Materials Prepared For:

CANE Fall 2012 Meeting

Regarding:

Selected Issues in Cat Bonds

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PRIVATE DEALS VS. CAT BONDS: CURRENT THINKING

Protection buyers have many options

	Reinsurance	"Private Deal"		Rule 144A
	Collateralized Reinsurance		Catastrophe Bond	
	Direct or Fronted Reinsurance	Contract with Cell Company which Issues Note	Cat Bond Light	Cat Bond
Number of Investors	1 at a time	1 at a time	1 to 5	20 to 40 typical
Term	Largely single year	Largely single year	Multi-year possible	Largely multi-year
Upfront Costs and Time	Low	Relatively low	Can be significant	Signficant
Risk/Return Profile	Varies but bias to high risk / high return	Varies but bias to high risk / high return	Sweet spot is 2% EL with up to 5% EL possible	Sweet spot is 2% EL with up to 5% EL possible
Flexibility After Inception	Some	Some	Little	Little
Relationship	Transactional but strategic possible	Transactional but strategic possible	Transactional	Transactional
Comments	Higher spread but no fixed costs	Higher spread with limited fixed costs	Expense savings can prove illusory	Lower spreads in exchange for higher up front costs

CATASTROPHE BOND TRIGGERS

Cat bonds use a variety of triggers

Trigger Types

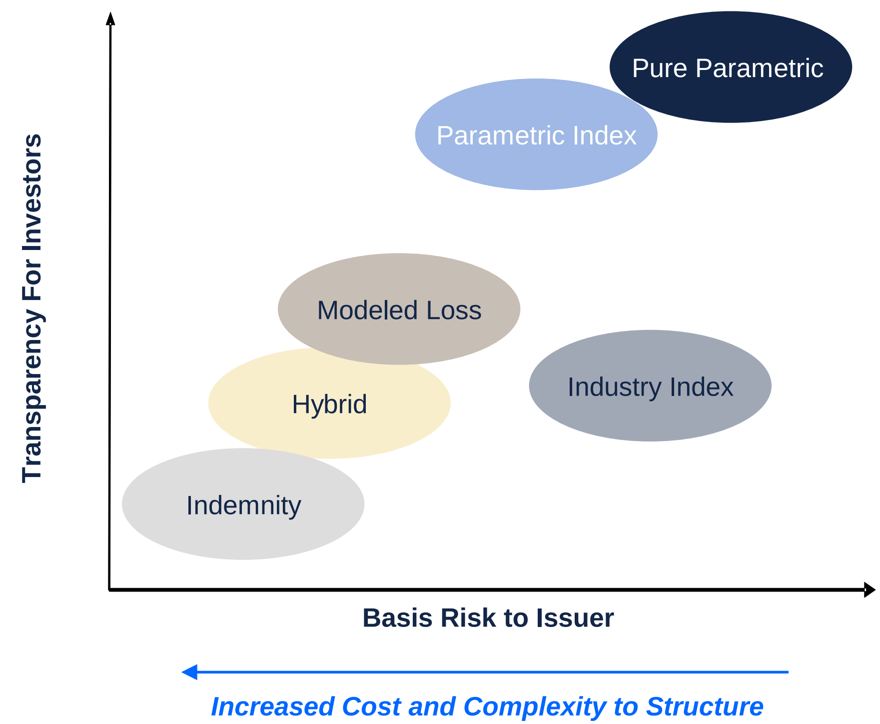
- **Indemnity:** based on the actual losses of the sponsor
- **Hybrid:** mixes elements of various triggers (e.g., MITT, ZWIL)
- **Industry Index:** based on an industry-wide loss index
  - E.g. PCS in U.S., PERILS in Europe
- **Modeled Loss:** losses determined by inputting actual physical parameters into cat model and running through escrowed portfolio
- **Pure Parametric / Parametric Index:** based on actual reported physical event parameters
  - E.g. wind speeds or earthquake magnitude

Trigger Design

- **Trigger design and basis risk analysis is an interactive process**
- **Criteria in selecting trigger include:**
  - Maximizing rating agency credit
  - Evaluating and minimizing actual basis risk
  - Maintaining flexibility to deal with portfolio changes
  - Optimize fit within the broader program
  - Enhancing transparency to attract investors

The Trade-off Between Basis Risk and Transparency

Basis risk is the risk that the cover produces an under-recovery (or over-recovery) versus actual loss experience

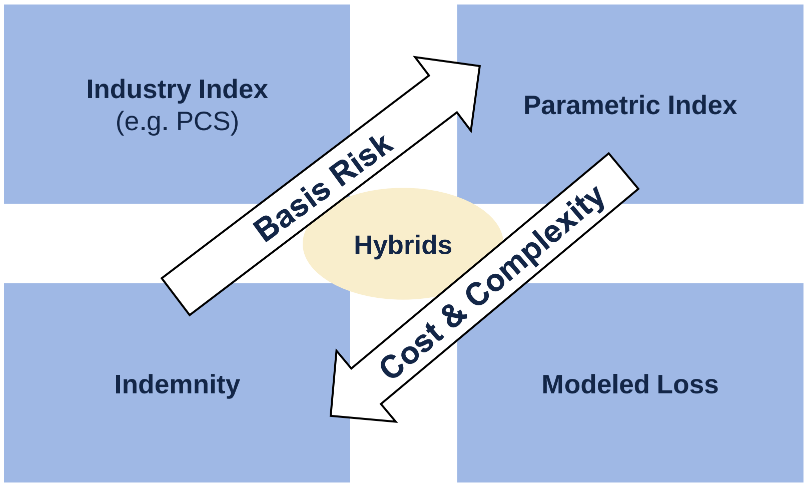


BASIS RISK AND NON-INDEMNITY TRIGGERS

- **A non-indemnity cover is triggered in part by reference to modeled results or reported industry losses**
  - Not triggered by the actual loss experience of the cedant → creates basis risk

- **Basis risk is the risk that the cover produces an under-recovery (or over-recovery) versus actual loss experience**

- **Steps for selecting optimal solution:**
  - Evaluate modeled basis risk for possible triggers
  - Evaluate actual basis risk by back testing against historical losses
    - → Consider unmodeled risks
  - Also evaluate triggers in respect of overall program



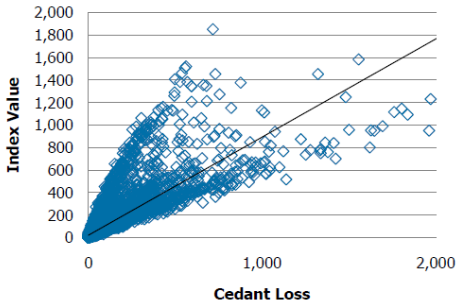
MANAGING BASIS RISK THROUGH TRIGGER DESIGN

Basis risk created by non-indemnity triggers can be minimized and managed

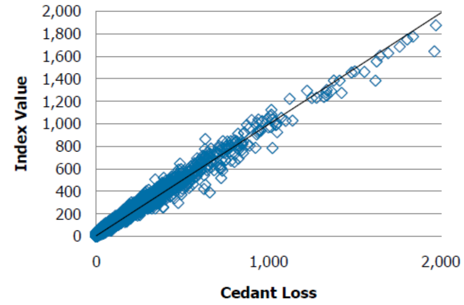
Reducing Modeled Basis Risk

- **Basis risk can be reduced by increasing the trigger resolution to more accurate, granular weightings**

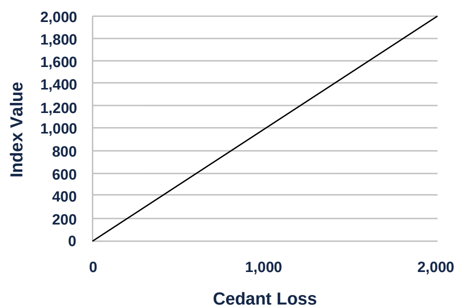
Weighted PCS
(State Share Factor)



ZWIL
(Regional Share Hybrid)



Modeled Loss



Solutions For Residual Basis Risk

Minimizing modeled basis risk will not remove it entirely, but the residual basis risk can be managed

- **Residual basis risk can be retained**
  - May have implications for regulators and ratings agencies, and may not fit with Company's own risk appetite
  - The trigger can be adjusted to bias towards over-recovery to reduce negative basis risk
- **Residual basis risk can be wrapped by reinsurers participating elsewhere on the program**
  - Likely to be less cost effective as reinsurers will price for their basis risk exposure

GOLDEN STATE RE SERIES 2011-1 OVERVIEW

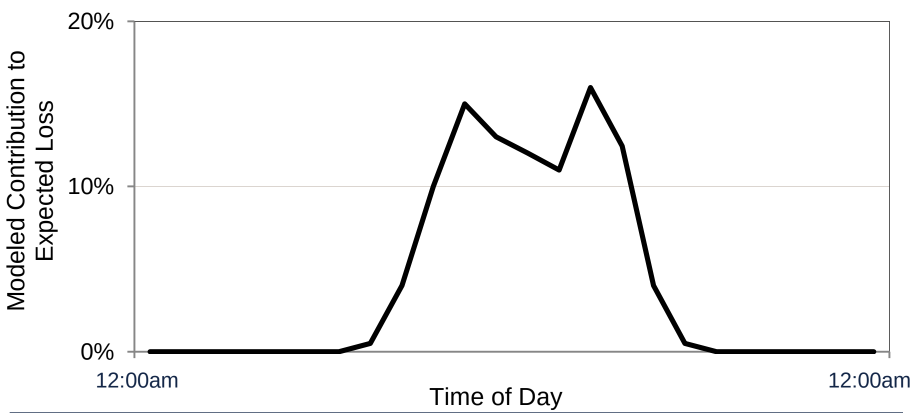
First catastrophe bond issued exclusively to protect a portfolio of workers' compensation risks

Summary	
Issuer:	Golden State Re Ltd.
Ceding Insurer:	State Compensation Insurance Fund
Structuring Agent & Bookrunner	Willis Capital Markets & Advisory
Issuance Date:	December 8, 2011
Scheduled Redemption:	January 8, 2015
Original Principal:	$200 million
Stated Coupon:	TMMF Yield + 375 bps
Expected Loss:	0.36%
Rating (S&P):	BB+ sf
Perils / Index:	U.S. Earthquake (Shake Only)
Trigger(s):	Modeled Loss, Per Occurrence
Extension Period:	1 Month Increments (6 month max)
Collateral:	Treasury Money Market Funds
Model:	RMS U.S. Earthquake Casualty Model

Commentary

- **Sponsored by the State Compensation Insurance Fund ("SCIF")**
  - Largest provider of monoline workers' compensation in California
  - First time SCIF has sponsored a catastrophe bond
- **Multi-year protection against comp. claims resulting from U.S. EQ**
  - Covers losses from ground shaking activity only
  - Modeled loss trigger allows for rapid post-event payout
- **99.99% of exposures are in California**
  - Majority of exposures are concentrated in southern counties
    - LA, San Bernandino, Ventura and Orange County
- **~90% of modeled contribution to EL are from EQ's of 6.6 – 8.0 Mw**

Illustrative Modeled Contribution by Time of Day for Weekdays



The modeled contribution to expected loss for weekend days is 0%

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