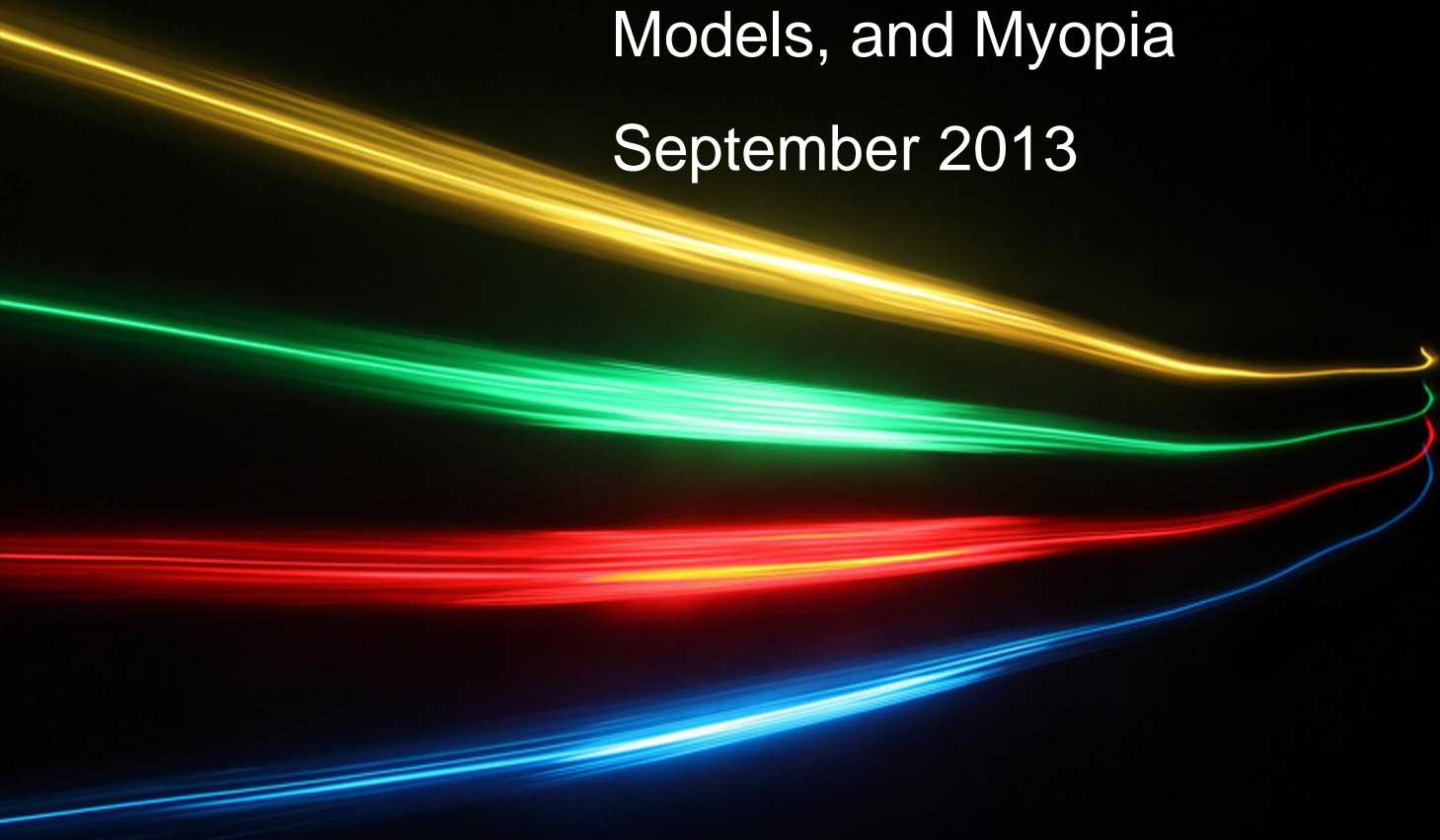


Marine Insurance Day

Reinsurance
Outlook: Markets,
Models, and Myopia

September 2013



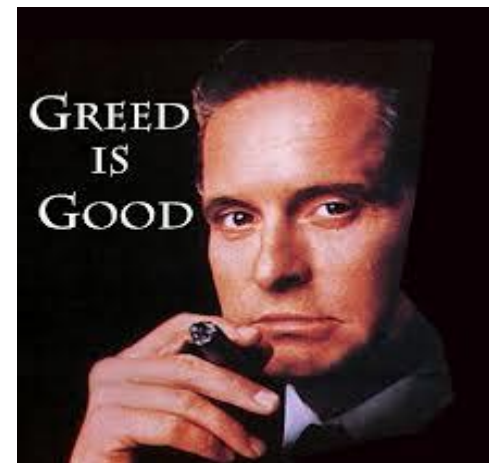
- Outlook for Global Reinsurance and Marine Reinsurance Markets
 - Global Market Events
 - Marine Market Events
 - Other Market Drivers
 - News from Monte Carlo
 - Alternative Capital Review
 - Some words on models...

State of the Reinsurance Market

- Supply vs Demand
- What is the dominant emotion in the current market?
- FEAR
- or GREED?



For a (re)insurance buyer.....



Global Reinsurance Market Events

Willis Re

MANAGING EXTREMES

- US TORNADOS/Hail - USD5.25bn
- Floods:
 - European USD5.3bn
 - Alberta USD3.5bn
 - Toronto USD1bn
 - Colorado (?)



German Hail Loss – July 2013

- Industry loss estimates between \$2b and \$4b
- Swiss Re and Munich Re each expect aprox \$240M in net losses



Natural Disaster Losses in the United States: First Half 2013

Willis Re

MANAGING EXTREMES

As of July 1, 2013	Number of Events	Fatalities	Estimated Overall Losses (US \$m)	Estimated Insured Losses (US \$m)
Severe Thunderstorm	29	66	10,180	6,325
Winter Storm	13	17	2,434	1,255
Flood	10	9	500	Minor
Earthquake & Geophysical	5	0	Minor	Minor
Tropical Cyclone	1	1	Minor	Minor
Wildfire, Heat, & Drought	11	23	700	365
Totals	68	116	13,814	7,945

Natural Disaster Losses in the United States: 2012

Willis Re

MANAGING EXTREMES

As of January 1, 2013	Number of Events	Fatalities	Estimated Overall Losses (US \$m)	Estimated Insured Losses (US \$m)
Tropical Cyclone	4	143	52,240	26,360
Severe Thunderstorm	115	118	27,688	14,914
Drought	2	0	20,000	16,000[†]
Wildfire	38	13	1,112	595
Winter Storm	2	7	81	38
Flood	19	3	13	0^{††}
TOTALS	184	284	\$101,134	\$57,907

Source: MR NatCatSERVICE

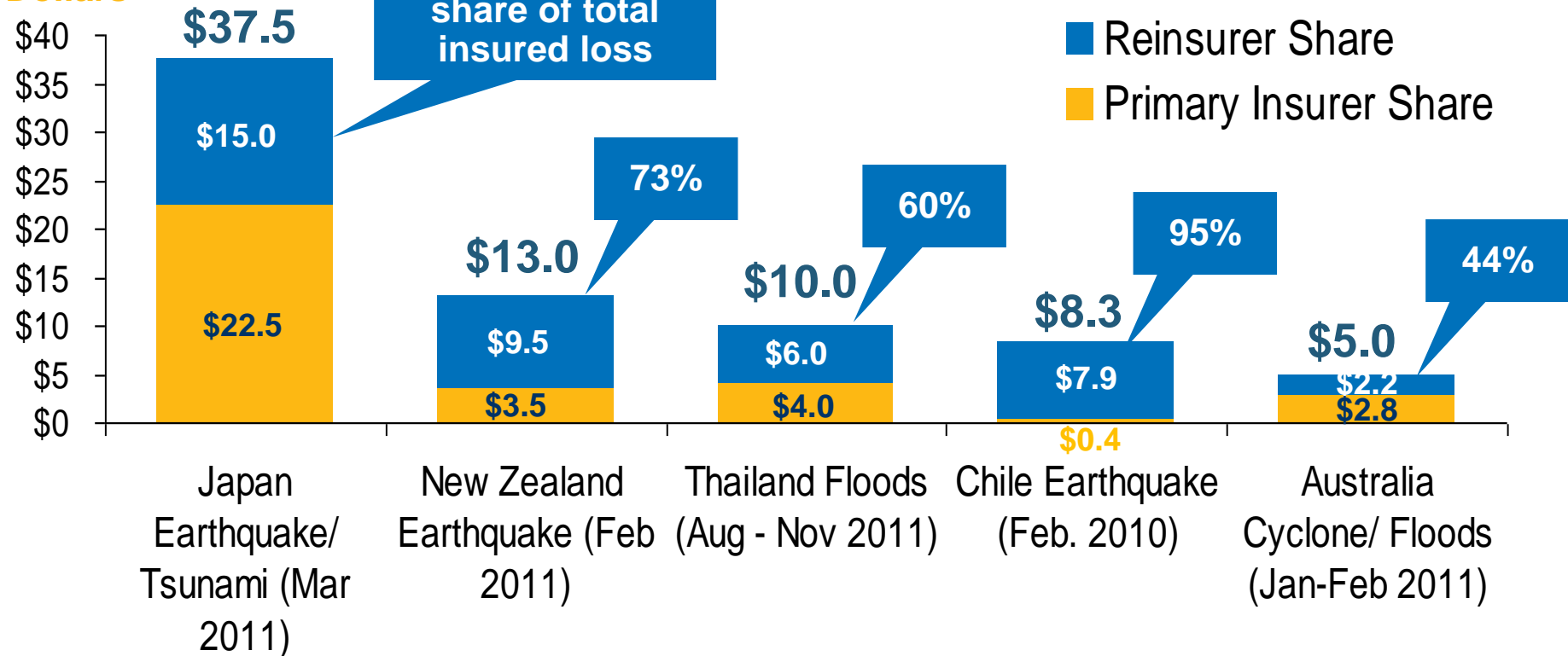
[†] - Includes Federal Crop Insurance Losses. ^{††} - Excludes federal flood.

Reinsurer Share of Recent Significant Market Losses

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Billions of 2011
Dollars



Reinsurers Paid a High Proportion of Insured Losses Arising from Major Catastrophic Events Around the World in Recent Years

Top 16 Most Costly World Insurance Losses, 1970-2012*

Willis Re

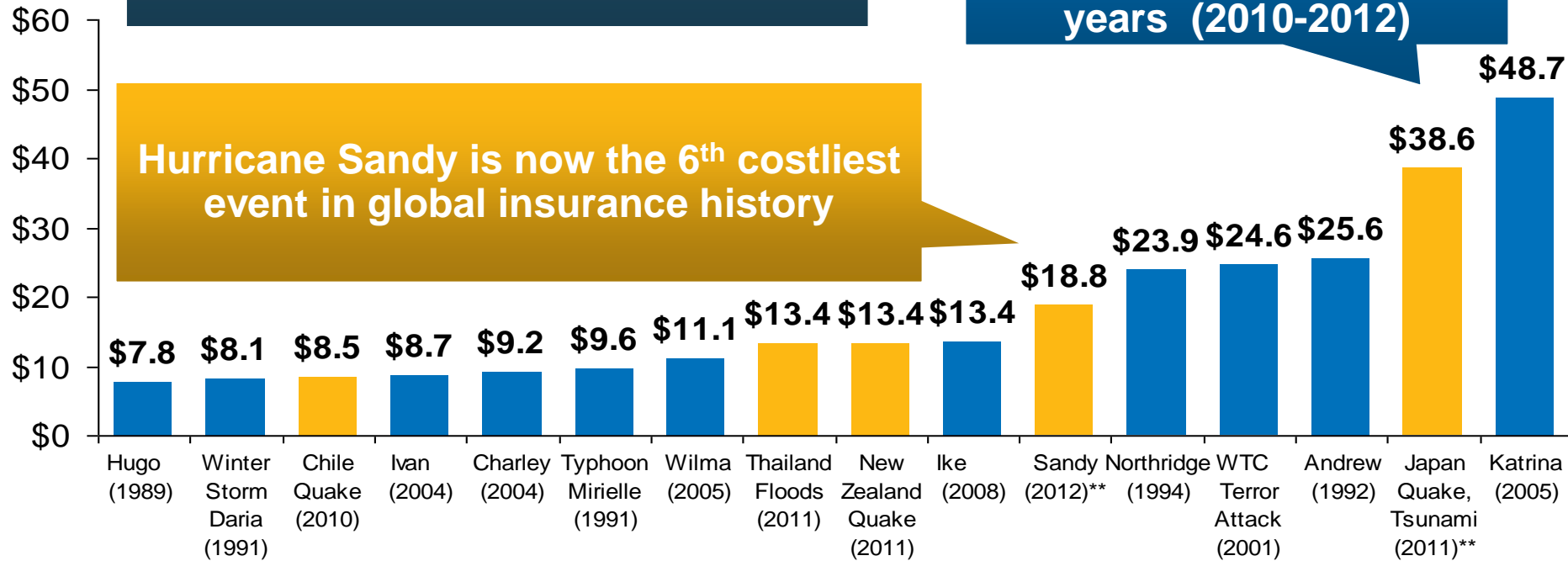
MANAGING EXTREMES

(Insured Losses, 2012 Dollars, \$ Billions)

2012 insured CAT Losses totaled \$60B; Economic losses totaled \$140B, according to Swiss Re

5 of the top 14 most expensive catastrophes in world history have occurred within the past 3 years (2010-2012)

Hurricane Sandy is now the 6th costliest event in global insurance history



*Figures do not include federally insured flood losses.

**Estimate based on PCS value of \$18.75B as of 4/12/13.

Sources: Munich Re; Swiss Re; Insurance Information Institute research.

Where's the Wind?

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MANAGING EXTREMES

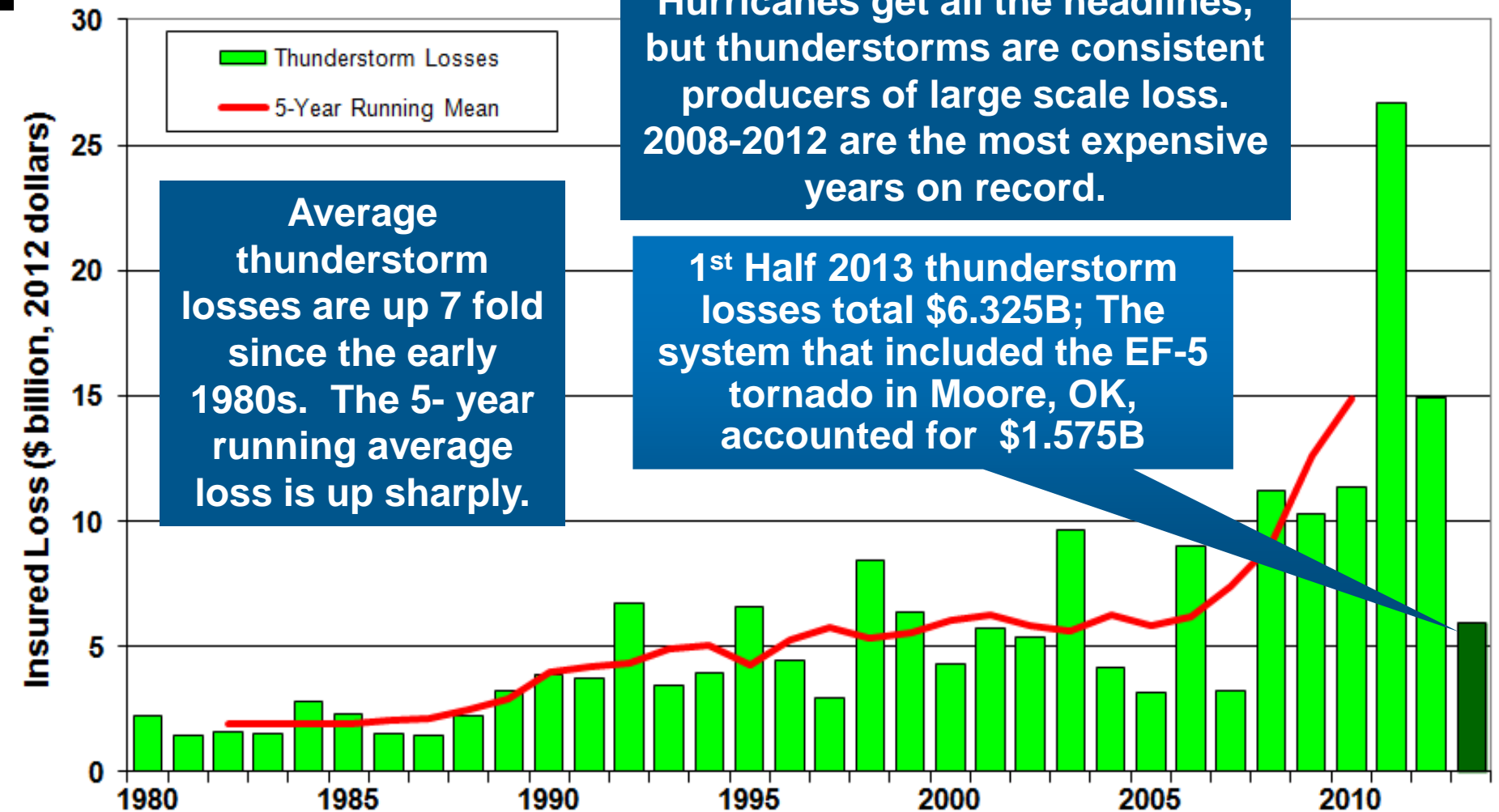
- 7 years without a hurricane making landfall in Florida (longest streak since 1900), CAT rates down significantly at June 1;
- 2013 is 5th year since 1950 with No hurricane formation through August. Each of the 4 prior years without one finished the year with at least 4. None have made it through September, until 2013?



U.S. Thunderstorm Loss Trends, 1980 – June 30, 2013

Willis Re

MANAGING EXTREMES



Other Global Reinsurance Market Events

- Large risk losses:
 - Asiana Airline crash - USD500m
 - Texas refinery explosion - USD500m
 - Argentina refinery flood and fire - USD500m to USD1bn
- Boston Terror Attack

Marine Market Events

- Superstorm Sandy “Loss Creep”
- “Perro Negro 6” – jack up rig (removal of wreck)
- String of bulker groundings in South Africa; “Smart” and “Kiani Satu”
- Two “Weed” ship fires in Med during same week in September



Marine Market Events

- “Costa Concordia”
 - Since April P&I deterioration from USD743m to USD1.169bn
 - Delays in removal of wreckage
 - P&I and Hull combined around USD1.7bn



Marine Market Events

- MOL Comfort Loss;
 - Broke in two
 - Stern section sank
 - Bow section towed, broke tow line
 - Bow section caught on fire, then sank
- Estimated loss of \$400M-\$500M; implies a potential cargo/hull/liability single vessel loss of +\$2 billion for new generation container vessels.



Ultra Large Container Vessels

Source	Average TEU Value	Implied Triple E Exposure
Matthew O'Sullivan – IUMI 2006	\$80,000 - \$210,000	\$2,610,000,000
Munich Re: Estimate	\$80,000 - \$100,000	\$1,620,000,000
XL Re Studies	\$35,000 - \$120,000	\$1,395,000,000
MSC Carla (AIMU RI Committee Survey)	\$74,000	\$1,332,000,000
APL China (AIMU RI Committee Survey)	\$211,000	\$3,798,000,000
Japan – LA study	\$90,000	\$1,620,000,000
LA – Japan study	\$30,000	\$540,000,000
AIMU Reinsurance Committee	\$95,000	\$1,710,000,000

MOL Comfort Details

- 4,382 Containers equivalent to 7,041 TEU. Overall capacity 8110 TEU
- Estimated Cargo loss approx. \$450,000,000 (average per TEU = \$63,911)

Implications for Ultra large Container vessel losses:

- There are currently over 100 vessels with capacity greater than 13,000 TEU
- Largest Container vessels approx. 18,000 TEU (Maersk Triple E vessels)
- Cargo values based on \$100,000 per TEU, could be as high as \$1.8BN

Other Market Fear Factors

- Investment performance
 - Low investment income
 - Drop in net unrealized gains and book value as mark to market bond portfolios in light of rising interest rates.
- Inflation / loss cost uncertainty
- Uncertainty of TRIA reauthorization

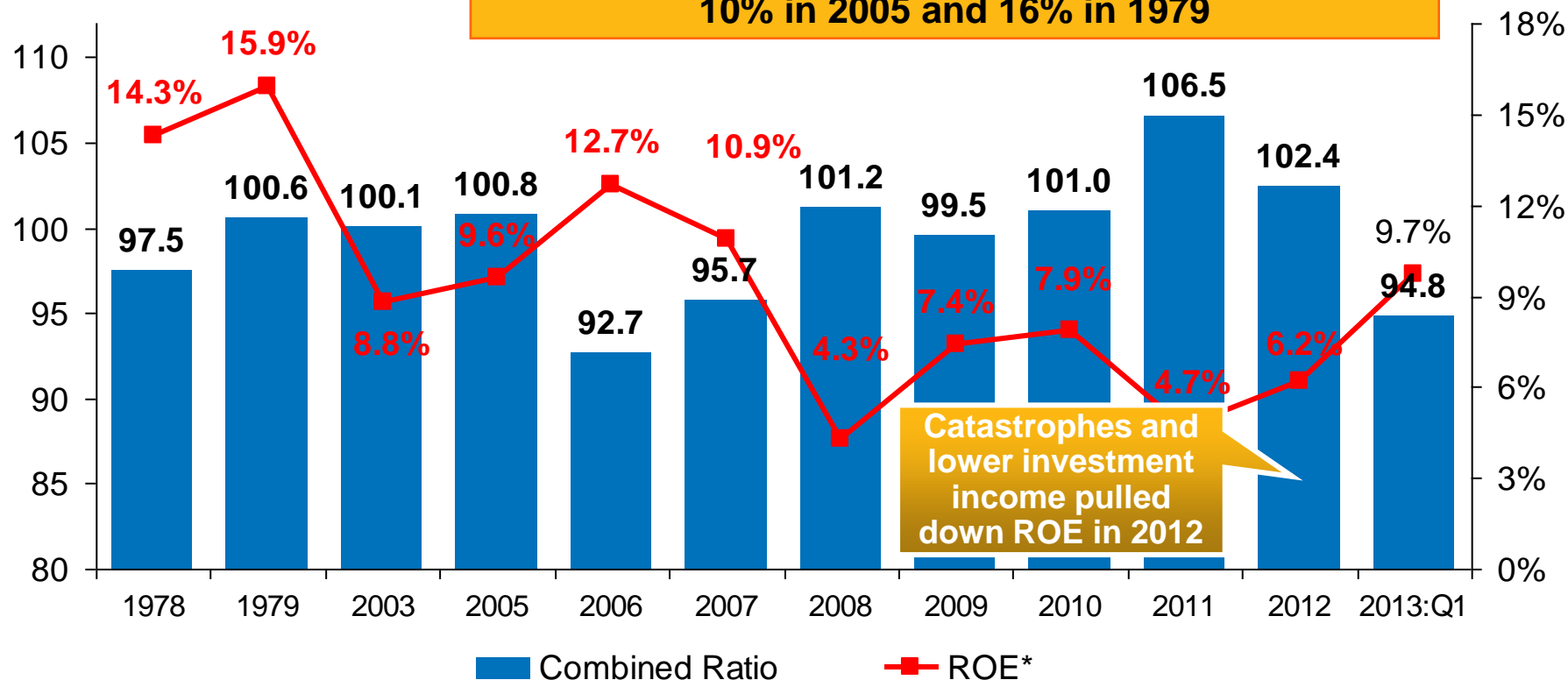
A 100 Combined Ratio Isn't What It Once Was: Investment Impact on ROEs

Willis Re

MANAGING EXTREMES

Combined Ratio / ROE

A combined ratio of about 100 generates an ROE of ~7.0% in 2012, ~7.5% ROE in 2009/10, 10% in 2005 and 16% in 1979



Combined Ratios Must Be Lower in Today's Depressed Investment Environment to Generate Risk Appropriate ROEs

* 2008 -2012 figures are return on average surplus and exclude mortgage and financial guaranty insurers. 2012 combined ratio including M&FG insurers is 103.2, 2011 combined ratio including M&FG insurers is 108.1, ROAS = 3.5%.

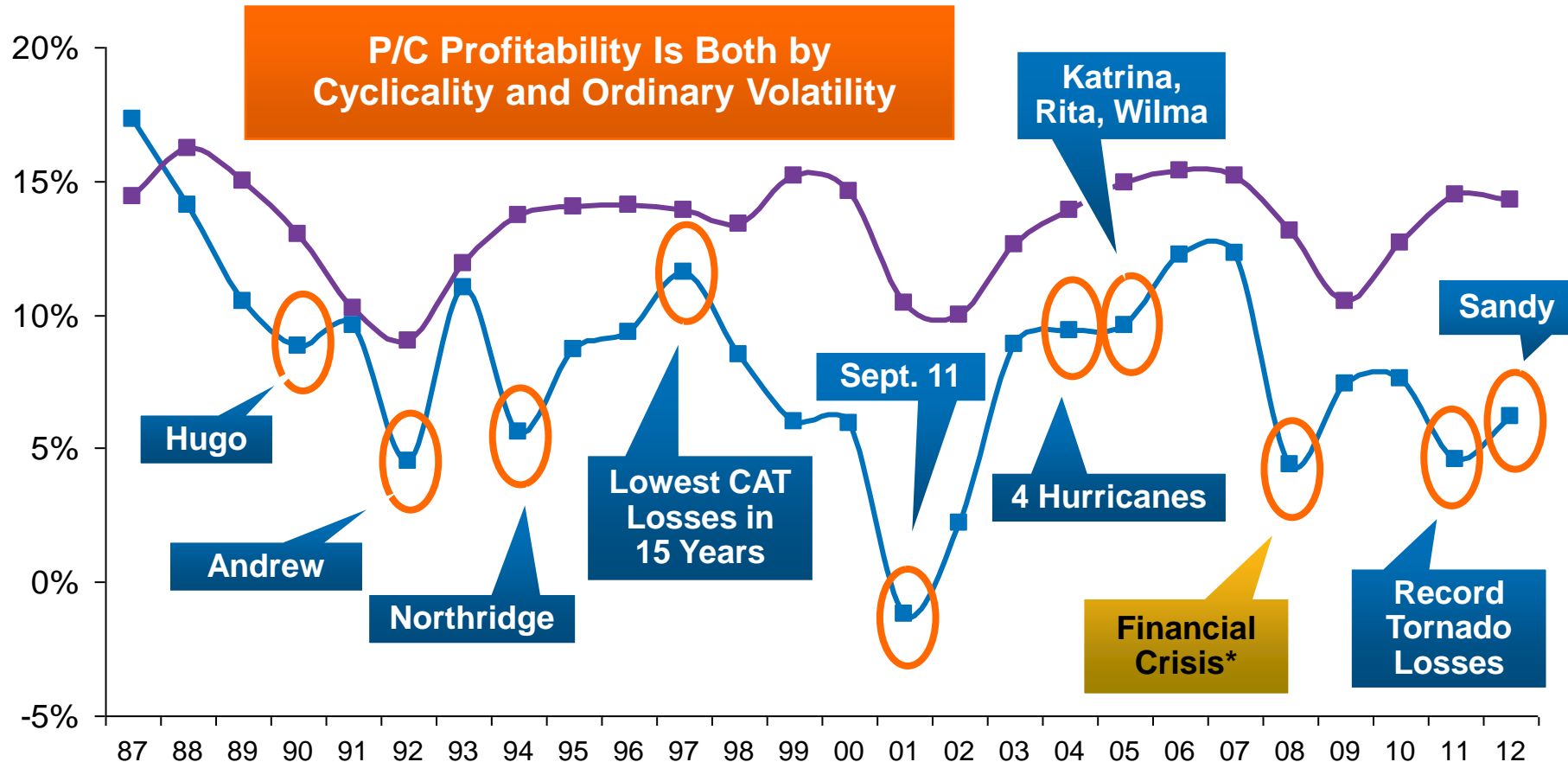
Source: Insurance Information Institute from A.M. Best and ISO data.

ROE: Property/Casualty Insurance vs. Fortune 500, 1987–2012*

(Percent)

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* Excludes Mortgage & Financial Guarantee in 2008 – 2012.
Sources: ISO, *Fortune*; Insurance Information Institute.

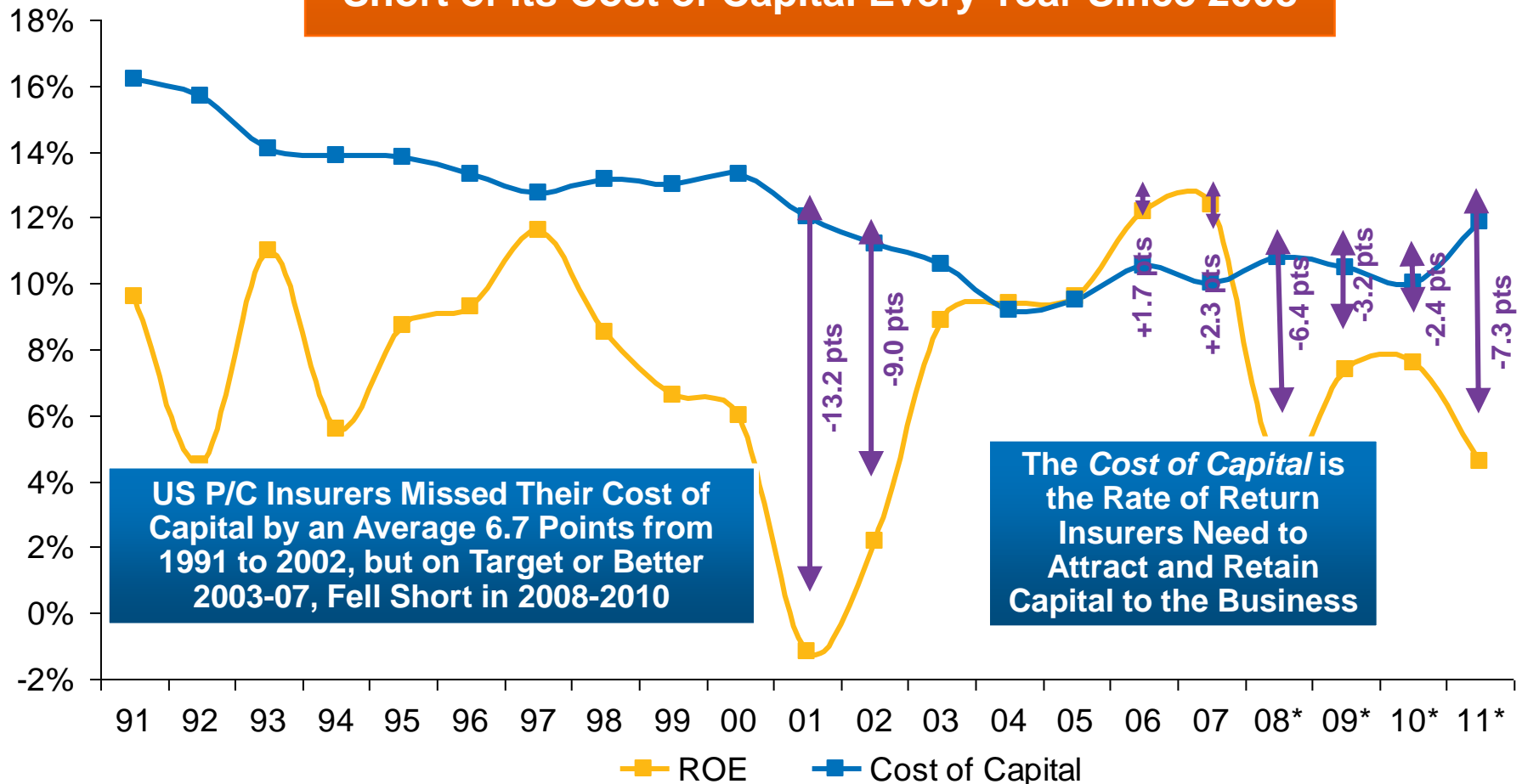
ROE vs. Equity Cost of Capital: U.S. P/C Insurance:1991-2011*

(Percent)

Willis Re

MANAGING EXTREMES

**The P/C Insurance Industry Fell Well
Short of Its Cost of Capital Every Year Since 2008**



* Return on average surplus in 2008-2011 excluding mortgage and financial guaranty insurers.

Source: The Geneva Association, Insurance Information Institute

Greed Factors

- Despite all the challenges, First half 2013 results are strong for most players:
 - Lloyds – GBP1.38 billion half year profit
 - Munich Re – Euro1.5 billion 6 month profit
 - Swiss Re – USD2.2 billion 6 month net income
 - RAA – USD4.75 billion net income at 6 months

Feeding the Greed

- Protecting Market Share in face of increased supply / reduced demand
 - Influx of alternative capacity from the capital markets;
 - New entrants into market; Berkshire Hathaway and Chinese insurers;
 - Broker “tracking” facilities, adding to sense of desperation;
 - Companies retaining more risk, buying less post large loss;
 - Stagnant exposure base

Feeding the Greed

- Improving economy, equity returns and increasing interest rates;
- Run up in equity values of insurers during 2013;
- Stubbornly high expense ratios;
- Capital continues to increase, more than enough supply;
- “Excess Capacity chasing static volumes” (AM Best)

News from Monte Carlo

- Alternative capacity increasing;
- Pressure on rates particularly in USA, buyers retaining more and consolidating the number of reinsurers they do business with;
- IBNR Weekly – “Absent storm in November; won’t be surprised to see property CAT pricing down double digits at 1/1 on a blended basis for excess of loss business with expanded terms and conditions.”

News from Monte Carlo

- Beyond rate relief, reinsurers have indicated willing to provide:
 - multi-year deals;
 - private layers;
 - aggregate covers;
 - more favorable terms & conditions;
- Primary market not sharing upside
 - “What the primary market is getting, the reinsurance market is surrendering in the form of weakening terms and conditions.” XL Re CEO Jamie Veghte

News from Monte Carlo (cont)

- Not just a cat market issue; shifting capital allocations to other lines in light of increased competition in cat, creating broader competitive issues.
- Mature markets spend outlook continues to be benign.
- Heightened M&A activity

Not just a difficult environment for underwriters...

- Cyclical and secular pressures building on r/l broking;
 - cyclical pricing pressures from more capacity,
 - secular due to alternative sources where fees less, more competition from Credit Suisse, Goldman, Swiss Re, and threat of disintermediation.
- “Absent any “event” expect brokerage organic growth to turn negative for the industry over next 12-18 months.” (IBNR#31 Vol. XX)

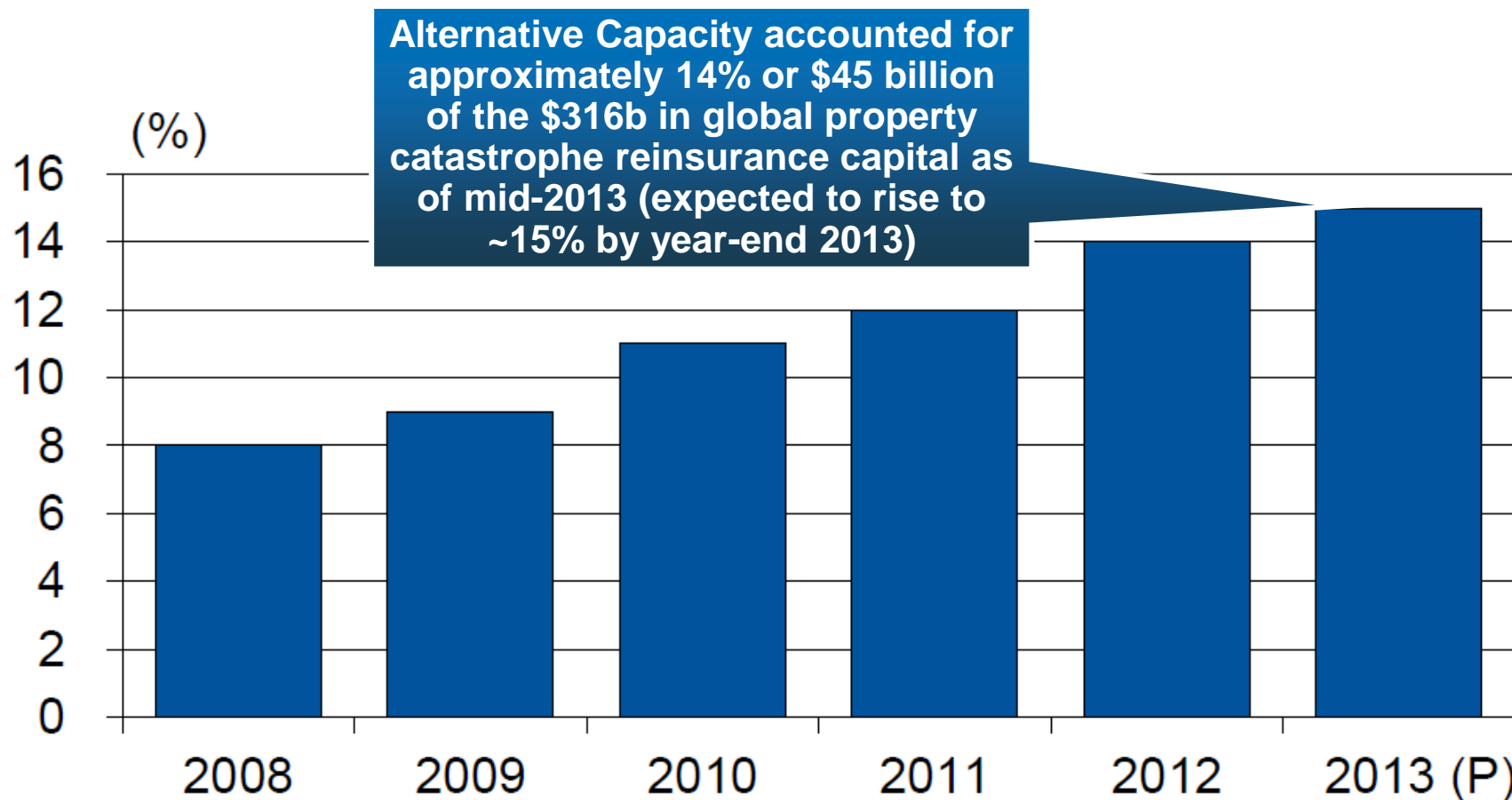
Alternative Capital

- Alternative Capital, alternative capacity, capital market convergence, etc
 - What is it?
 - collateralized reinsurers / sidecars;
 - ILS (insurance linked securities):
 - catastrophe bonds;
 - industry loss warranties;
 - Asset managers;
- Who?
 - Primarily institutional investors via hedge funds, private equity funds, and recently pension and mutual funds.
- Is it a big deal? Yes, very...

Alternative Capacity as a Percentage of Global Property Catastrophe Reinsurance Limit

Willis Re

MANAGING EXTREMES



Explosive Growth Expected to Continue

- Guy Carpenter expects alternative capacity to provide 15% of global CAT limits by year end 2013.
- Willis and Aon both estimate the market will grow to \$100 billion over next few years (up to 30%);
- Investor demand greater than current supply:
 - Nephila Capital, a leading ILS fund manager (\$9b), has turned away more than \$1 billion of capital after closing its funds to new investors;
 - Credit Suisse (\$5.4b) and Fermat Capital (\$4.5b) have closed funds or have waiting lists; (source *Trading Risk*)

Other Alt Capital Comments

- Stone Ridge launched reinsurance focused mutual funds, new ILS issuance had 12 % from mutual funds.
- Expect scope of ILS market to expand beyond plain vanilla nat cat risks.
- Swiss Re and others have both commented that expect investors are long term and will stick around even if interest rates go up.
- “It is sobering to note that only a .5% allocation of global pension funds’ assets under management into ILS products would be sufficient to deliver US \$150 billion of ILS capacity.” — *Willis Re 1stView July 2013*

Goldman Sachs view on Alternative Capital in Reinsurance

- one of eight disruptive themes in business today; Others: Cancer Immunotherapy, E-Cigarettes, LED Lighting, Natural Gas Engines, Software Defined Networking (SDN), 3D Printing, and Big Data
- rise of a new asset class, disruptive and increases risk for traditional reinsurers, “Creative Destruction” in the market.
- evidence at mid-year renewals in pricing, terms and conditions flexibility, and number of reinsurers starting capital markets and third-party capital management units
- if pension funds increase their allocations into the reinsurance space with just a fraction of their portfolios to it, reinsurers ability to generate attractive, risk-adjusted returns alongside this alternative capital could be severely, and potentially permanently, impaired

Goldman Sachs view on Alternative Capital in Reinsurance

- Investors attracted by the low-correlation returns as part of a balanced and diversified investment strategy. With much lower cost of capital, compared to a traditional reinsurer, makes for deep, quick impact on the reinsurance market.
- Ability to enter markets quickly will dull post-loss market rate reaction, dampen cycles further.
- Force traditional CAT writers into other markets
- Trend for reinsurers to manage alternative capital themselves, trading risk income for fee income;
- Believe that alternative capital will broaden its focus in reinsurance, likely beyond pure property catastrophe, as adoption improves
- Capital and underwriting may become even more abstracted than we are currently seeing, underwriters become agnostic as to the source of capital; shareholder equity no longer being considered more valuable than external, or alternative, capital.

Issues of Alignment between Models and Actual Portfolios



Spandex
It's not for everyone.

Models (cont)

Sometimes models are just wrong.



QUESTIONS?

