

# GC SECURITIES

CASACT Conference

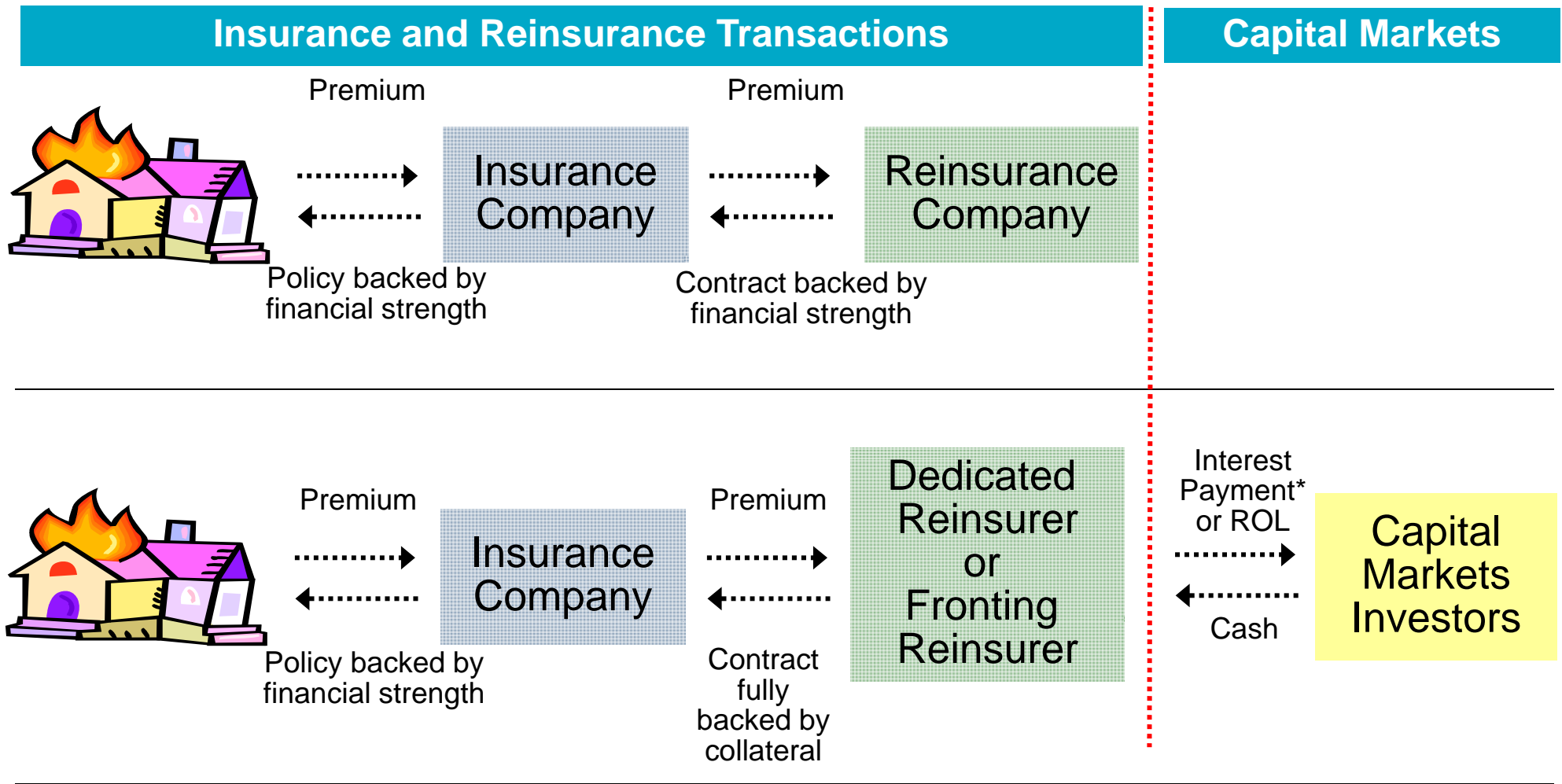
*Current Developments in the Catastrophe Bond /  
ILS Space*

October 4, 2012



# Introduction

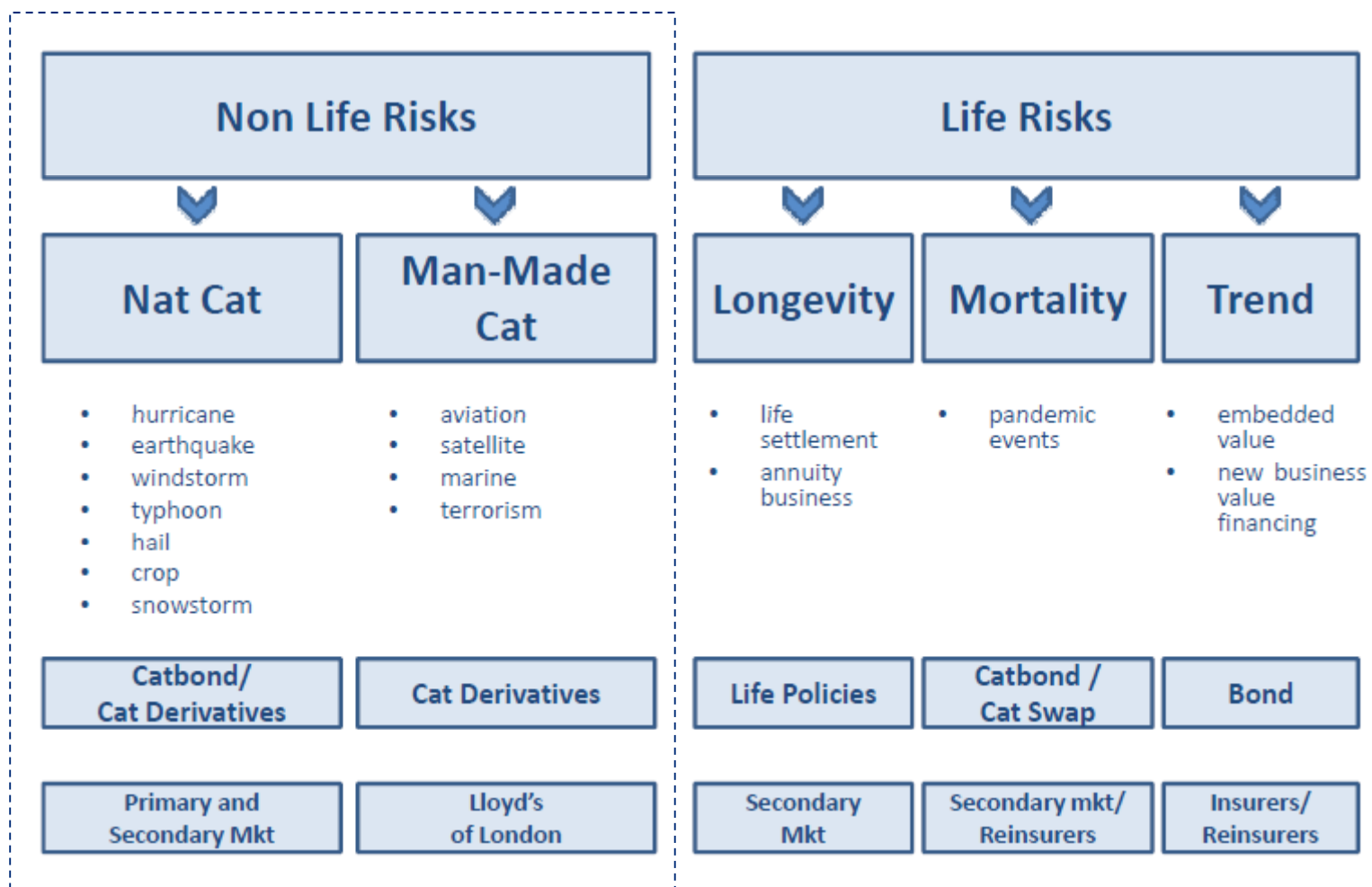
## Capital Markets-Based Risk Transfer Protection vs. (Re)insurance



\* Based on Premium payment (plus investment earnings on collateral)

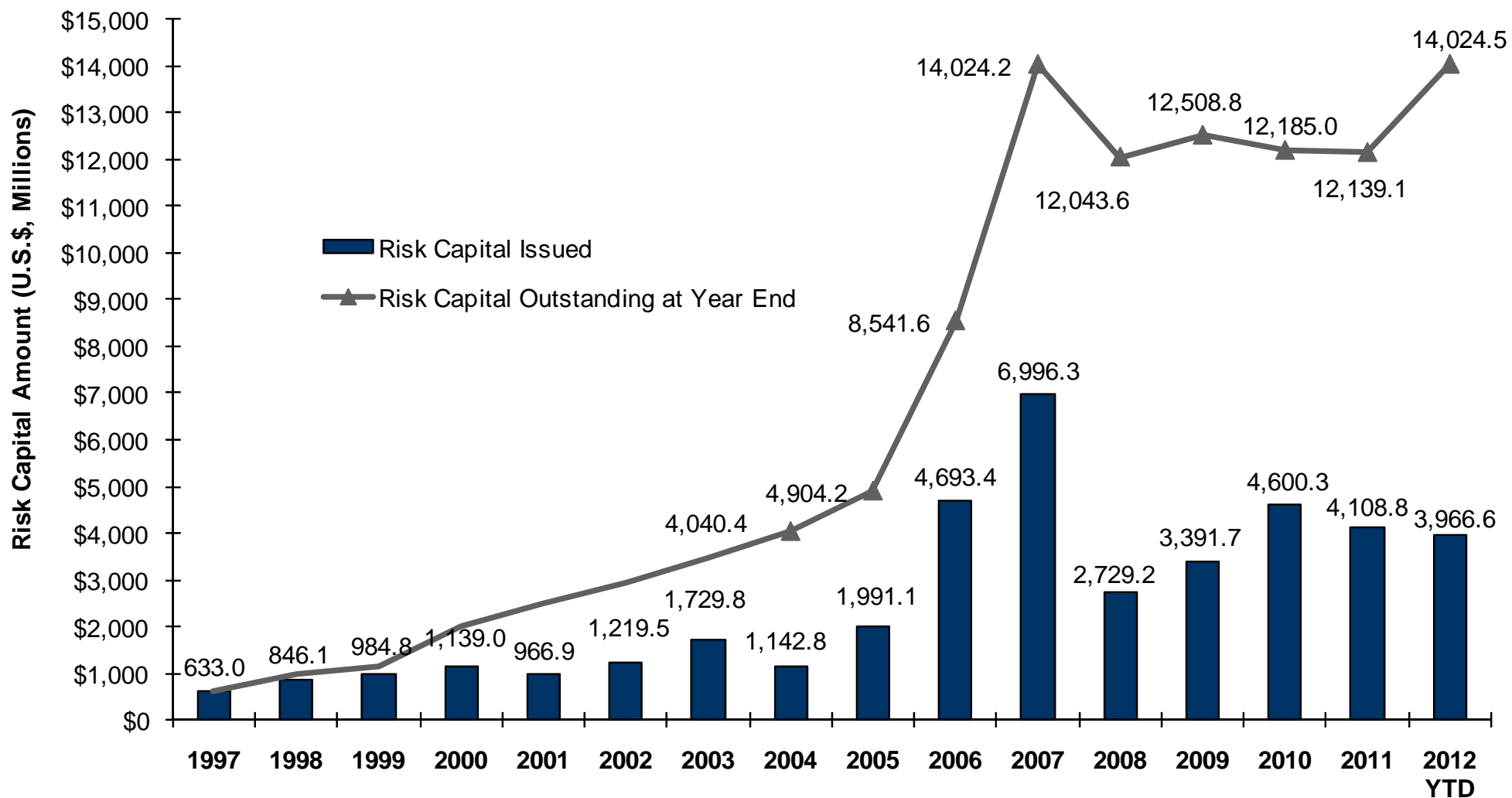
# Introduction

## Summary of Solutions Supporting Catastrophe Risk



# Introduction

## State of the P&C Catastrophe Bond Market



Source: GC Securities Proprietary Database, as of Oct 4, 2012

(1) Excludes private transactions

(2) 4Q11 includes \$200M of two Mariah tranches that fully paid out as a result of loss events

## Introduction

### Typical Cat Bond Features

#### Typical Cat Bond Features

- Qualified Institutional Investors (Rule 144A or Private Placements)
- Annual expected losses between 0.2% and 8% (EL around 1-2% is most frequent)
- Notional limits between \$50 million and \$1 billion
- 1- to 5-year tenor
- Quantifiable and observable risk (modeled)
- Most efficient for peak perils
- Separation of roles: Risk analysis and rating completed by third parties

#### Sponsor Motivations

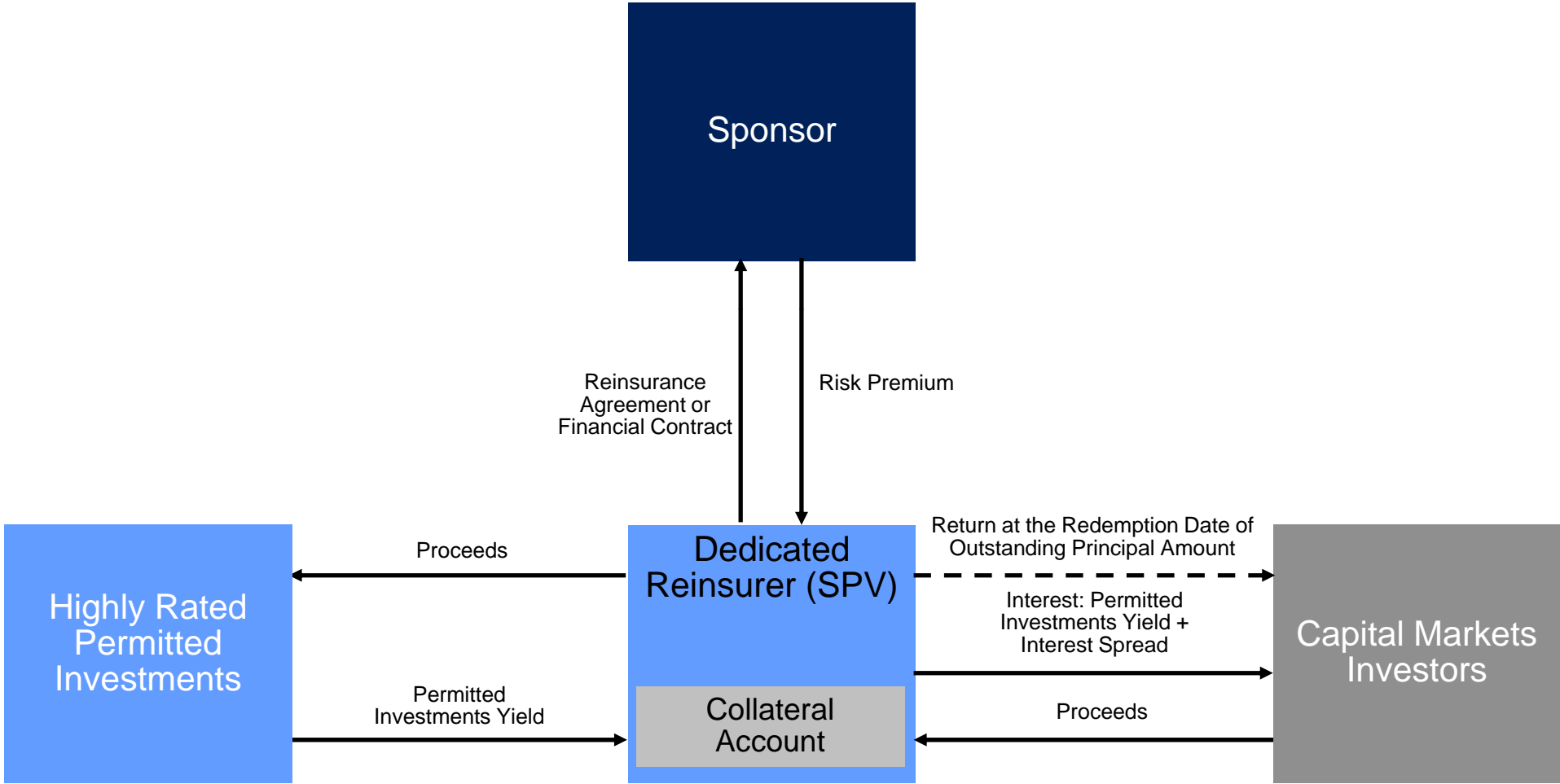
- Full collateralization
- Multi-year fixed pricing
- Diversification of risk capital source
  - Limit risks of capacity constraints and price volatility in the traditional reinsurance market
- Leverage reinsurance market by demonstrating access to alternative capacity source

#### Investor Motivations

- Source of diversification in an investment portfolio
- Potentially attractive investment returns
- Ability to further diversify within sector
- Depending on type of execution, independent third party risk analysis may available

# Introduction

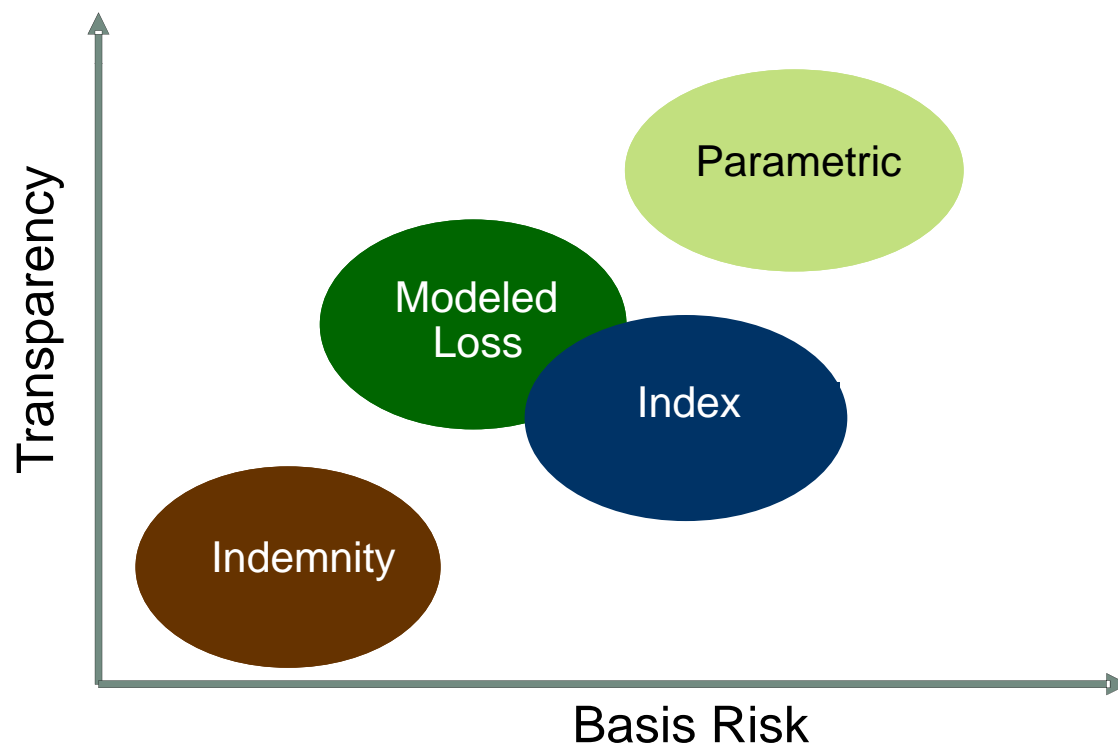
## General Structural Schematic (Catastrophe Bond)



## Introduction

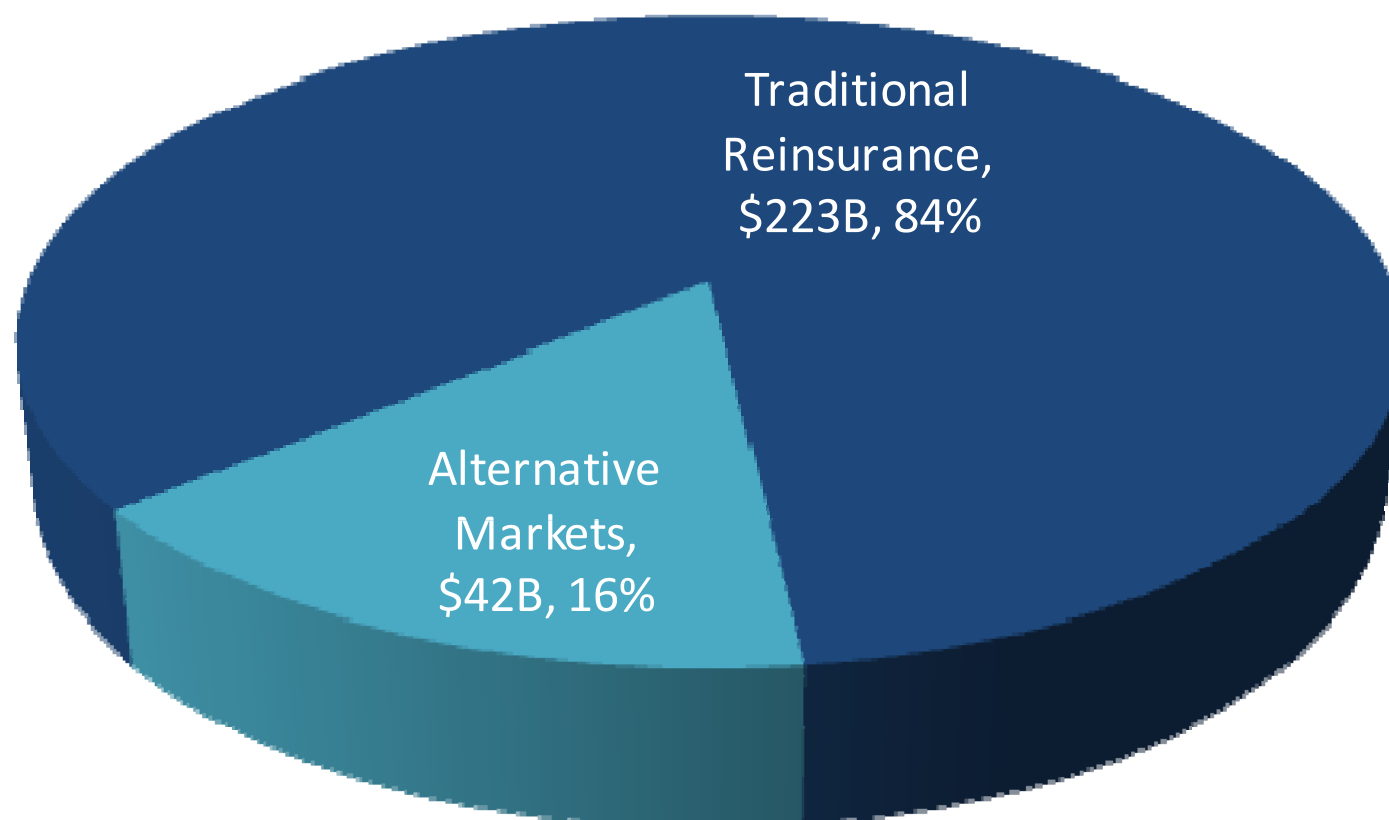
### Major Cat Bond Trigger Types

- **Indemnity** – Triggered by actual loss of sponsor
- **Index** – Triggered by insured damaged for entire industry
- **Parametric** – Triggered by event parameters
- **Modeled Loss** – Triggered by modeled results of sponsor portfolio



## Introduction

### Estimated Composition of Property Catastrophe Limits Outstanding

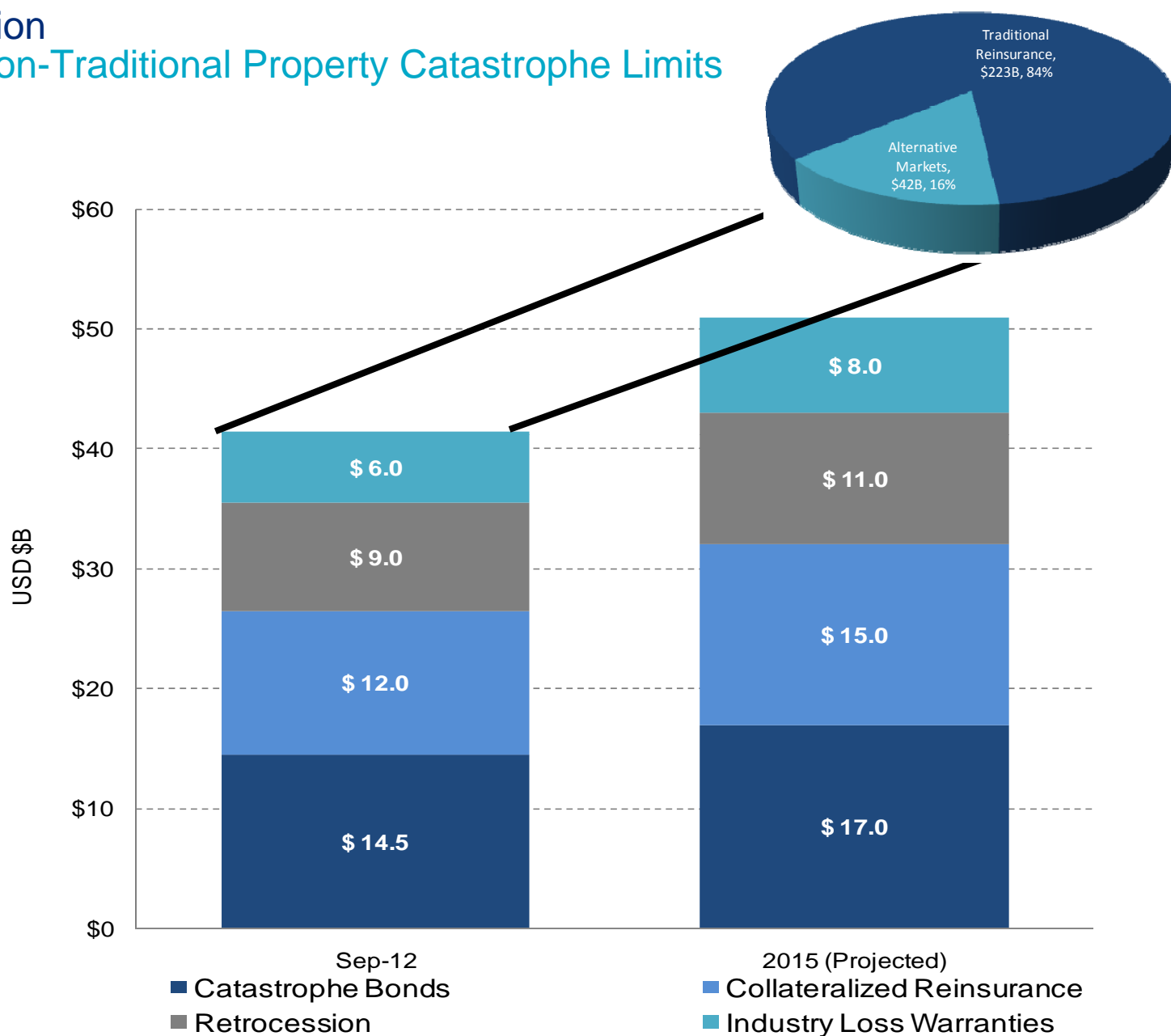


Source: GC Securities Proprietary Database (estimates only), Swiss Re sigma and Standard & Poor's, Business Insurance.



# Introduction

## Global Non-Traditional Property Catastrophe Limits



Source: GC Securities Proprietary Database and Guy Carpenter & Company LLC. Estimates only.

# Introduction

## General Structure Schematic (Collateralized Reinsurance)

### Collateral Option #1 – Trust Account

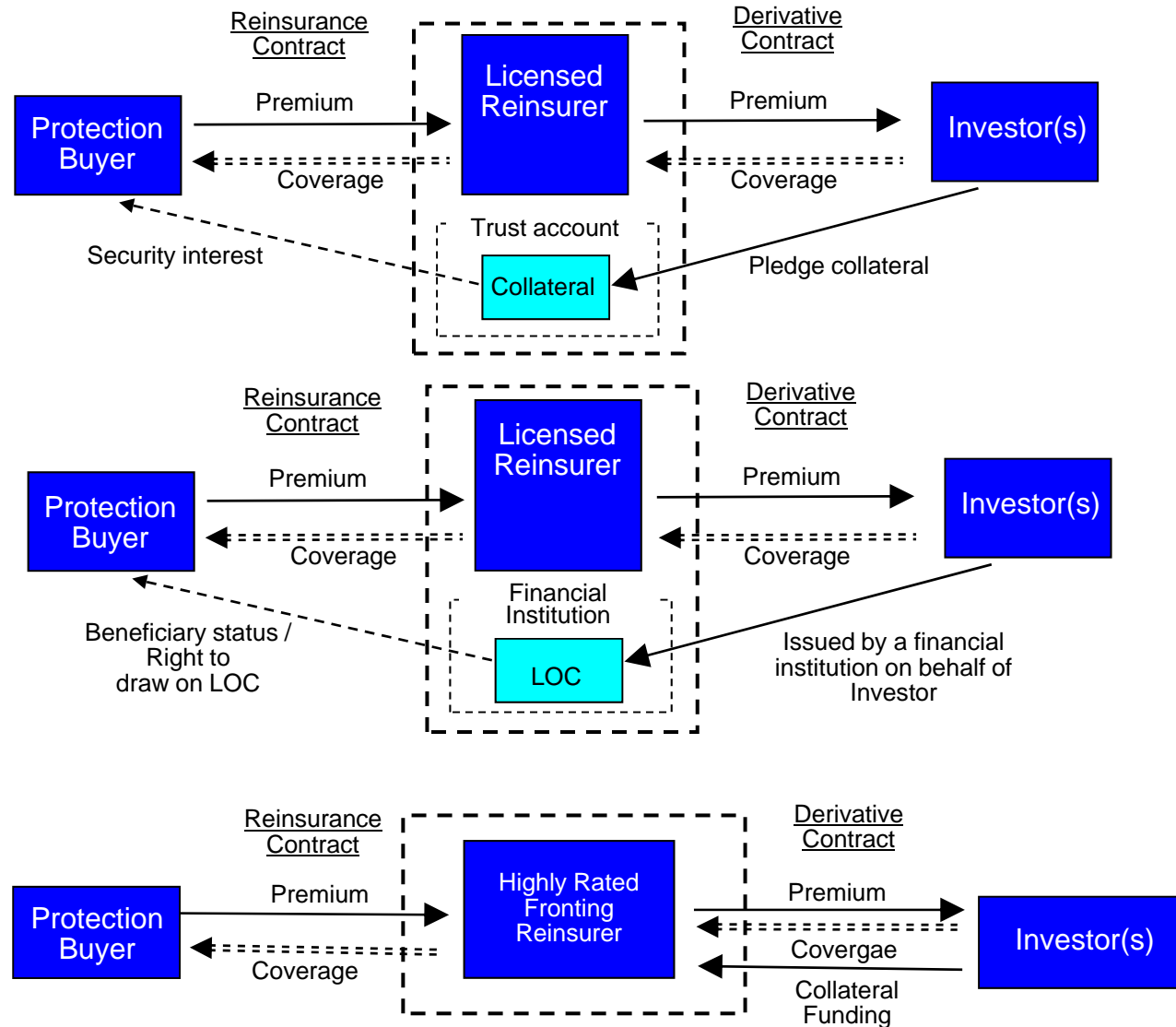
Reinsurer's obligation is secured by permitted assets that are held in a collateral account whose release is governed by a trust agreement

### Collateral Option #2 – Letter of Credit

Reinsurer's obligation is secured by a Letter of Credit issued by a financial institution mutually agreed upon by protection buyer and the investor.

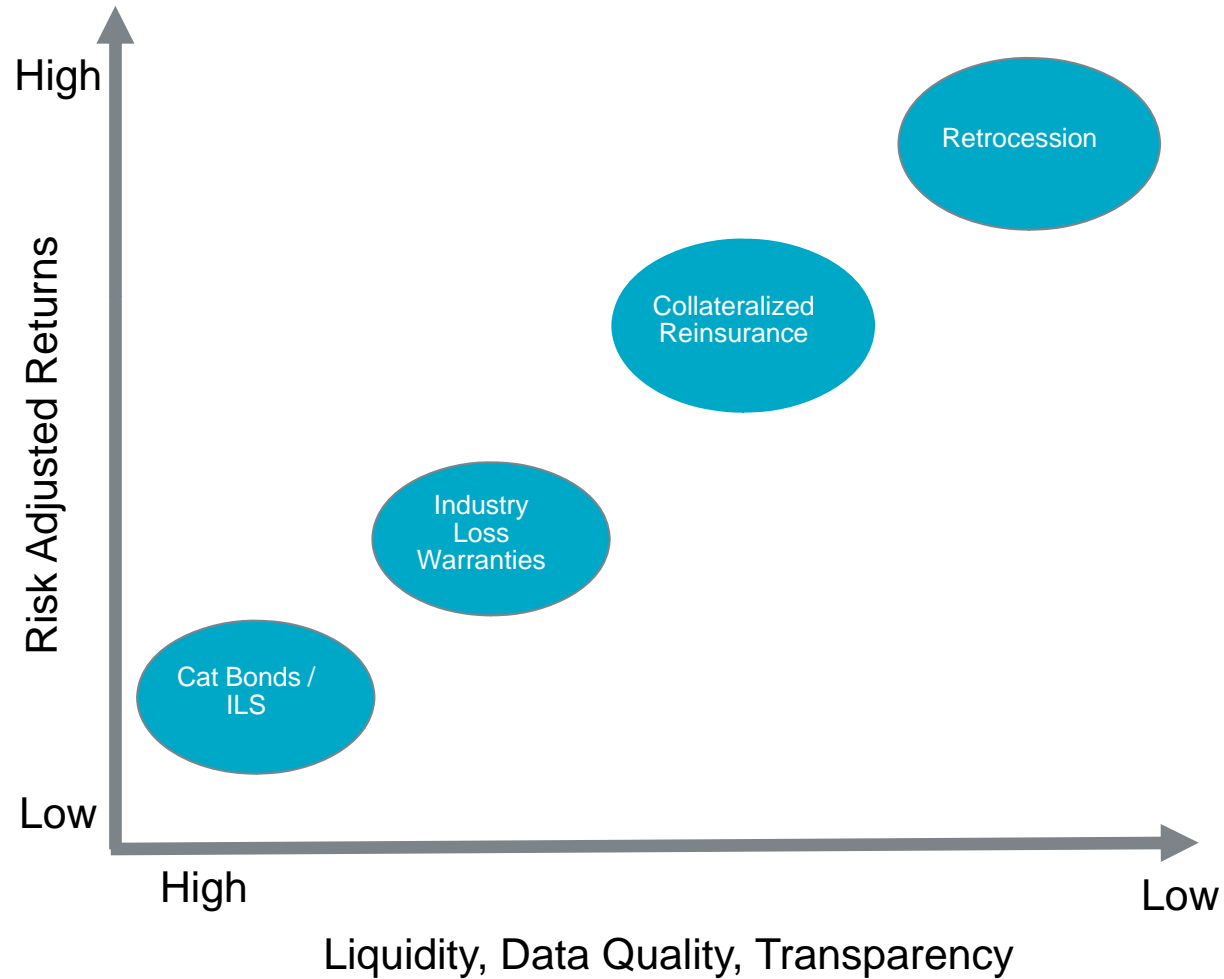
### Structural Option #3 – Highly Rated Reinsurer

Protection buyer faces a highly rated reinsurer. Reinsurer's obligation is secured by its credit rating, not by an LOC or collateral account.



## Introduction

### Risk Adjusted Returns vs. Liquidity and Transparency



## Introduction

### Growth of Non Traditional Reinsurance

**Supported by market trends...**

Product Innovation

Diversification

Regulatory Developments

Counterparty Risk

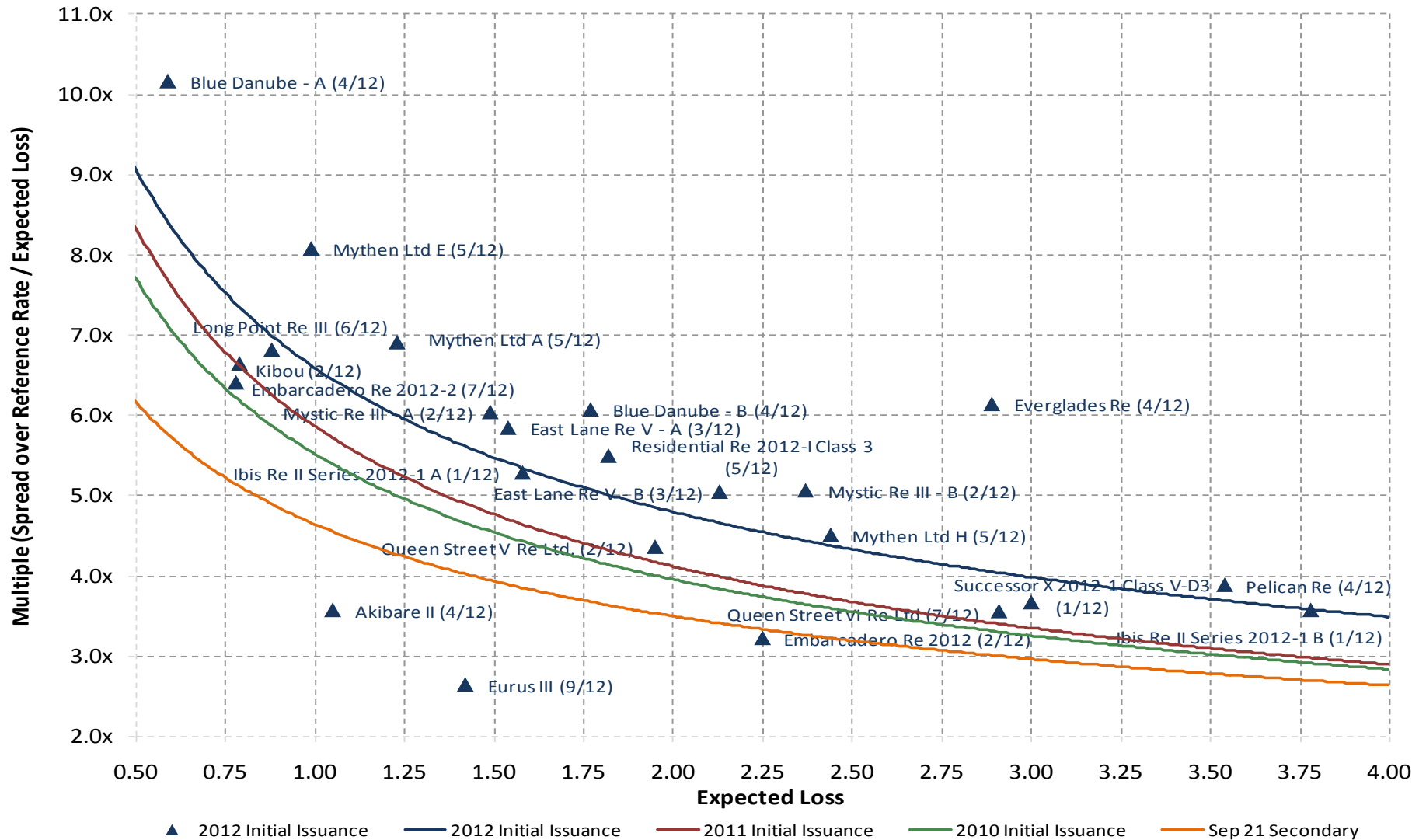
Catastrophe Models

Balance Sheet Management

**What about pricing?**

# Introduction

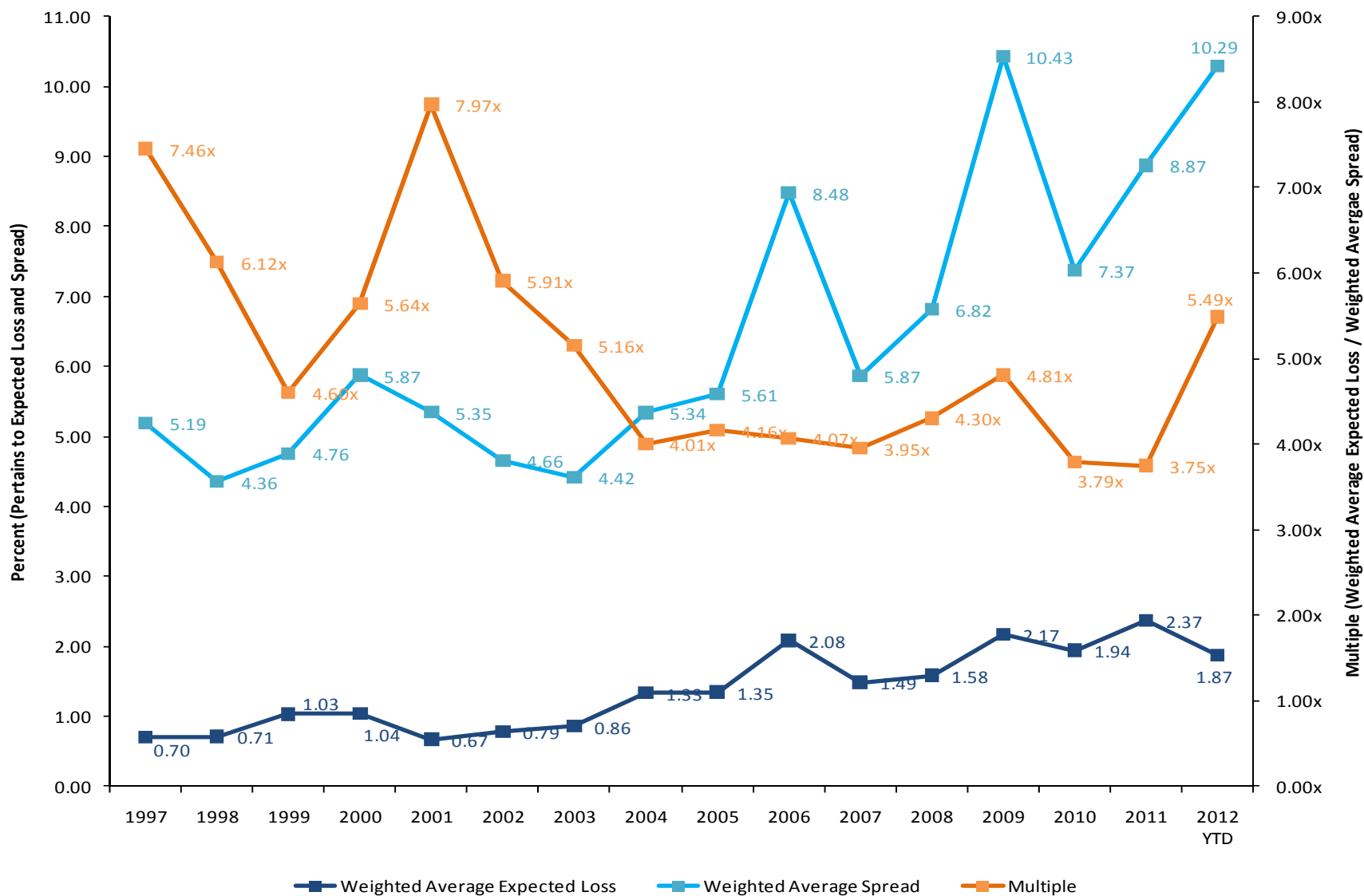
## 2010-2012 YTD Catastrophe Bond Pricing (Multiple vs. EL)



Source: GC Securities Proprietary Database, 2012; Secondary market data

# Introduction

## Market Risk / Return Levels (1997 through 2012 YTD)



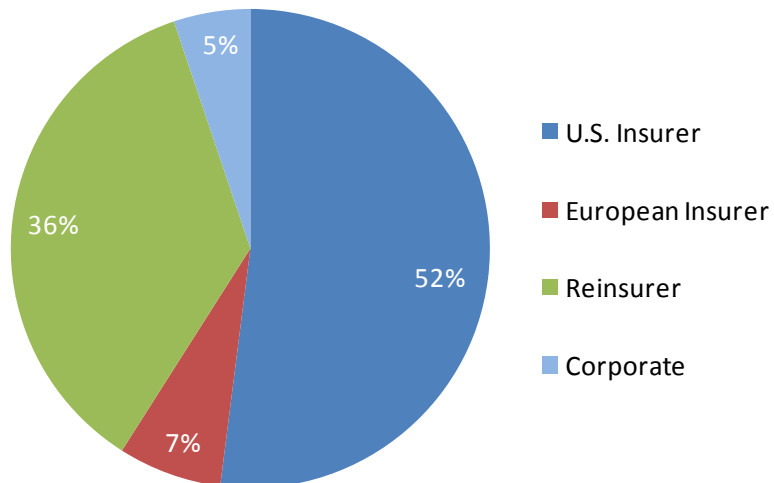
Source: GC Securities Proprietary Database, 2012

# Introduction

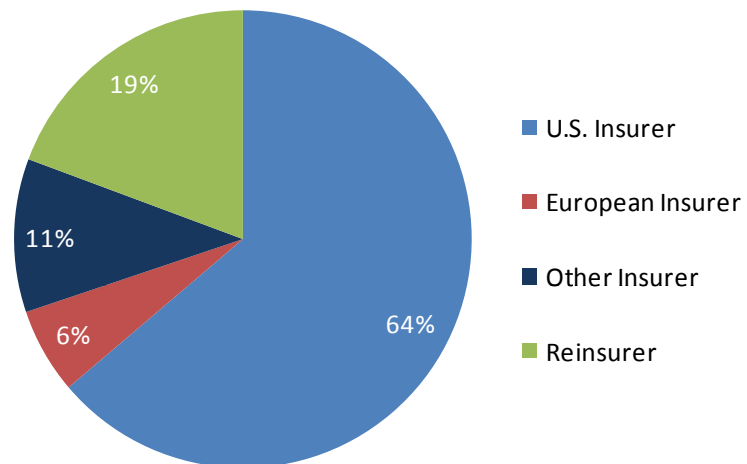
## 2011 – 2012 YTD Issuance Statistics

### Sponsor Type (by risk principal)

2011

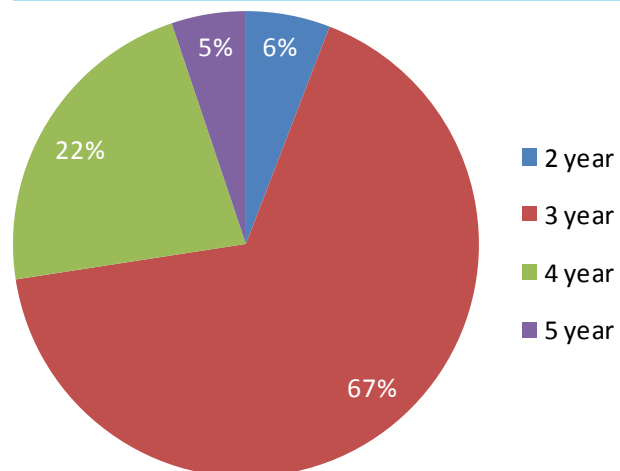


2012 YTD

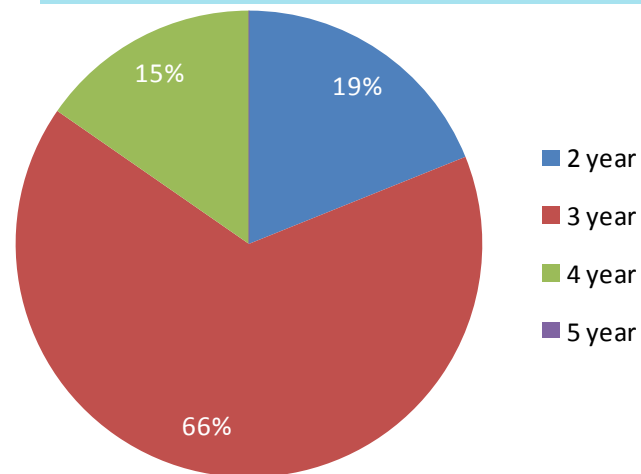


### Bond Tenor (by risk principal)

2011



2012 YTD



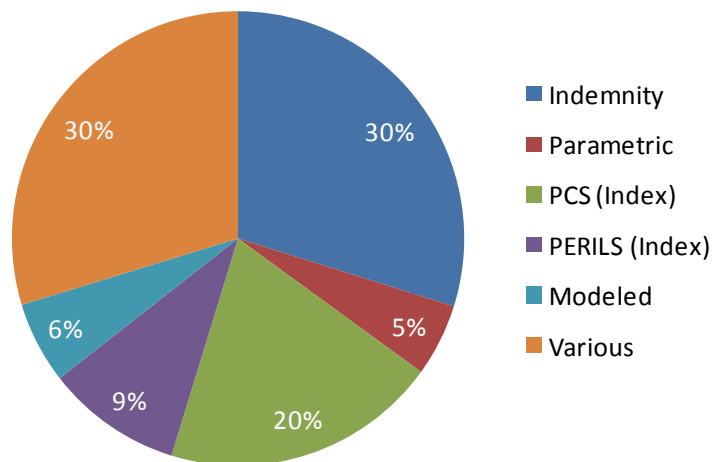
Source: GC Securities Proprietary Database, 2012

# Introduction

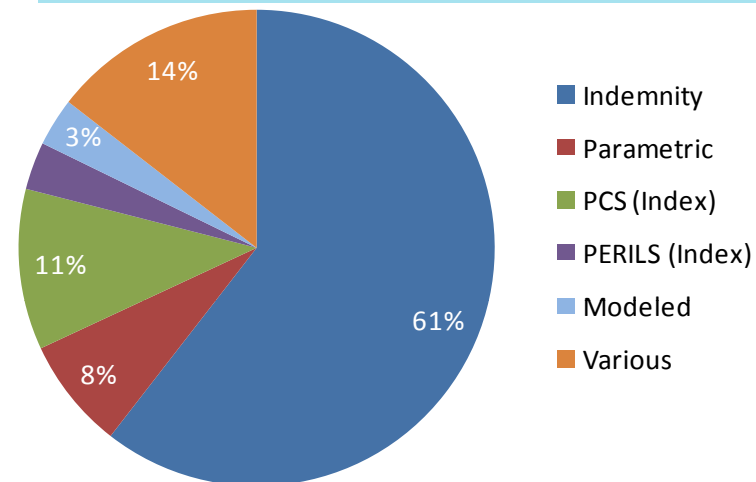
## 2011 – 2012 YTD Issuance Statistics

### Trigger Type (by risk principal)

2011

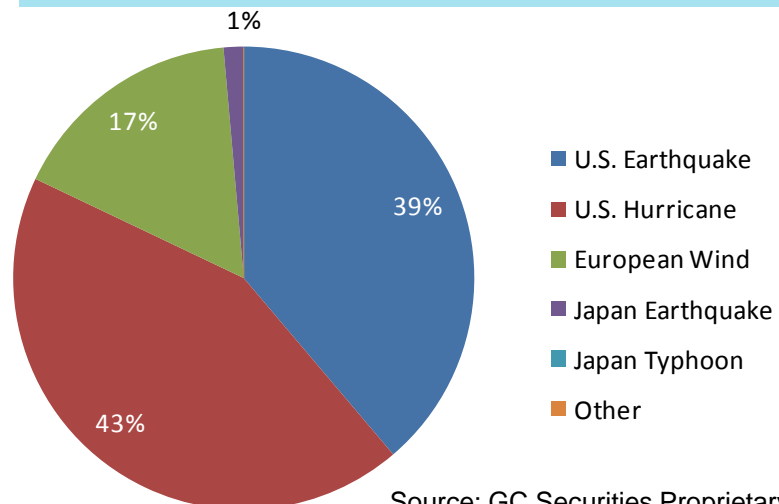


2012 YTD

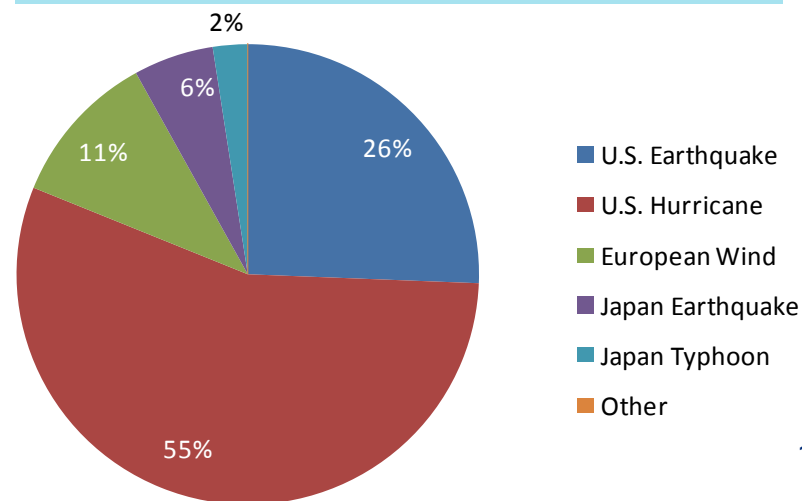


### Peril Type (by risk principal)

2011



2012 YTD

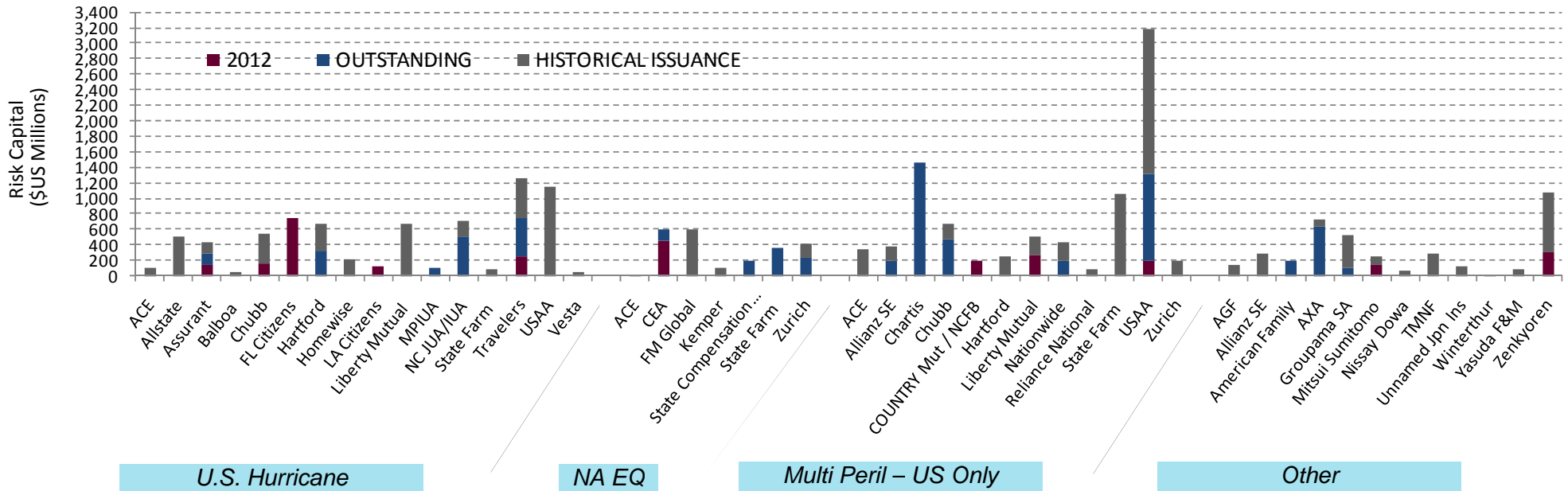


Source: GC Securities Proprietary Database, 2012

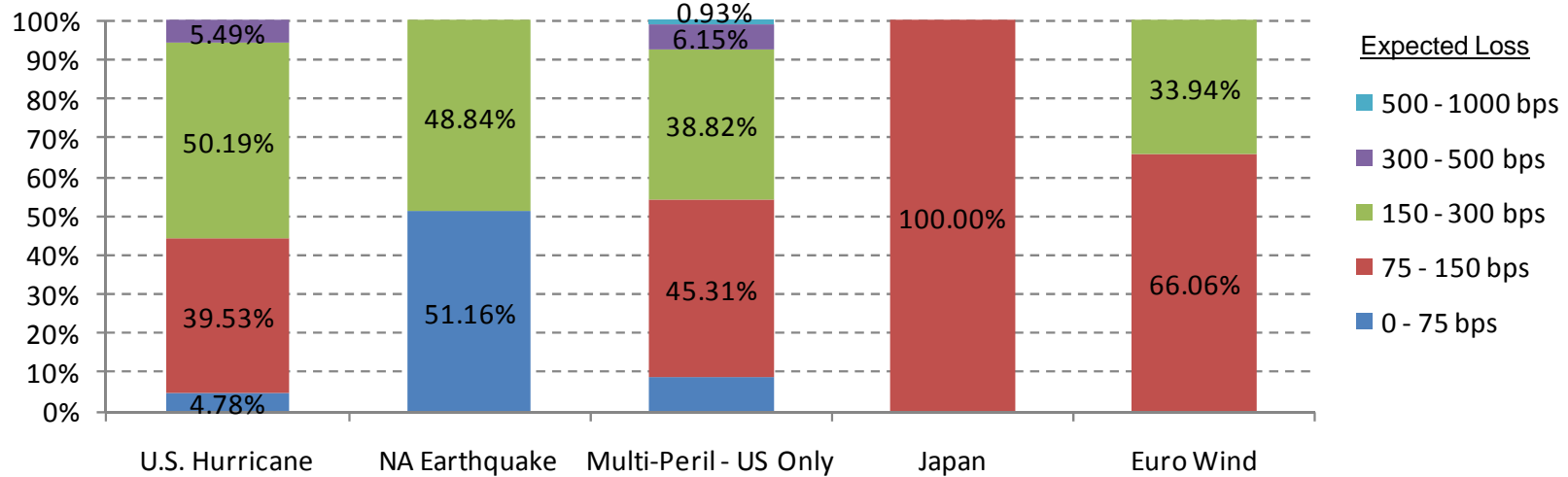


# Introduction

## Representative Primary Insurers Using the Catastrophe Bond Market



### Risk Profile of Risk Capital Outstanding by Peril for Insurers

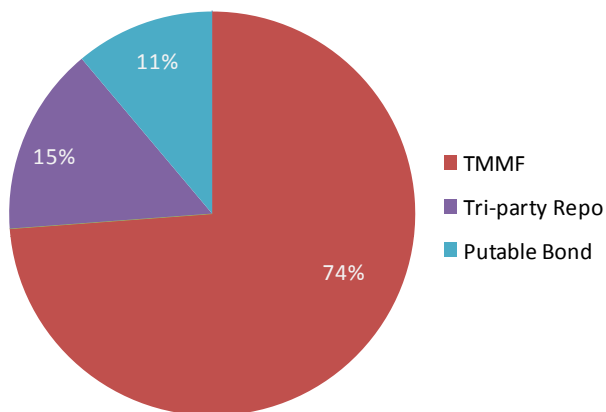


# Introduction

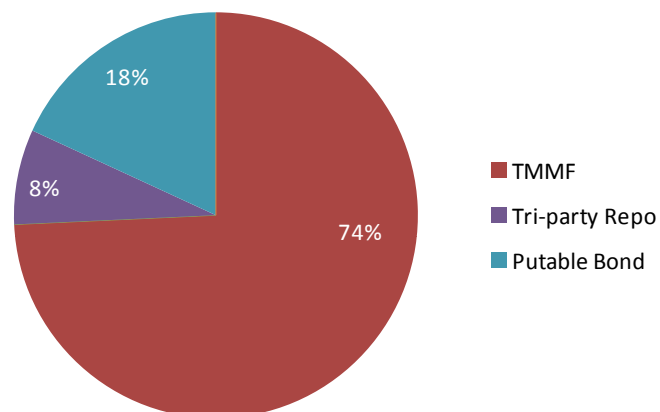
## Summary of Solutions Supporting Cat Bond Limit

Investors prefer a wider selection of collateral solutions / providers to avoid concentrations;  
Use of U.S. Treasury Money Market Funds has been most prevalent since 2009

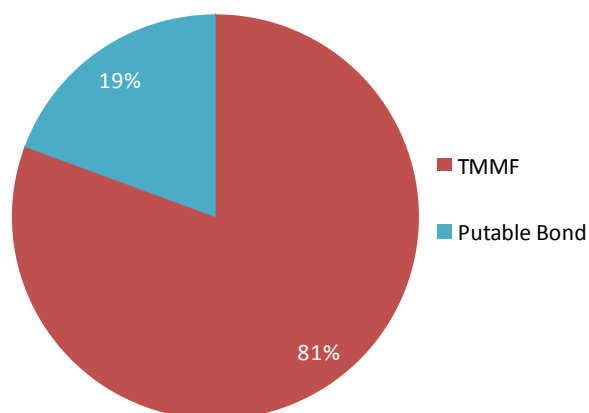
Collateral Solutions in 2010 (based on Risk Capital Issued)



Collateral Solutions in 2011 (based on Risk Capital Issued)

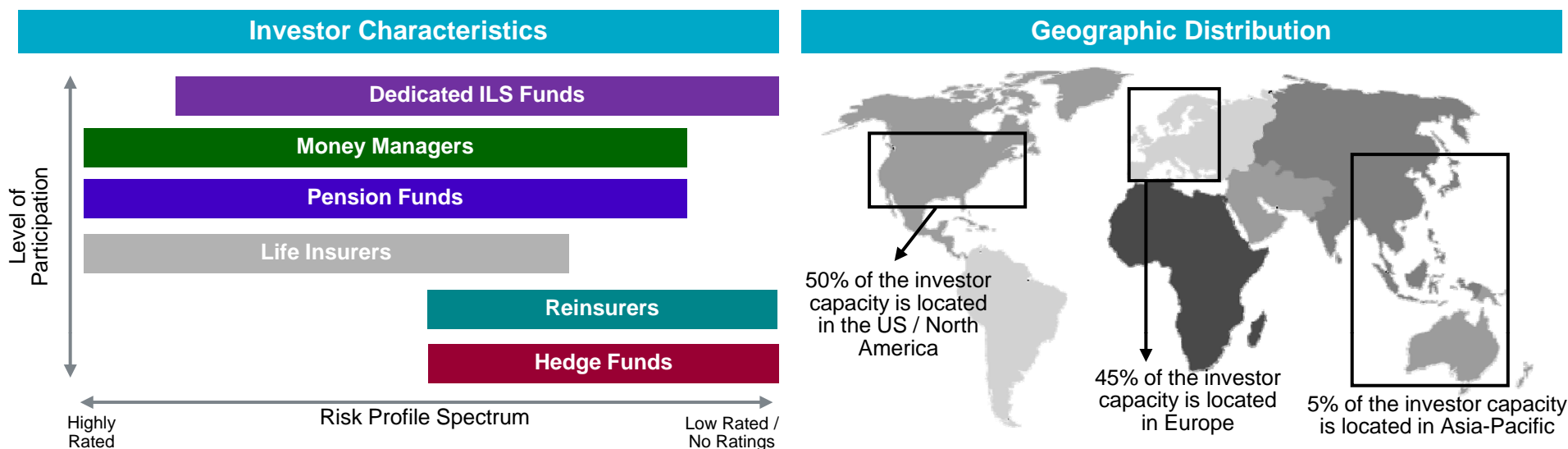


Collateral Solutions in 2012 YTD (based on Risk Capital Issued)



# Introduction

## State of the ILS Investor Base

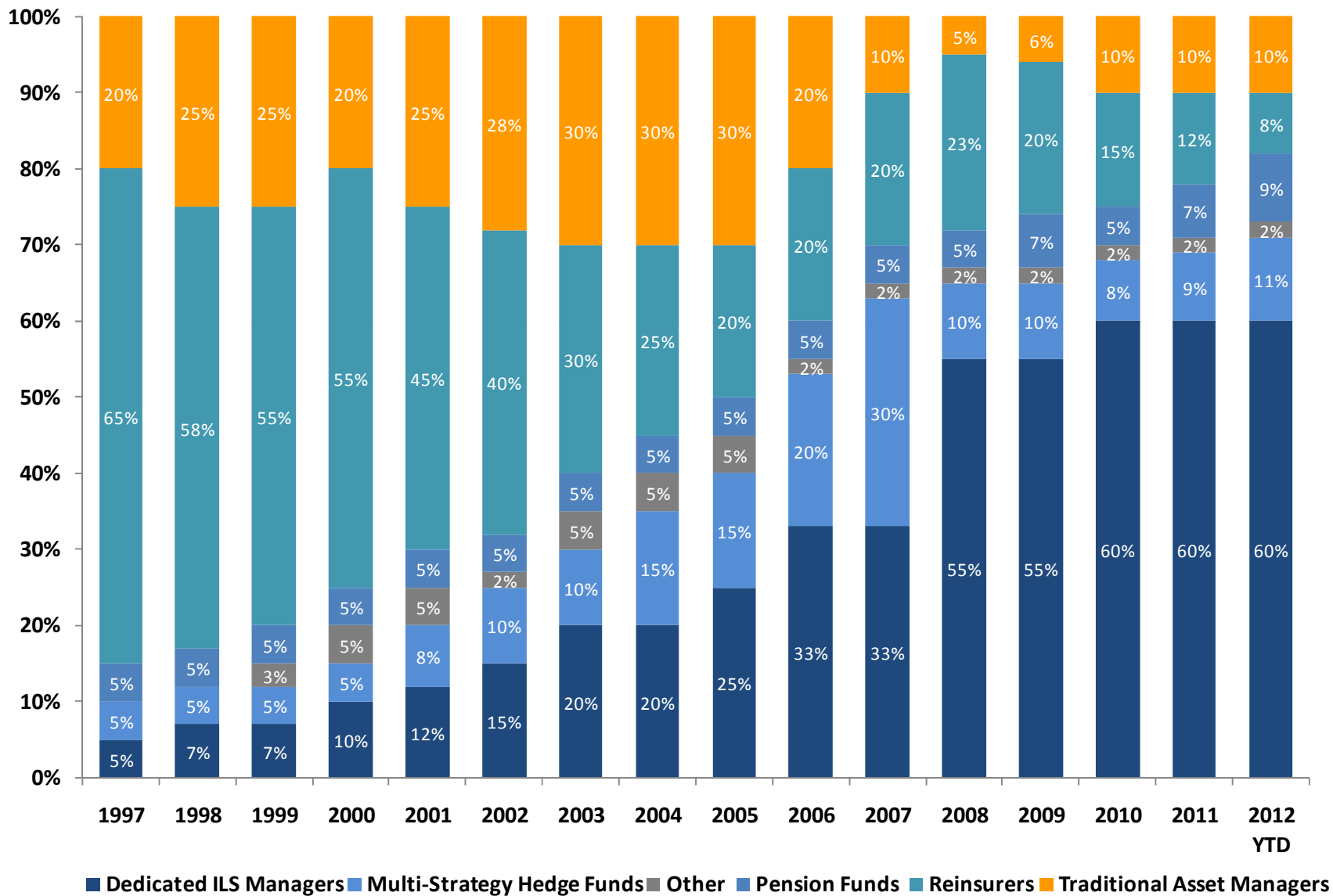


	Dedicated ILS Funds	Money Managers	Pension Funds	Life Insurers	Reinsurers	Hedge Funds
Description	<ul style="list-style-type: none"> <li>• Have become more significant in aggregate</li> <li>• Must invest in this sector</li> <li>• Generally prefer single peril</li> <li>• Interested in higher coupon bonds</li> </ul>	<ul style="list-style-type: none"> <li>• Motivation is relative value / uncorrelated diversification</li> <li>• Some care only about spread/E(L) ratio; others look at portfolio effect</li> <li>• Some prefer BB- or higher rated tranches only</li> <li>• Liquidity can be important for multi-year deals</li> </ul>	<ul style="list-style-type: none"> <li>• Can be allocated from fixed income portfolios or alternative asset bucket</li> <li>• Fixed income allocation tends to be looking for higher rated paper</li> <li>• Alternative asset funds can play in high risk layers</li> <li>• Direct investors as well as through dedicated ILS funds</li> </ul>	<ul style="list-style-type: none"> <li>• Spread buyers; generally prefer multi vs. single buyers for this reason</li> <li>• Motivation is uncorrelated diversification / attractive risk versus return profile</li> <li>• Buy and hold investors looking to receive "liquidity premium"</li> <li>• Prefer BB- or higher rated tranches</li> </ul>	<ul style="list-style-type: none"> <li>• Current participation has recently increased</li> <li>• Less stable capacity source, opportunistic funds</li> </ul>	<ul style="list-style-type: none"> <li>• Current participation substantially reduced due to financial crisis</li> <li>• Least stable capacity source, opportunistic funds</li> <li>• Prefer higher E(L) structures</li> <li>• Liquidity can be important</li> </ul>

Source: Based on GC Securities Transaction Activity and Market Intelligence. Estimates Only.

# Introduction

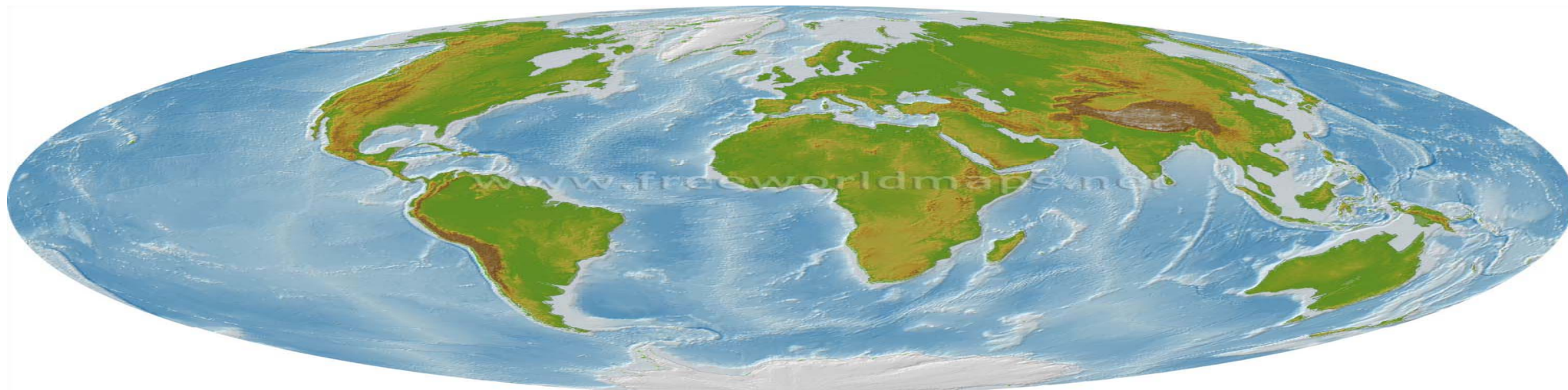
## Investor Base Composition – Historical View



Source: Based on GC Securities Transaction Activity and Market Intelligence. Estimates Only.

# Introduction

## Characterization of Activity / Risk Appetite by Region : Stable Money Inflows



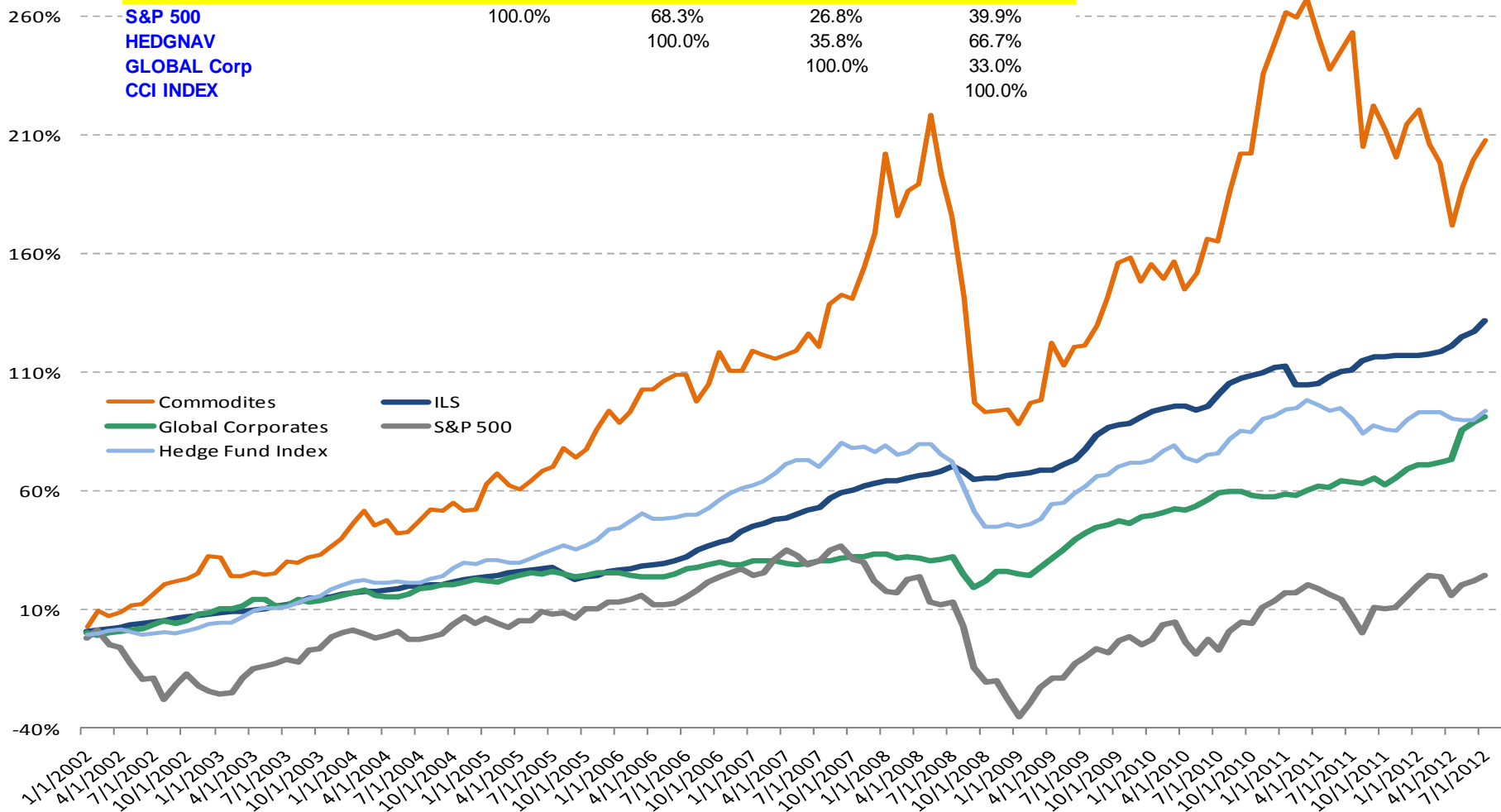
	North America	Europe	M.E.	Asia Pacific
Current Activity Level	Becoming more active, Hedge Funds, Traditional Managers, Life Insurers	Active	Becoming more active	Highly active
Composition of Inflows	Primarily allocations from alternative strategies of traditional managers, seeking relative value, yield and diversification	“Stable” “Three to Five Year” Money, Primarily Pensions	Sovereign Wealth, Opportunistic	Very stable, conservative inflows, yield and fee conscious institutional investors, strong distribution networks
Risk Appetite	Varied; conservative from Life Insurers, can be aggressive from Hedge Funds	Middle to High Single Digit Return Targets	Aggressive 20 percent and higher,	Yield focus is increasing in current investment environment, but consistent focus on low volatility levels remains

# Introduction

## Correlation Analysis – ILS vs. Traditional and Non-Traditional Assets

Correlation Matrix (Monthly Returns, January 2002 through August 2012)

	ILS	S&P 500	HEDGNAV	GLOBAL Corp	CCI INDEX
ILS	100.0%	20.7%	31.9%	34.2%	18.7%
S&P 500		100.0%	68.3%	26.8%	39.9%
HEDGNAV			100.0%	35.8%	66.7%
GLOBAL Corp				100.0%	33.0%
CCI INDEX					100.0%



**Notes**  
 Source: Bloomberg. Tickers: ILS: SRCATTRR; S&P 500 = SPX ; Hedge Fund Index = HEDGNAV; Global Corporates = G0BC; Commodities = CCI. Returns are calculated on a monthly basis and do not reflect fees

## Introduction

### Monthly Return / Variance Analysis (January 2002 – August 2012)

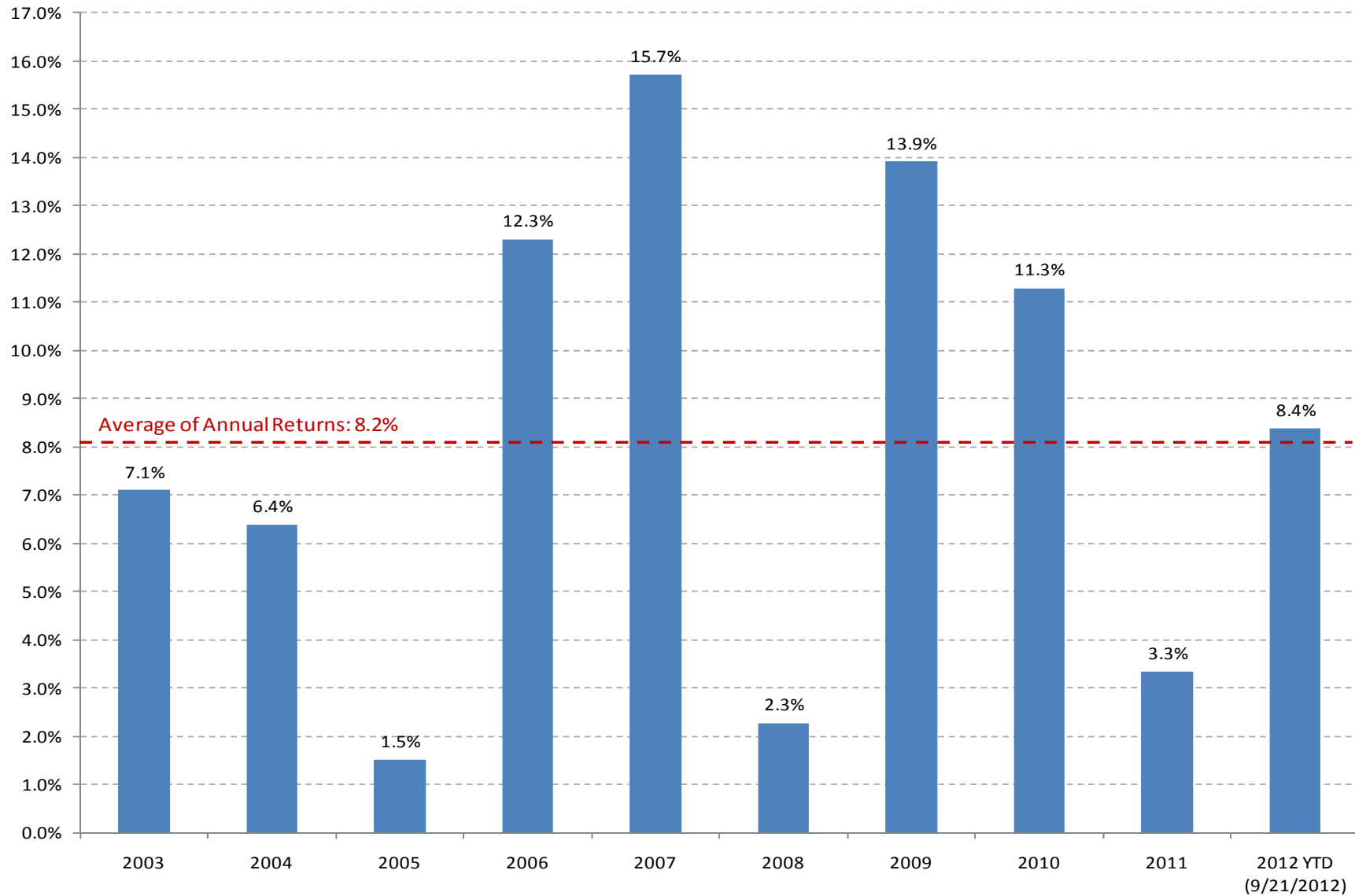
	ALL ILS	BB ILS	S&P 500	Hedge Fund Index	BB Corporates	Global Corporates	Commodities
<b>Mean Return</b>	0.67%	0.59%	0.28%	0.54%	0.64%	0.52%	1.00%
<b>Median Return</b>	0.61%	0.60%	1.00%	0.74%	1.00%	0.56%	1.51%
<b>Max Return</b>	3.08%	2.90%	10.77%	4.06%	7.31%	7.04%	12.39%
<b>Min Return</b>	-3.92%	-4.89%	-16.94%	-6.55%	-15.04%	-5.54%	-18.31%
<b>Volatility</b>	0.85%	0.98%	4.55%	1.67%	2.51%	1.41%	4.63%
<b>Mean / Volatility</b>	78.48%	60.06%	6.09%	32.19%	25.60%	37.11%	21.56%
<b>95th percentile</b>	2.04%	1.79%	7.25%	2.71%	3.85%	2.52%	6.94%
<b>5th percentile</b>	-0.14%	-0.29%	-8.11%	-2.24%	-2.72%	-1.13%	-6.05%
<b>1st percentile</b>	-2.16%	-3.96%	-11.00%	-5.74%	-7.48%	-3.95%	-13.35%

#### Notes

Source: Bloomberg. Tickers: ILS: SRCATTR; BBILS = SRBBTRR; S&P 500 = SPX ; Hedge Fund Index = HEDGNAV; BB Corporates = H5A1; Global Corporates = GOBC; Commodities = CCI. Returns are calculated on a monthly basis and do not reflect fees.

# Introduction

## Average Annual Returns for Catastrophe Bond Market

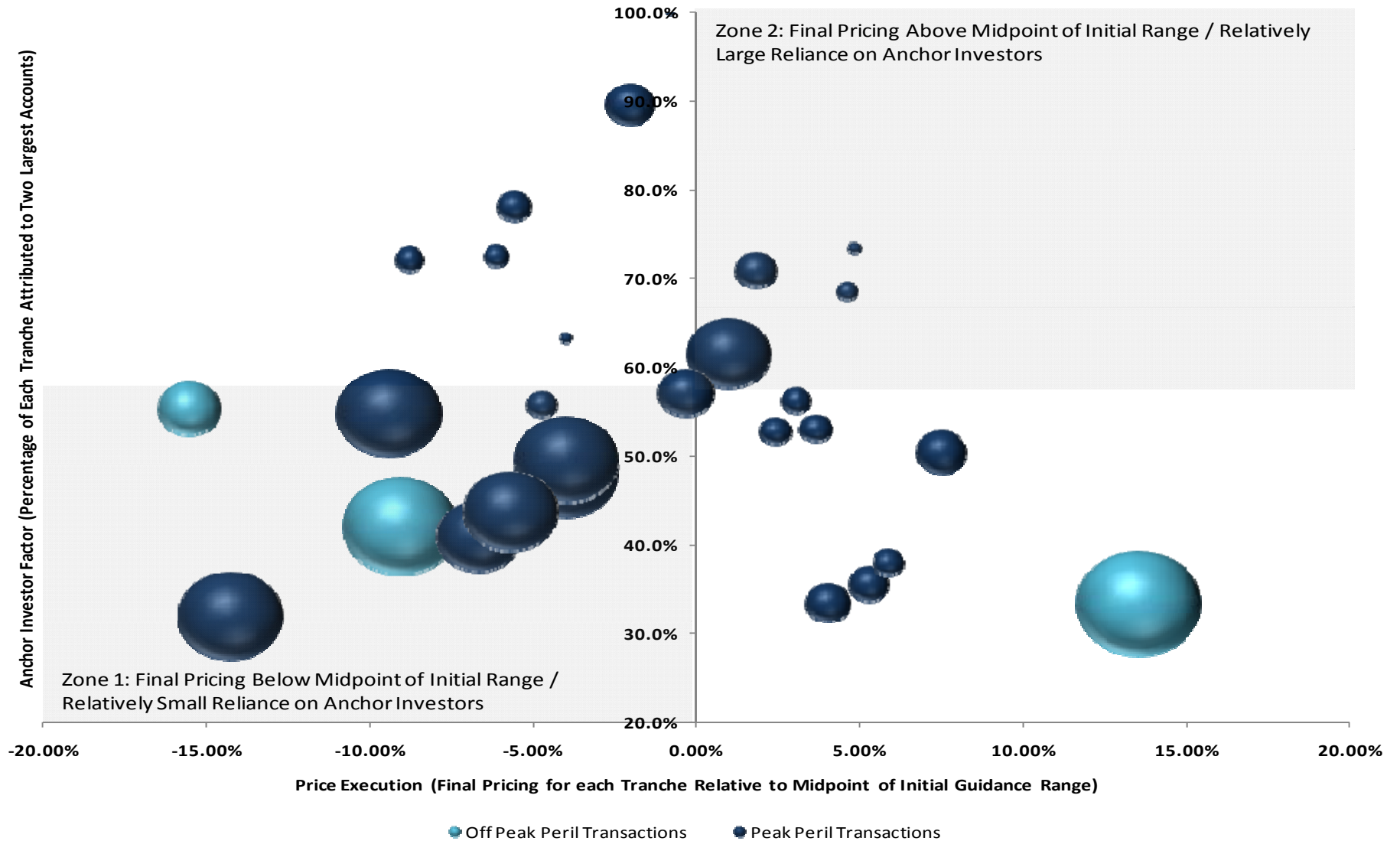


Source: Bloomberg. Ticker: SRCATTRR



# Introduction

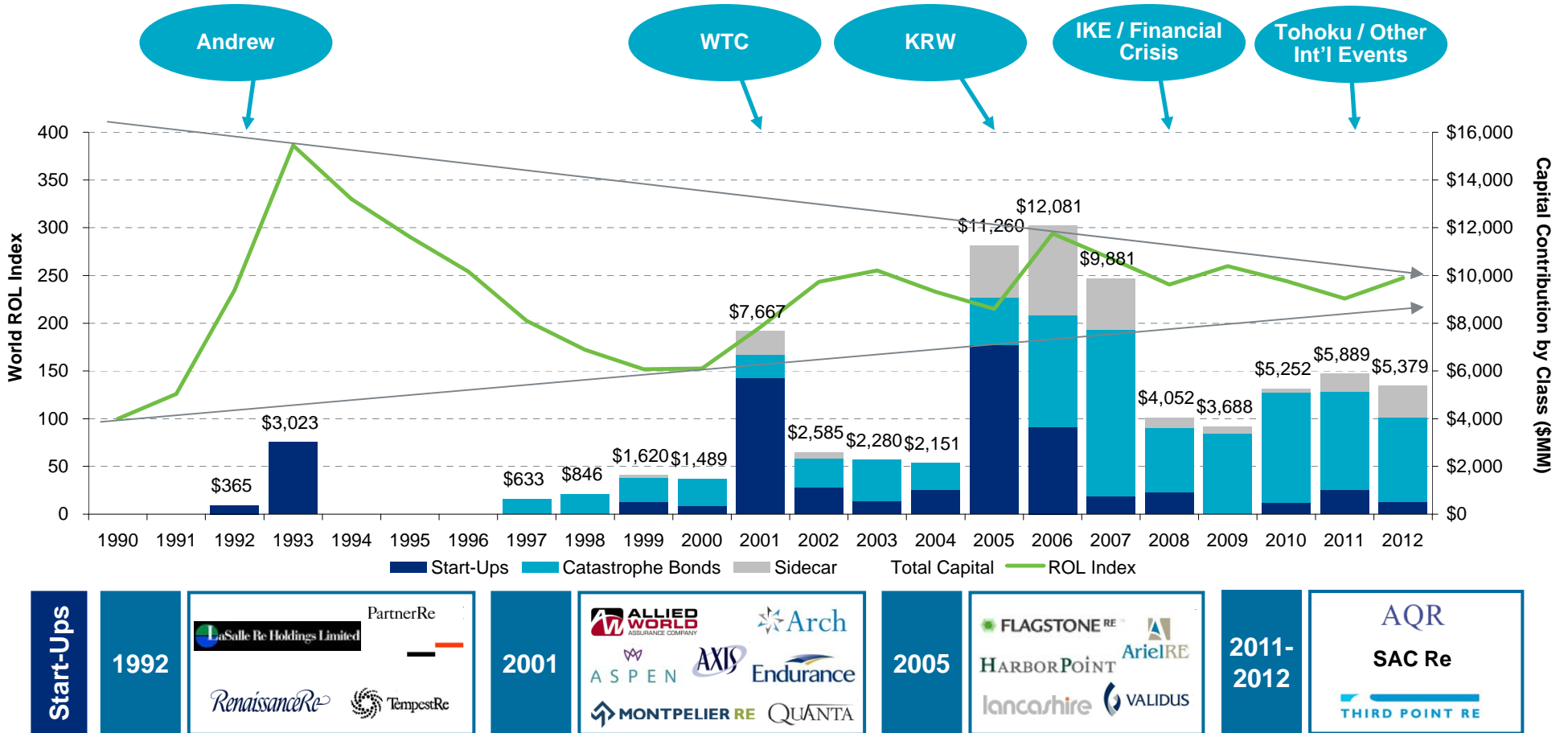
## Catastrophe Bond Market – Study of “Anchor Investor Effect”



# Introduction

## Overview of Alternative Capital Activity and Composition

**The evolving capital markets and continual growth of alternative risk transfer markets has changed the competitive landscape and has had a muting effect on the reinsurance market cycle in recent years**



Note: Source, GC Securities Proprietary Database, 2012; SNL Financial, Company filings and Insurance insider.

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