Swiss Re

General Public Release

Productivity Commission Inquiry into Natural Disaster Funding Arrangements

Innovation in Parametric & Structured Solutions

SWISS RE 150 YEARS

NOVEMBER 2014

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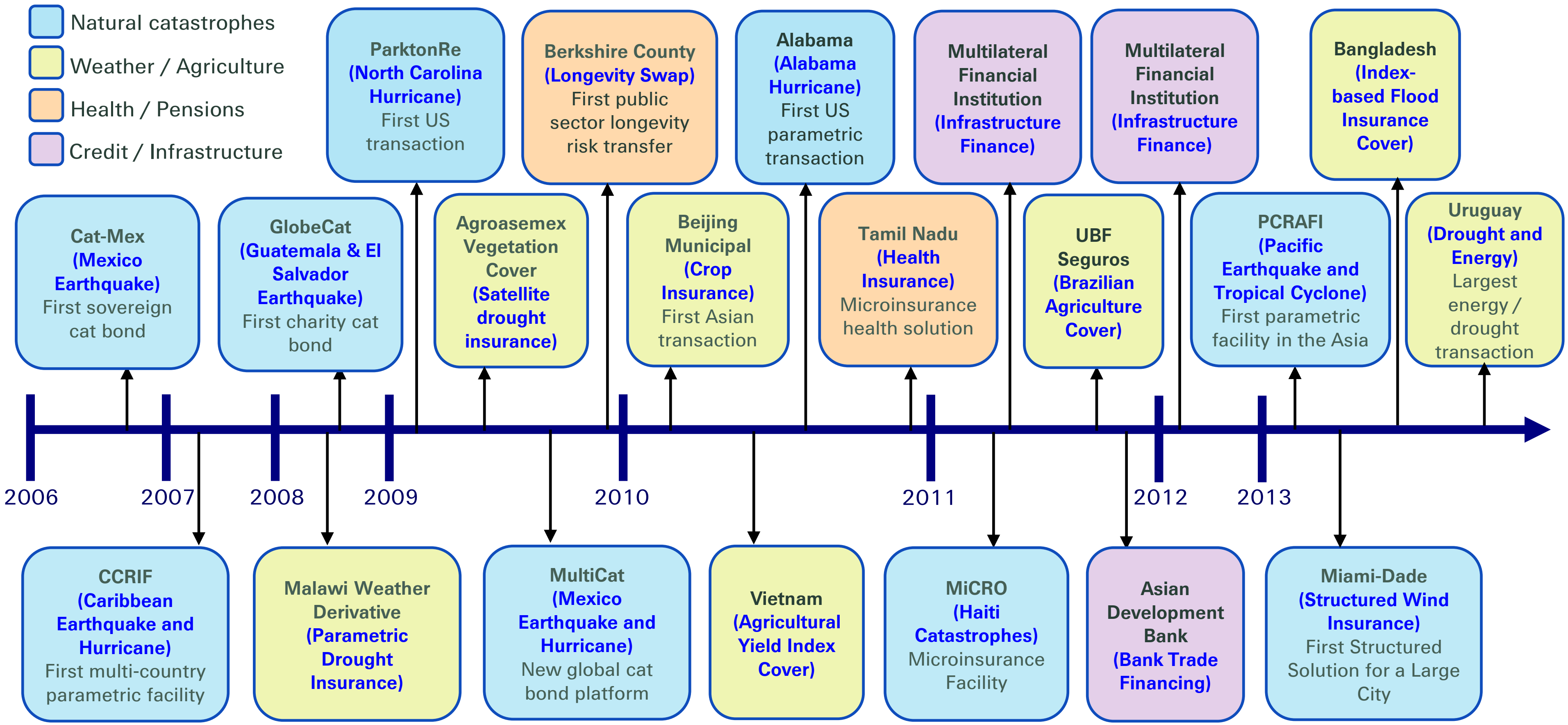
Risk transfer tools increasingly important to the public sector



Case study United States: Alabama – First parametric cover for a government in an industrialized country

Solution features

- Insured peril: Hurricane
- Payments to offset economic costs of hurricanes
- Trigger type: Disaster occurring within a defined geographic area ("box") along coast (“cat-in-the-box”)
- Trigger based on wind speed of hurricane eye as it passes through pre-determined box
- Payout in as little as two weeks
- Time horizon: July 2010 – July 2013
- First parametric catastrophe risk transfer for a government in an industrialized country

Involved parties

- Insured: State Insurance Fund of Alabama
- Swiss Re: Lead structurer and sole underwriter

Case study Asia-Pacific: Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)

Solution features

- First-of-its-kind sovereign catastrophe risk transfer in the Asia Pacific region
- The PCRAFI offers parametric earthquake (including tsunami) and tropical cyclone insurance policies to 5 pilot Pacific Island countries: Marshall Islands, Samoa, Tonga, Vanuatu and Cook Islands
- The policies provide immediate liquidity to participating governments in the aftermath of a disaster with an approximate probability of 1 in 15 years
- Insurance coverage provided to the 5 Pacific Island countries is about USD 43m
- Similarly to CCRIF, the swap payout will be triggered by the intensity of the event (modelled loss approach)
- The facility responded to event and made payment:
  - Tonga after Cyclone Ian (2014)

Involved parties

- World Bank, ADB, Japan MoF
- Derivative placed by World Bank Treasury

Case study: Miami Dade County Public Schools– Custom multi-year structured cover

Solution features

- Insured peril: Named Windstorm and associated flood
- Multi-year structured cover: USD 100m
- Covering indemnified losses from NWS to soften impact to broader school system
  - 3 year coverage
  - Term Aggregate Deductible
  - Fixed premium over term
  - No claims bonus
- Time horizon: May 2013– May 2016
- Customized multi-year structured risk transfer for major school district

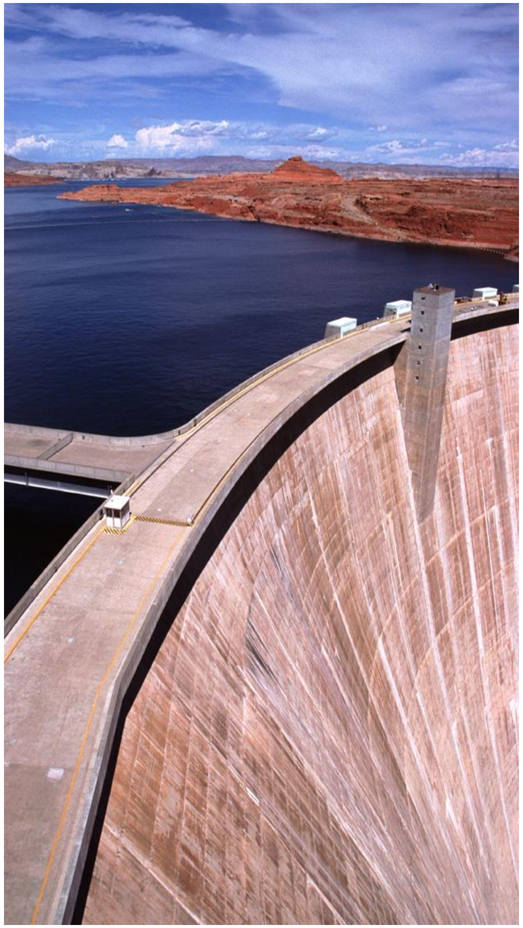
Involved parties

- Insured: Miami-Dade County Public Schools
- Swiss Re: Lead structurer and sole underwriter
- Broker: AJ Gallagher

Background information

- MDCPS is the 4th largest public school district in the country with substantial windstorm exposure.
- The school system transfers portions of its pooled risk to the insurance market to cover physical losses.
- Since 1992, MDCPS has paid ~USD 315m in premium and received only USD 3m back in claims.
- MDCPS retains a portion of its risk and is exposed to fluctuating insurance prices, particularly after major hurricanes.
- To hedge against this price volatility and residual risk, MDCPS decided to purchase a multi-year structured insurance solution which pays if a hurricane strikes and the District suffers a loss.
- Thanks to the multi-year feature, MDCPS benefits from both a long-term fixed pricing and certainty post-event.

Case Study Uruguay: Protecting Against Drought Risk



Solution features

- Insured peril: Drought
- Payments to be used to purchase energy from alternative sources when drought conditions cause lack of hydro power
- Derivative contract: between UTE, Uruguayan state-owned hydro-electric power company, and World Bank Treasury. Risk is then placed in the market
- Payment mechanics:
  - Trigger: Level of rainfall monitored at weather stations
  - Settlement: Market price of brent crude oil
- Time horizon: January 2014 – June 2015
- Transaction Size: USD 450 million

Case study Caribbean: CCRIF adds Excess Rainfall Coverage to Program

Solution features

- In July 2014, the CCRIF added a third peril to their program by offering excess rainfall insurance to their members
- 8 countries purchased the coverage that triggers when the modelled loss exceeds the defined country threshold
- Losses are determined based on 2 day rainfall totals and the country exposure values
- The program uses an enhanced version of NASA's TRMM data to model rainfall on a 1km by 1km basis
- Deductible for the CCRIF is $2.5 million and Swiss Re provides reinsurance with a limit of $32.5 million
- The solution, which increases resiliency in the face of climate change, uses technology that can be replicated globally

Involved parties

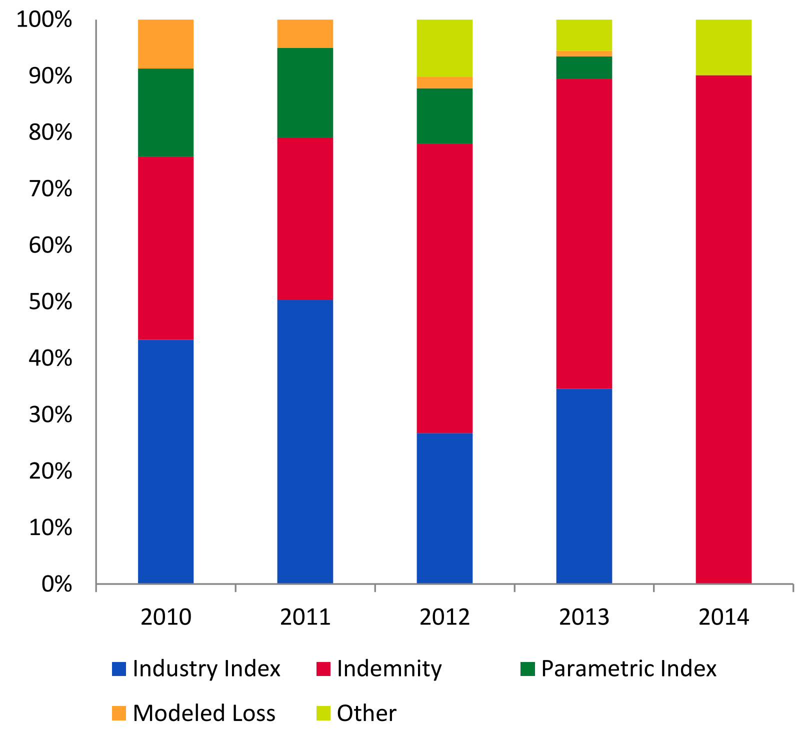
- Reinsurer: Swiss Re
- Product designed by: CCRIF, Kinanco and Swiss Re
- Countries insured: Anguilla, Barbados, Dominica, Grenada, Haiti, St. Kitts & Nevis, Saint Lucia and St. Vincent

ILS Market Update
Catastrophe Bonds Triggers Deployed

Triggers in the Cat Bond Market

- Sponsors have increasingly looked at indemnity triggers in the past year, as they look to minimize their basis risk and capitalise on market trends
- Indemnity triggered bonds now account for approximately the same outstanding notional as industry index triggered bonds
- Industry index and parametric transactions will typically price tighter than indemnity transactions, though the gap has tightened in recent times

Outstanding Catastrophe Bond Trigger Breakdown (Natural Catastrophe Bonds Only)



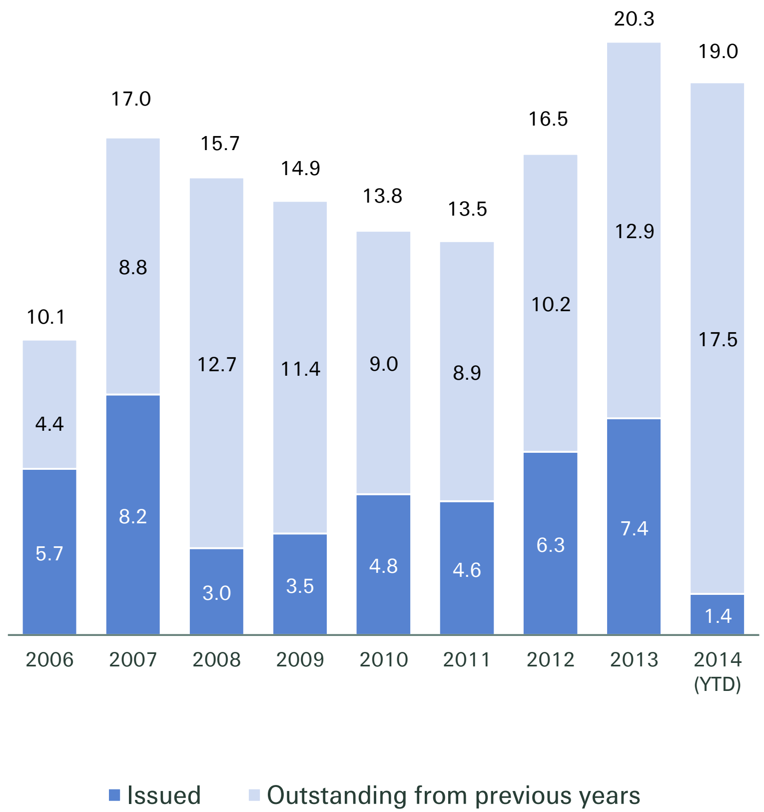
Source: Swiss Re Capital Markets; As of April 14, 2014

ILS Market Update
Issuance Trends

Market Conditions

- Repeat sponsors are driving growth while taking advantage of low spreads and structural innovations
- Investor demand continues to outweigh supply, creating a highly favorable issuance environment
- 2013 saw $7.4bn issuance and 31 transactions
  - Largest issuance year since 2007, driving the market to its largest ever size at $20.3bn
  - The market now stands at $19.0bn following a series of redemptions in January, and excluding deals still in the marketing phase

Cat Bond Issuance and Outstanding ($bn)



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