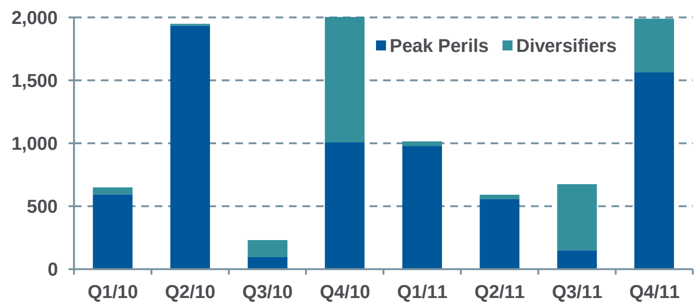
INSURANCE-LINKED SECURITIES (ILS)
MARKET REVIEW 2011 AND OUTLOOK 2012

2011 Market Review I/II

Cat bond market grows as a busy year-end makes up for moderate mid-year issuance

- With 21 transactions and a total issuance of $4.3bn, outstanding volume in the non-life ILS market remained at its end of 2010 levels, as both sponsors and investors underscored their interest in a stable and well-functioning convergence market
- $2bn of deal volume in the fourth quarter made up for the slack in issuance during the second and third quarters, with US-insurers requiring some time to adjust their risk management and reinsurance programs to the RMS Hurricane model update

Non-Life Issuance Volume (in $m)[1]

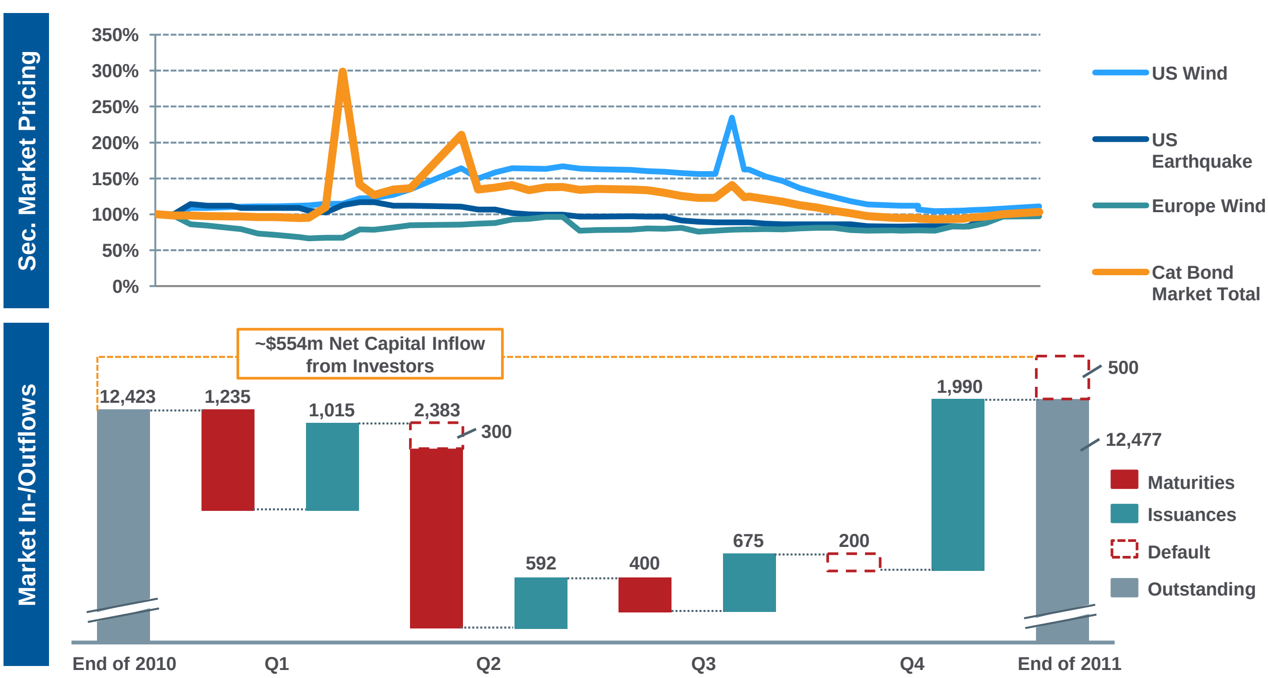


- Issuance in the second half of 2011 encountered significant demand, illustrating investors' continued interest in an uncorrelated asset class with an increasingly transparent risk profile despite the Tohoku Earthquake and the subsequent default of Muteki Ltd., which did not lead to a withdrawal of capital from the ILS sector
- Moreover, a series of European Windstorm and Multi-Peril deals and one Japanese Typhoon club deal in the year's second half brought about some diversification in investors' portfolios, thereby enabling sponsors to securitize peak perils at attractive conditions again

Inflows in cat bond funds and liquidity from maturities enable swift normalization in pricing after a temporary market uncertainty

- The short-lived impact of the RMS model update and the Tohoku Earthquake in particular can be clearly seen in the development of secondary market spreads in 2011, with spreads skyrocketing towards the end of the first quarter
- However, as $3.6bn of maturities during the year's first half and additional cash inflows to dedicated ILS funds outpaced issuances, pricing recovered quickly, and demand for both US and European perils was not compromised

Non-Life ILS Market In-/Outflows 2011 (in $m)[2] vs. Secondary Market Pricing 2011(Indexed)



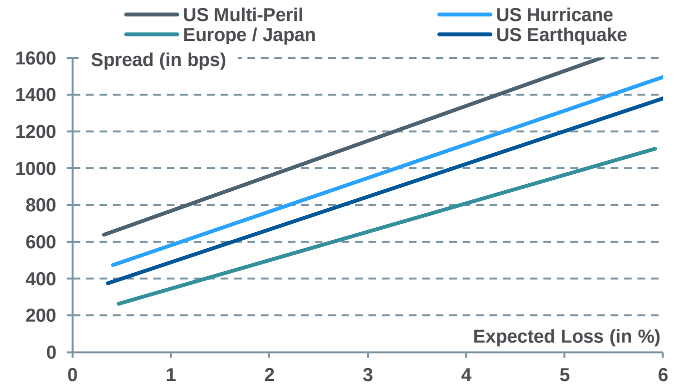
[1] Peak Perils are US Hurricane and US Earthquake, Diversifiers are Europe Wind, Japan Wind, Japan Earthquake and Tornado/Hail; Multi-Peril bonds were split into single perils according to their contribution to Expected Loss

2011 Market Review II/II

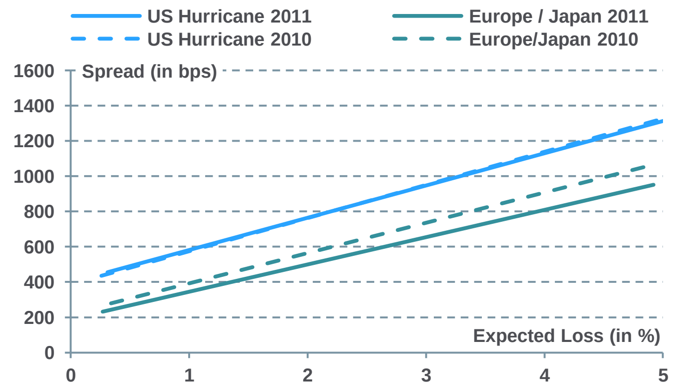
Need for diversification within ILS portfolios is reflected in pricing – 2010 levels prevail for all perils

- With the bulk of capital allocation to ILS being channeled through dedicated cat funds, the need for diversification within the ILS asset class was reflected in pricing levels for 2011 ILS issuances
- Investors' portfolios remain strongly biased towards US Hurricane, and the desire to balance out portfolios through investments in a broader range of perils saw European and Japanese issuances priced at a ~200bps discount to Hurricane cat bond with similar risk levels
- In addition, pricing for cat bonds covering several perils throughout the US reveals how dedicated cat funds operate and allocate capacity as quasi-reinsurers, applying limited budgets for each peril; consequently, the majority of US Multi-Peril bonds were priced with a significant mark-up, as they required more risk capital from investors
- Lastly, despite the impact of the RMS model on Hurricane issuance volumes over the year's first half, investors' return requirements for such bonds remained at 2010 levels; yet, the lack of diversifying issuances saw a slight decline in risk spreads for non-peak perils through 2011

Pricing of 2011 Cat Bond Issuances



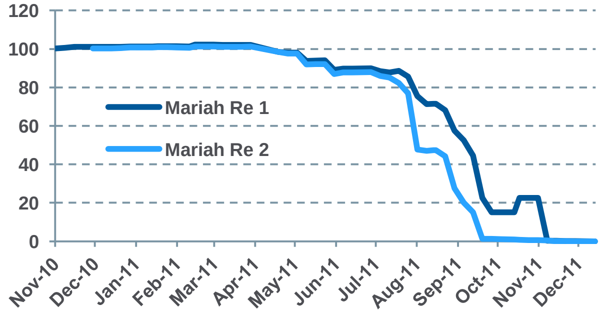
Pricing: 2011 vs. 2010 Issuances



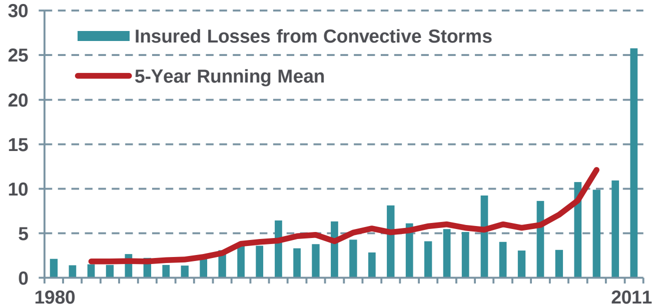
Extraordinary Tornado season and the Tohoku Earthquake force investors to portfolio write-offs

- 2011 turned out to be an endurance test for ILS investors, with the Tohoku Earthquake and a series of Tornadoes in the US leading to an overall loss of $500m (4% of the outstanding volume in the non-life ILS sector) – $300m loss from the Muteki default and $200m from the total loss of the Mariah Re Series 1 and 2
- However, uninterrupted demand for new issuances is a sign of investors' sustained interest in the ILS asset class
- Moreover, a comparison of insurance industry's losses from Convective Storms (Tornadoes) over the last 30 years illustrates that 2011 was considerably out of the historical trend and should not be indicative of the future

Market Values of Mariah Re 1 and 2



Historical Convective Storm Losses (in $bn)[2]



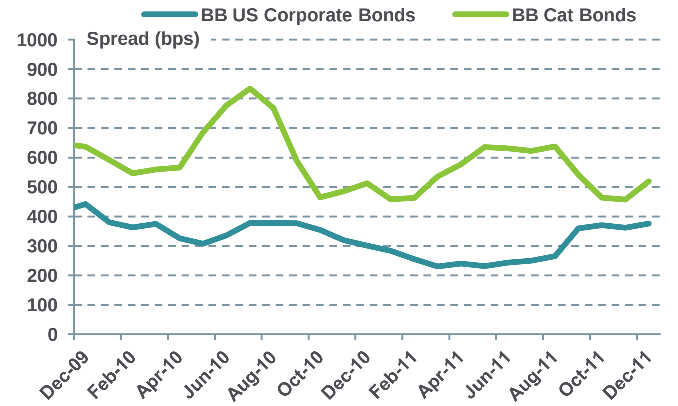
[2] Source: PCS

Market Outlook 2012

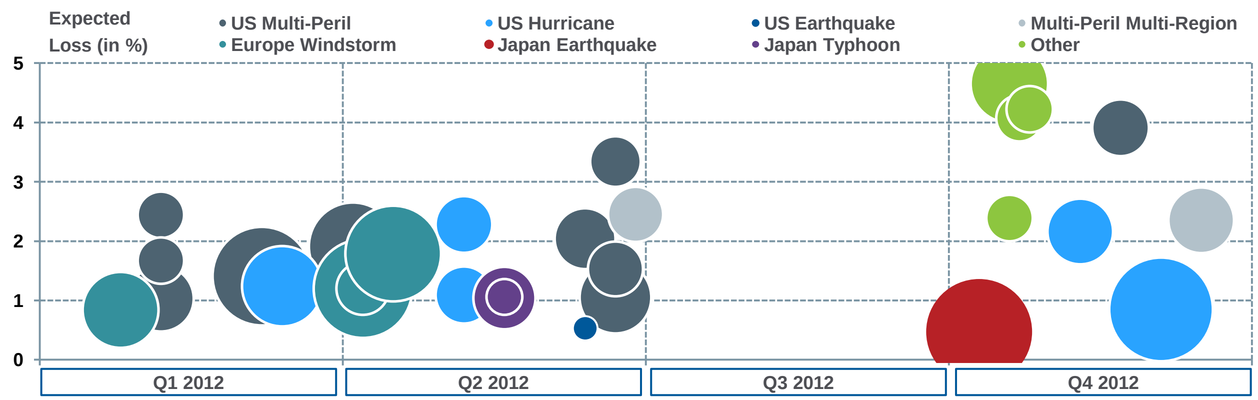
Postponed cat bond issuances expected to meet strong demand from maturities and fund inflows

- Although the decline of risk spreads in the cat bond market over the last two years has somewhat deteriorated the relative advantage of ILS returns, the low yield levels in mainstream debt market continue to draw capital into the ILS space
- In addition, roughly $3.2bn of maturities throughout a range of perils will create additional demand for new issuances
- As several strategic cat bond sponsors needed to adjust to the changes in the RMS models in 2011 and therefore postponed their cat bond placements to 2012, we expect issuance volume to lie north of $5bn

BB Cat Bond Spreads vs. BB Corporate Bond Spreads[3]



Upcoming Maturities (in $m)

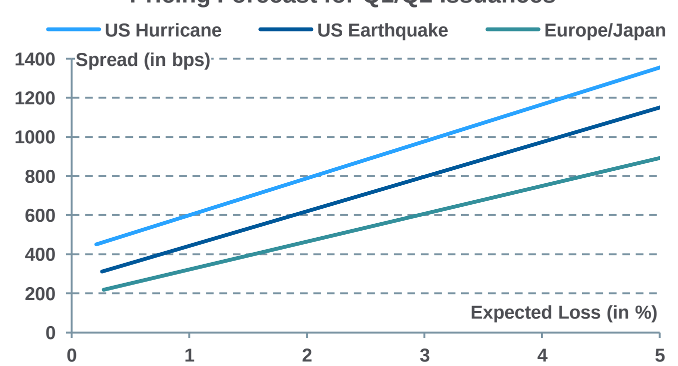


Q1 2012		Q2 2012		Q3 2012		Q4 2012	
US Wind	150	US Wind	150			US Wind	350
US Multi-peril	425	US Earthquake	14			US Multi-peril	75
Multi-peril Multi-reg.	134	US Multi-peril	516			Multi-peril Multi-reg.	100
		Multi-peril Multi-reg.	70			Japan Earthquake	260
		Europe Wind	504			Other	290
		Japan Wind	120				
Total	709	**Total**	1,374	**Total**	0	**Total**	1,075

Ongoing need for diversifying issuances in 2012 should uphold current pricing levels

- 2011 saw a moderate amount of non-US issuances, with roughly 80% of deal volume being exposed to US perils (cf. upper graph on page 2)
- While investors were able to somewhat balance out portfolios towards the year-end, demand for non-US issuances should be reflected in pricing given the maturities of European and Japanese transaction scheduled for 2012
- 2012 Pricing should hence stay in line with 2011, and non-US exposed deals should lock in risk premiums with a significant discount

Pricing Forecast for Q1/Q2 Issuances[4]



[3] Source: Bloomberg

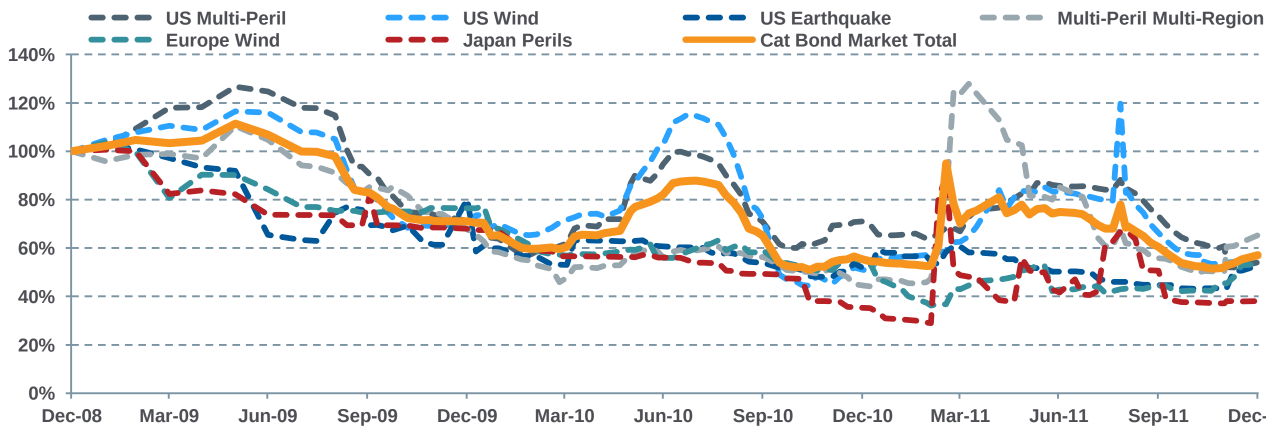
[4] US Hurricane and Europe Wind pricing forecast is based on seasonally-adjusted secondary market spreads and investor sounding for individual perils

Non-Life ILS Issuances 2011

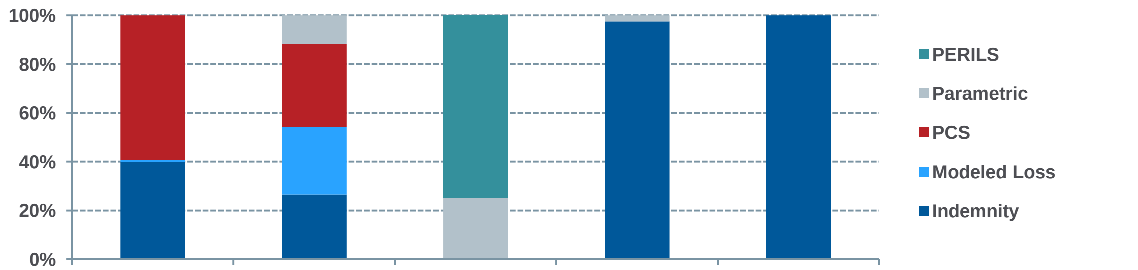
	Transaction		Cedent	Size ($m)	Covered Perils	Expected Loss (%)	Trigger	Pricing (bps)	Maturity	Collateral Solution
Q1 2011	**Foundation Re III Ltd.**	**Series 2011-1 Class A**	Hartford	135	US Hurricane	0.61	PCS	MMF + 500	February 2015	US MMF
	Successor X Ltd.	**Series 2011-2 Class IV-E3**	Swiss Re	160	US Hurricane/US Earthquake	3.13	PCS/ Parametric	LIBOR + 925	February 2014	Medium-Term Notes
		Series 2011-2 Class IV-AL3		145		5.38		LIBOR + 1,300		
	East Lane Re IV Ltd.	**Series 2011-1 Class A**	Chubb	225	US Hurricane/ US Earthquake/ Thunderstorm/Winterstorm	0.92	Indemnity	MMF + 575	March 2014	US MMF
		Series 2011-1 Class B		250	US Hurricane/ US Earthquake/ Thunderstorm/Winterstorm	1.20	Indemnity	MMF + 665	March 2015	US MMF
	Queen Street II Capital Ltd.		Munich Re	100	US Hurricane/ Europe Windstorm	1.59	PCS/ PERILS	MMF + 750	March 2014	US MMF
Q2 2011	**Blue Fin Ltd.**	**Series 4 Class B**	Allianz	40	US Hurricane/ US Earthquake	1.45	Modeled Loss	MMF + 850	May 2013	US MMF
	Johnston Re Ltd.	**Series 2011-1 Class A**	NC JUA/IUA Via Munich Re America	70	US Hurricane	1.93	Indemnity	MMF + 760	May 2014	US MMF
		Series 2011-1 Class B		132		1.60		MMF + 690		
	Residential Re 2011 Ltd.	**Class 1 Series 2011-1**	USAA	57	US Hurricane/ US Earthquake/ Severe Thunderstorm/ Winterstorm/ Wildfire	1.88	Indemnity	MMF + 900	June 2015	US MMF
		Class 2 Series 2011-1		33		3.77		MMF + 1,200		
		Class 5 Series 2011-1		160		1.06		MMF + 875		
	Loma Re Ltd.	**Series 2011-1 Class A**	Argo Re	100	US Hurricane/ US Earthquake/ Europe Windstorm/ Japanese Earthquake	2,35	PCS/PERILS/ Parametric	LIBOR + 950	December 2012	Tri-Party Repo
Q3 2011	**Queen Street III Capital Ltd.**		Munich Re	150	Europe Windstorm	1,91	PERILS	MMF + 475	August 2014	US MMF
	Embarcadero Re Ltd.	**Series 2011-I Class A**	CEA	150	US Earthquake	1,96	Indemnity	MMF + 660	July 2014	US MMF
	Pylon II Capital Ltd	**Class A**	Electricité de France	93 (EUR 65mn)	Europe Windstorm	2,59	Parametric	EURIBOR + 550	May 2014	Tri-Party Repo
		Class B	Electricité de France	122 (EUR 85mn)		4,52	Parametric	EURIBOR + 900	May 2014	Tri-Party Repo
	Kizuna Re Ltd.		Tokio Marine	160	Japan Typhoon	1,81	Indemnity	LIBOR + 550	September 2014	N.A.
Q4 2011	**Calypso Capital Ltd.**		Axa	248	Europe Windstorm	1,67	PERILS	LIBOR + 410	January 2015	Medium-Term Notes
	Queen Street IV Capital Ltd.		Munich Re	100	US Hurricane/ Europe Windstorm	1,94	PCS/ PERILS	MMF + 750	April 2015	US MMF
	Successor X Ltd.	**Series 2011-3 Class V-F4**	Swiss Re	80	US Hurricane	6,70	PCS	MMF + 1,625	November 2015	US MMF
		Series 2011-3 Class V-X4		50	US Hurricane/ Europe Windstorm	3,76	PCS/ PERILS	MMF + 1,125		
	Residential Re 2011 Ltd.	**Class 1 Series 2011-II**	USAA	100	US Hurricane/ US Earthquake/ Severe Thunderstorm/ Winterstorm/ Wildfire	1,88	Indemnity	MMF + 890	December 2015	US MMF
		Class 2 Series 2011-II		50		3,77		MMF + 1,325		
	Compass Re Ltd.	**Series 2011-1 Class 1**	National Union Fire Insurance (Chartis)	75	US Hurricane/ US Earthquake	1,57	PCS	MMF + 900	January 2015	US MMF
		Series 2011-1 Class 2		250		1,62		MMF + 1,025		
		Series 2011-1 Class 3		250		1,94		MMF + 1,125		
	Golden State Re Ltd.		State Comp. Ins. Fund	200	US Earthquake	0,36	Modeled Loss	MMF + 375	December 2014	US MMF
	Atlas VI Capital Ltd.	**Series 2011-2 Class A**	SCOR	67	Europe Windstorm	3,30	PERILS	LIBOR + 800	April 2015	Medium-Term Notes
		Series 2011-1 Class A		125	US Hurricane/ US Earthquake	3,95	PCS	LIBOR + 1,525	January 2015	
		Series 2011-1 Class B		145		2,83		LIBOR + 1,250		
	Tramline Re Ltd.	**Series 2011-1 Class A**	Amlin AG	150	US Hurricane/ US Earthquake	3,98	PCS/ PERILS	MMF + 1,675	December 2014	US MMF
	Loma Re Ltd.	**Series 2011-2 Class A**	Argo Re	100	US Hurricane/ US Earthquake	5,12	PCS	MMF + 1,800	January 2014	US MMF

Market Factsheet

Secondary Market Spreads (Indexed)[5]

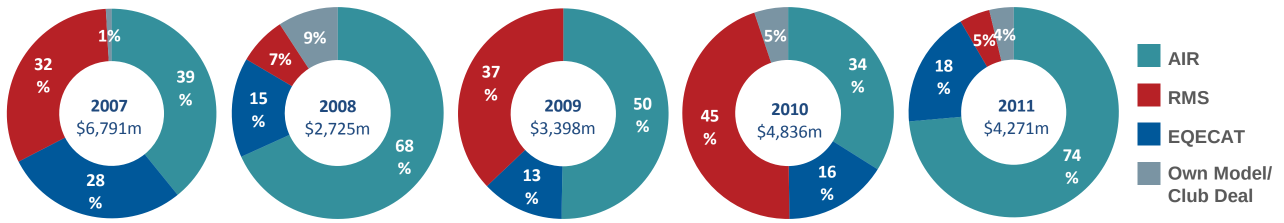


Issuances 2011 – Trigger and Peril Composition[6]

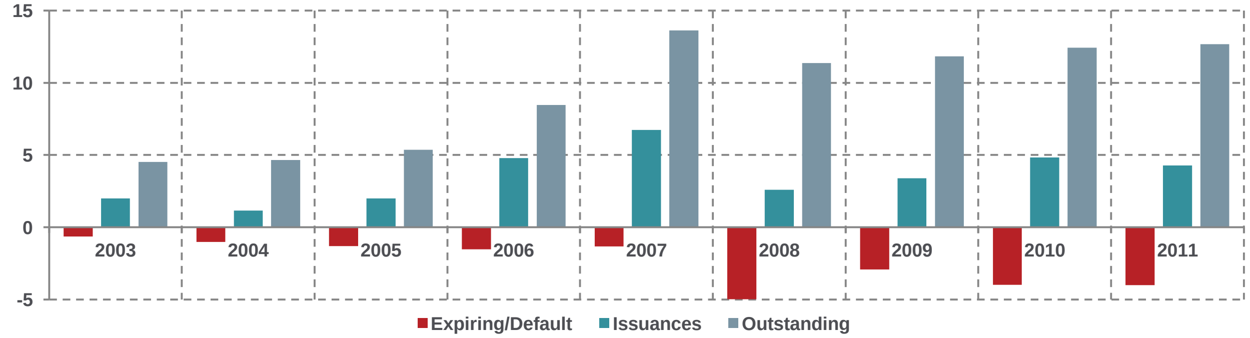


	US Wind	US Earthquake	Europe Wind	Japan Perils	Other
Issuance Volume (in $m)	2,407	793	850	164	58

Yearly Issuance Volumes split into Modeling Agencies



Non-Life ILS Market Development (in $bn)



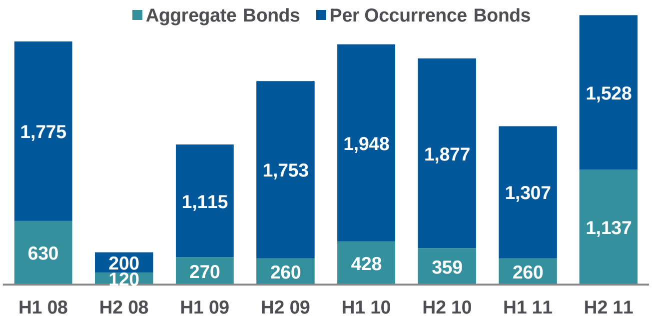
[5] Secondary Market Spreads were adjusted for Expected Losses to exclude Expected Loss-driven changes in spreads

[6] Multi-peril bonds were split into single perils according to their contribution to Expected Loss

ILS Knowledge Box: Aggregate Covers in the Cat Bond Space

Increased volume of cat bonds with aggregate structures towards the end of 2011 shows investors' comfort with frequency risks

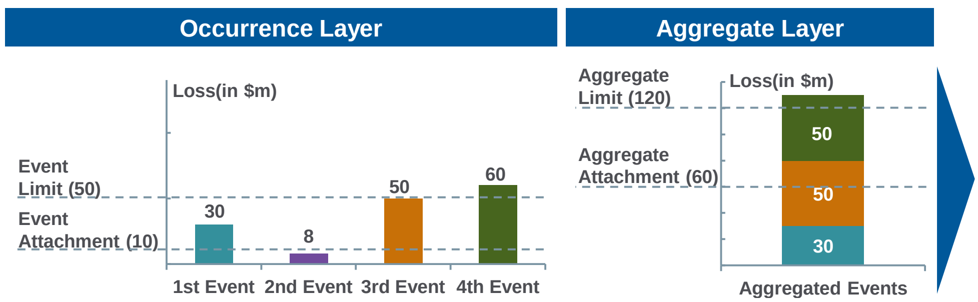
Non-Life ILS Issuances (in $m)



- Since the emergence of ILS, several sponsors have tested grounds with issuances paying out on an aggregate basis rather than per occurrence
- Over time, investors have become increasingly acquainted with the mechanics of aggregate cat bonds
- 2011 has now seen the highest issuance activity of aggregate structures in the ILS market's history, with seven tranches and a total volume of $1.14bn issued only during the year's second half
- Five of these tranches were substantially upsized by more than 100% of the originally planned volume

Aggregate structures can provide customized frequency protection within the ILS market's sweetspot

Illustrative Aggregate Structure

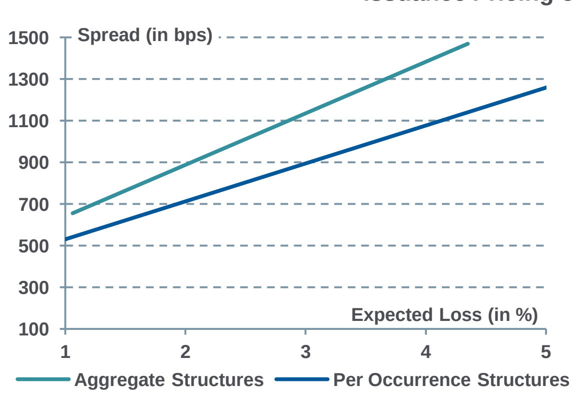


Coverage Parameters can be adjusted to achieve both effective coverage for the sponsor as well as high receptivity among investors

- Two options to include losses to the coverage from events exceeding the Event Attachment (i.e., $10m):
  - Franchise Deductible: the entire loss will be aggregated ground-up once the Event Attachment is reached
  - Excess Deductible: only the part of the loss within the Occurrence Layer ($40m xs $10m) will be aggregated
- Any loss in excess of the Event Limit ($50m in the figure at left) will be excluded from the aggregation
- Aggregate Attachment is the threshold where aggregated losses trigger a payout from the bond ($60m)
- Aggregated loss exceeding the Aggregate Limit ($120m) will not be paid

Strong buy side interest for aggregate cat bonds – although trading considerations affect pricing

Issuance Pricing of US Multi Peril Bonds in 2011



- Mark-up in pricing of aggregates due to
  - Potential of an immediate impact to the bond's value in the secondary market through a small event which merely runs into the Occurrence Layer without actually triggering the Aggregate Layer
  - Accumulation of small events may lead to a "stealth" default without sufficient forerun of information
- However, some investors also appreciate aggregates for their diversification potential, as they require at least two events to trigger and are thereby somewhat uncorrelated to per occurrence bonds with similar geographic exposure

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