

Is the World Becoming a Riskier Place? Focus On Energy Insurance Markets

November 9, 2011

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Presentation Outline



- Review of Recent Events
 - What in the World is Going On?
 - A Review of Recent Trends in Uncertainty, Risk and Fear
 - Energy and Insurance Market Issues
- Economic Uncertainty and Volatility
 - Global Overview & Outlook
 - Advanced, Emerging and European Perspectives
- The Unfortunate Nexus: Opportunity, Risk & Instability
 - Growth
 - Political Risk
 - Arab Spring & Energy Markets
- Catastrophe Loss Developments & Trends
 - Global, Europe, US
- Global Energy Market Overview
 - Supply (Production), Demand (Consumption) and Rate Considerations
 - The Post-Deepwater Horizon World
- Summary
- Q&A



What in the World Is Going On?

Is the World Becoming a Riskier Place?

What Are the Implications for Insurance and Risk Management?

Uncertainty, Risk and Fear Abound



ECONOMIC & POLITICAL CONCERNS

- Global Economic Slowdown
- Echoes of the Financial Crisis
- European Sovereign Debt, Bank & Currency Crises
- Collapse of Major Financial Institutions
- US Debt and Budget Crisis, S&P Downgrade & Austerity
- Housing Crisis
- Persistently High Unemployment
- Inflation/Deflation
- Runaway Energy & Commodity Prices
- Political Upheaval in the Middle East
- Regulation
- China→Now the #2 Economy in the World

CATASTROPHIC LOSS

- Japan, New Zealand, Turkey, Haiti, Chile Earthquakes
- Nuclear Fears
- US: Tornadoes, Flooding, Wildfires, Hurricanes, Winter Storms
- Manmade Disasters (e.g., Deepwater Horizon)
- Cyber Attacks
- Resurgent Terrorism Risk (e.g., Bin Laden, Gadhafi Killings)



Are "Black Swans" everywhere or does it just seem that way?

What is Going On in the US and Global Financial Markets?



1. Need for a Binding, Comprehensive Solution to Europe's Debt Problems

- Greek Tragedy: Debt Agreement→Referendum→No Referendum→PM Resigns
- Attention Quickly Turned to Italy→Budget Reforms Pass, Berlusconi Resigns
- Financial "Firewall" around Italy, Spain, Ireland, Portugal may be too small
- Difficulties in managing multinational institutions and economic policies
- ECB and individual member EU countries not all on same page
- Solution: Unified approach on banks, bailout fund; Monetary easing
- OUTCOME: Eurozone countries will eventually stumble into a resolution

2. Economic Slowdown in Europe and Emerging Markets

- China, other economies less able to stimulate global economy than in 2008
- OUTCOME: Mild Recession in Eurozone in 2012

3. Realization that US Economic Growth Will Remain Lackluster

- Q1 GDP just 0.4%; Q2 only 1.3%; Q3 still a subpar 2.5%; Acceleration unlikely
- Job growth has been anemic for months and unemployment remains high at 9.0%
- Markets remain extremely volatile and jittery; Housing/Debt hangover
- OUTCOME: Tepid growth in the 2% 2.5% range in 2012; Unemployment 8.5% 9%

4. View that Washington is Dysfunctional and "Rudderless"

- Lack of coherent, consistent medium and long term plan to deal with basic structural issues in the US economy (debt, taxes, employment, regulation, etc.)
- No confidence that 2012 political cycle will resolve these problems

Déjà Vu? Lehman II? Is This 2008 All Over Again?



Why Today is Not 2008 All Over Again

- The Situation Today is Very, Very Different from 2008
- Credit Markets in US Are Not Seizing; Some Contraction in Europe
- Bank Balance Sheets Are in Much Stronger Shape
 - Capital up, charge offs falling
- We Will Not Experience the Mega-Collapses/Near Collapses Like in 2008
 - No repeat of Lehman, AIG, Washington Mutual, Wachovia...
 - MF Global is not a "Systemically Important Financial Institution"
 - Series of European bank failures likely: Dexia, Proton...; Big Bank Writedowns
- Some Additional Regulatory Controls Are Now Place

What Would Be Helpful Now?

- Solution to European Bank/Sovereign Debt Problem (Part Way There?)
- Long-Term Fiscal and Monetary Policy Direction US
- Fed on Aug. 9 stated rates would remain low "at least through mid-2013"
- On Nov. 4, ECB's Lower Its Key Rate to 1.25% (1st meeting w/ Mario Draghi)
- Both Europe and US Need to Address Excessive Spending and Entitlement Timebombs

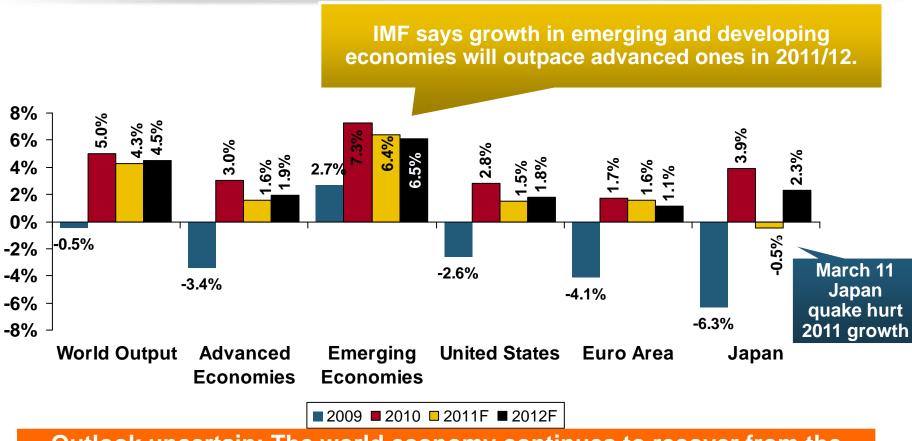


Global Economic Growth Outlook: Volatility Remains

Growth is Much Greater in Developing World as Is Growth in Energy Demand; These Areas Are Riskier to Operate In

World Economic Outlook: 2009-2012F

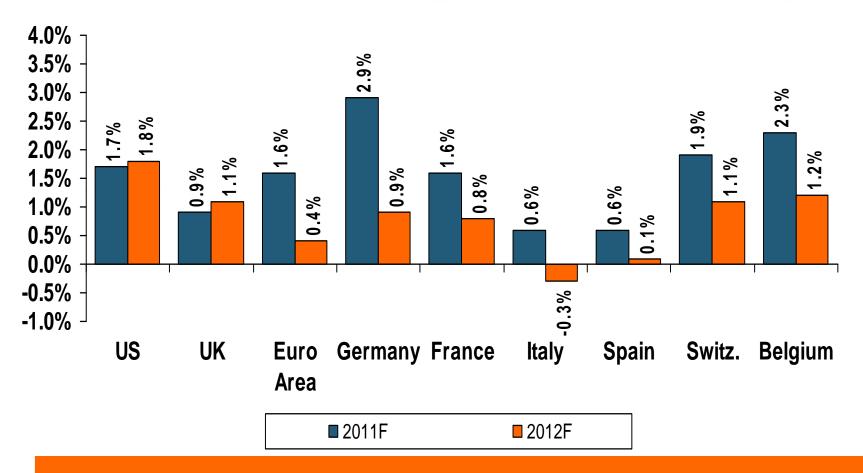




Outlook uncertain: The world economy continues to recover from the global economics, but at a weakening pace and at different speeds in different parts of the world, according to the IMF. A clear set of "winners" has emerged with direct implications for all industries and their insurers.

Real GDP Growth Forecasts: US and Major European Economies: 2011 - 2012

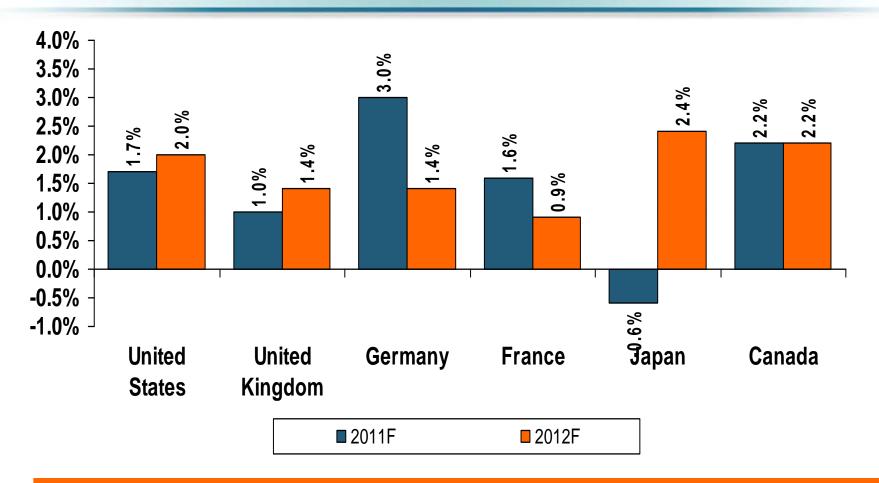




Growth projections for 2011 and 2012 have been revised downward as austerity measures take effect and concerns related to sovereign debt worsen

Real GDP Growth Forecasts for Advanced Economies: 2011 - 2012

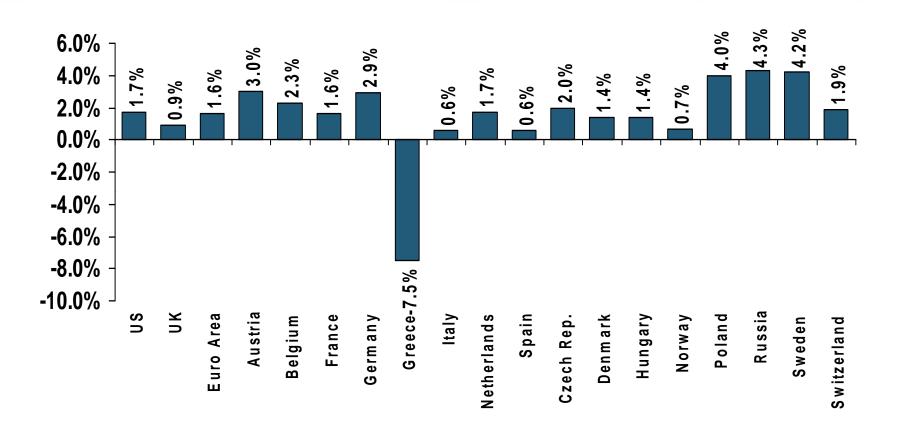




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Real GDP Growth Forecasts for 2011: US and Major European Economies

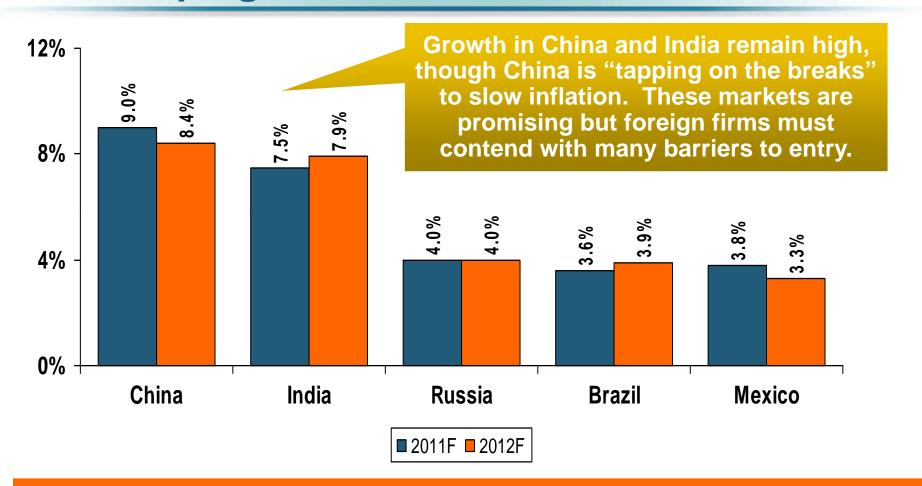




Growth projections for 2011 have been revised downward as austerity measures take effect and concerns related to sovereign debt worsen

Real GDP Growth Forecasts for Key Developing Economies: 2011 - 2012

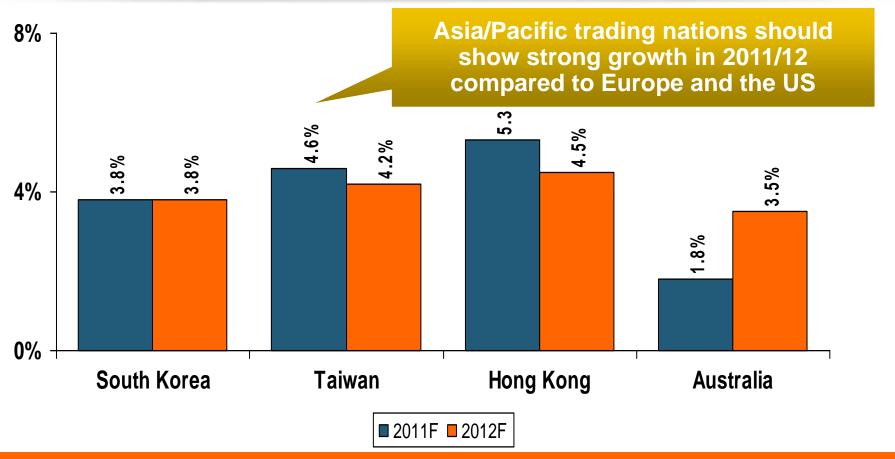




Growth in emerging and developing economies will greatly outpace advanced country growth in 2011/12. This will accelerate the growth of insurance exposures in emerging markets relative to the U.S., W. Europe and Japan.

Real GDP Growth Forecasts for Other Key Trading Economies: 2011 - 2012

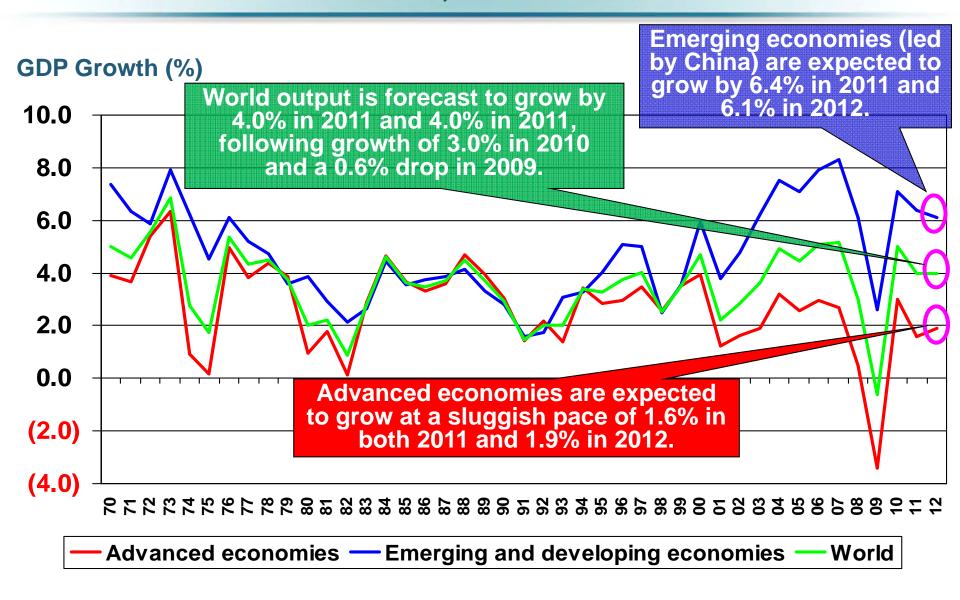




Growth in industrialized Asian economies will greatly outpace much of the rest of the world in 2011/12. This will accelerate the growth of energy demand and insurance exposures in emerging markets relative to the U.S., W. Europe and Japan.

GDP Growth: Advanced & Emerging Economies vs. World, 1970-2012F

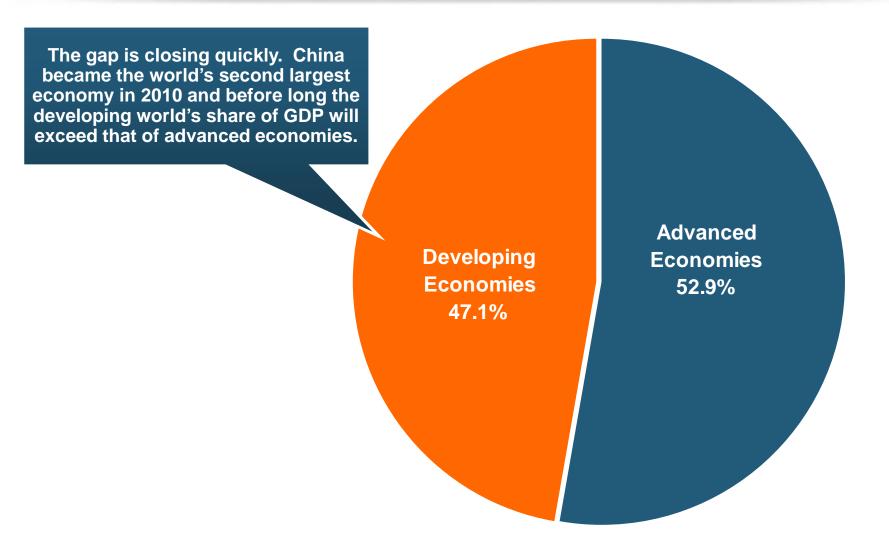




Source: International Monetary Fund, World Economic Outlook Update, Sept. 2011; Ins. Info. Institute.

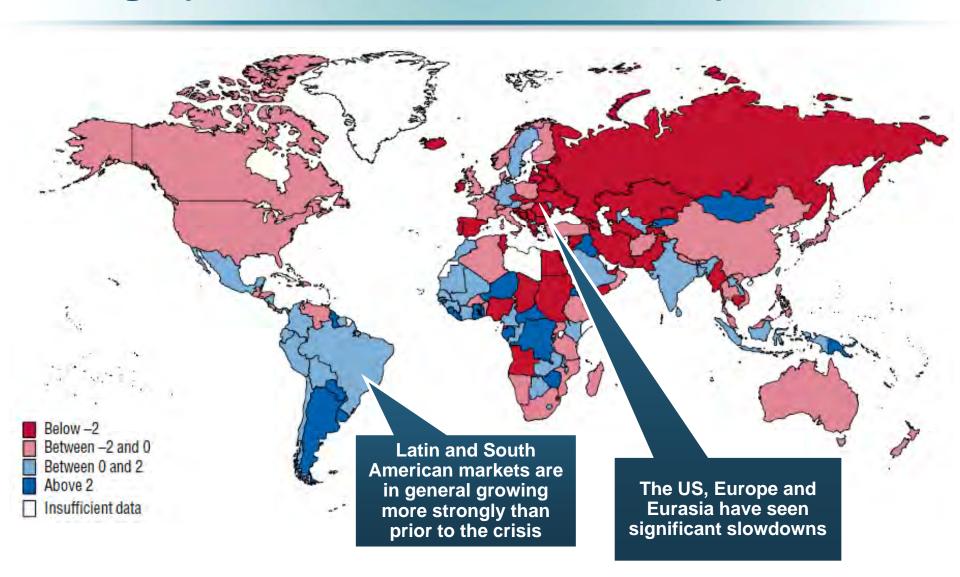
Relative Shares of Global Output, Advanced vs. Developing Economies, 2009





Current Real GDP Growth vs. Pre-Crisis Average (2000-2007 vs. 2011F-2012F*)



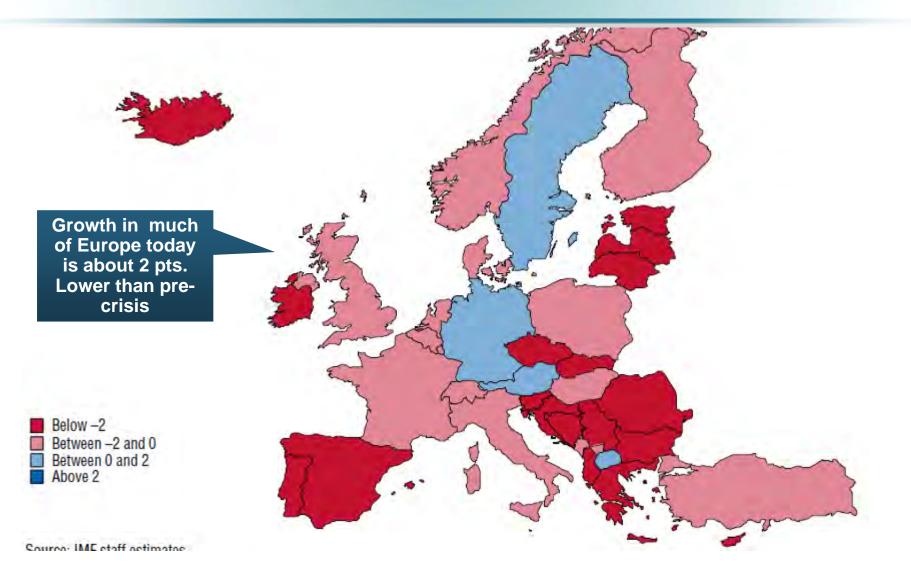


^{*}Percentage point difference between compound annual rates of change 2000-2007 vs. forecasts for 2011-2012.

Source: IMF, World Economic Outlook, September 2011; Insurance Information Institute.

Current Real GDP Growth vs. Pre-Crisis Average (2000-2007 vs. 2011F-2012F*)





^{*}Percentage point difference between compound annual rates of change 2000-2007 vs. forecasts for 2011-2012.

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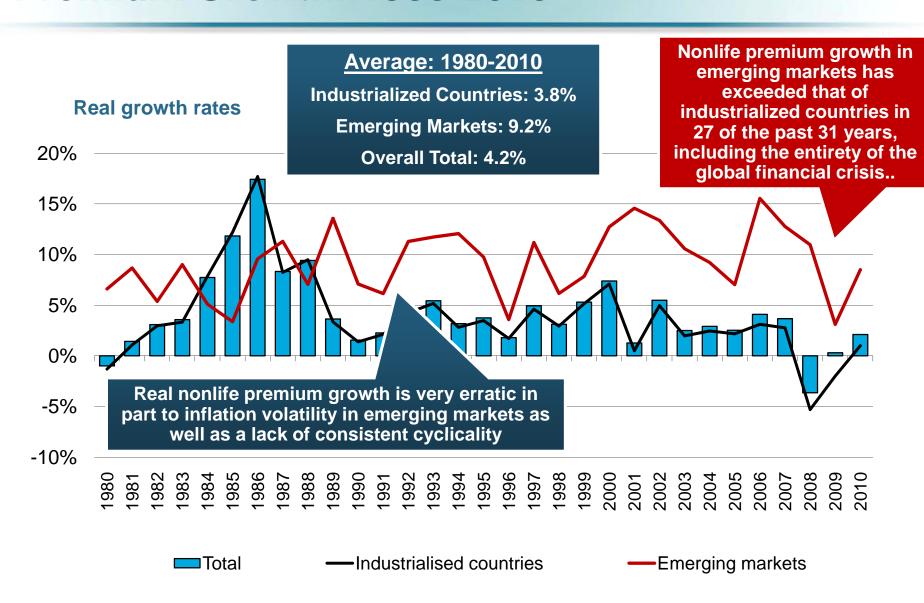


The Unfortunate Nexus: Opportunity, Risk & Instability

Most of the Global Economy's Future Gains Will be Fraught with Much Greater Risk and Uncertainty than in the Past

Global Real (Inflation Adjusted) Nonlife Premium Growth: 1980-2010

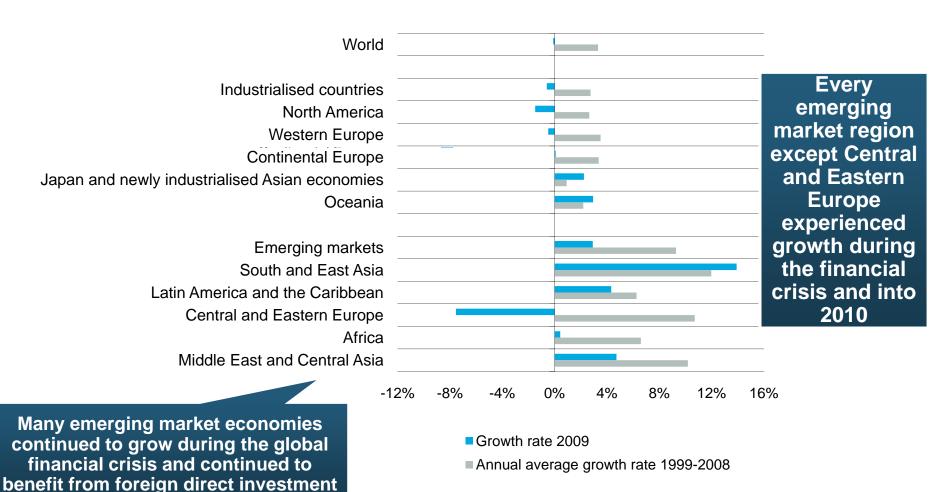




Nonlife Real Premium Growth Rates by Region: 2000-2009 and 2010



Real Premium Growth Rates



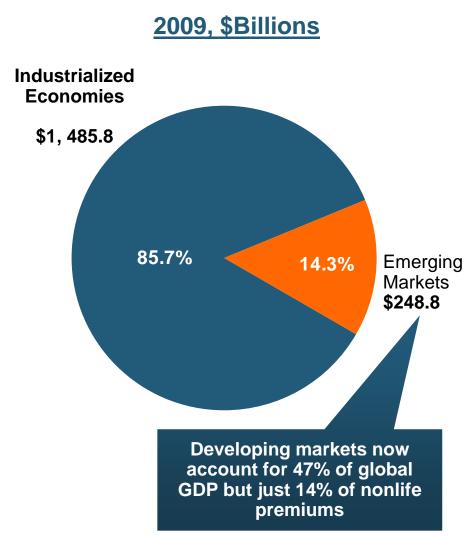
Source: Swiss Re, sigma, No. 2/2011.

Distribution of Nonlife Premium: Industrialized vs. Emerging Markets, 2009



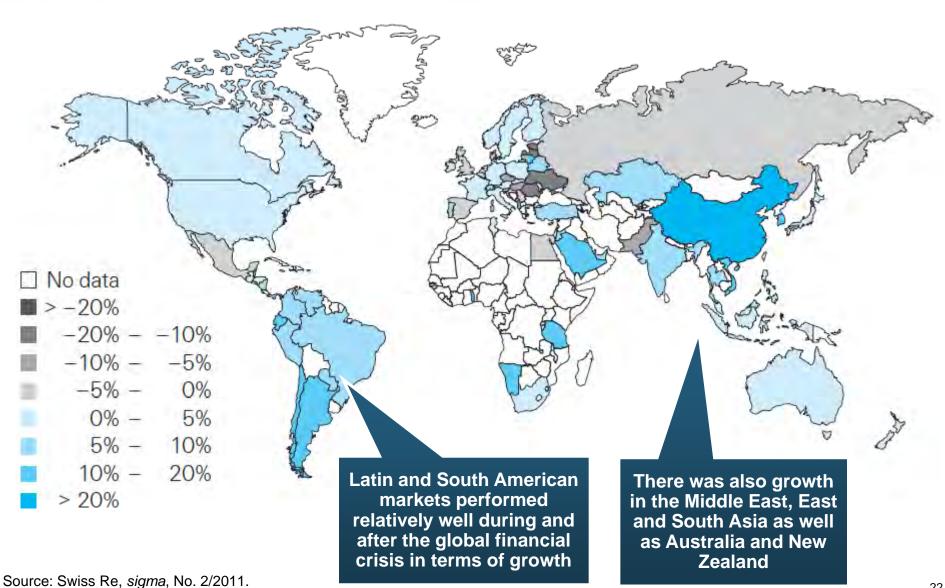
Premium Growth Facts

- Although premium growth throughout the industrialized world was negative in 2009, its share of global nonlife premiums remained very high at nearly 86%--accounting for nearly \$1.5 trillion in premiums.
- The financial crisis and sluggish recovery in the major insurance markets will accelerate the expansion of the emerging market sector



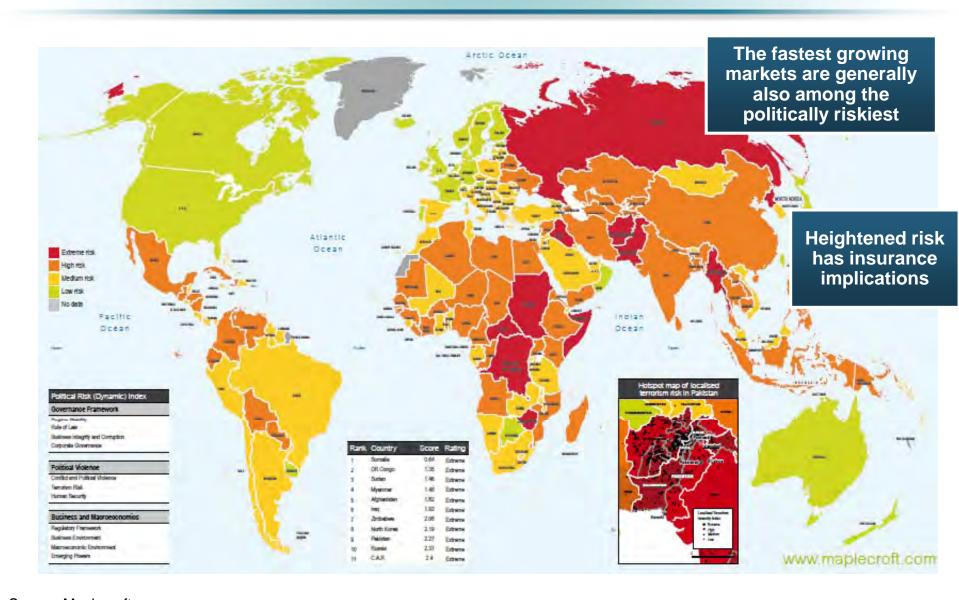
Nonlife Real Premium Growth in 2010





Political Risk in 2010: Greatest Business Opportunities Are Often in Risky Nations





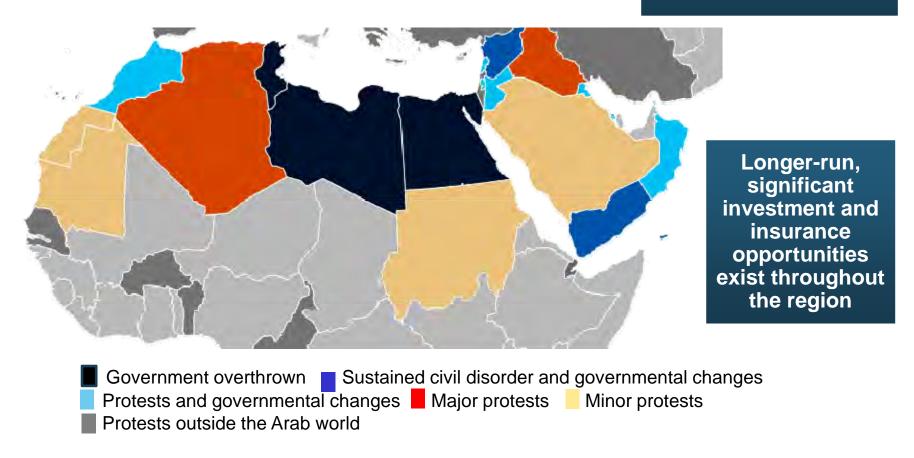
Source: Maplecroft

The "Arab Spring" Has Exacerbated Uncertainty in an Already Volatile Part of the World



Arab Spring الربيع العربي

Energy-rich nations have been among the most unstable in 2011





Catastrophe Loss Developments and Trends

2011 and 2010 Are Rewriting Catastrophe Loss and Insurance History

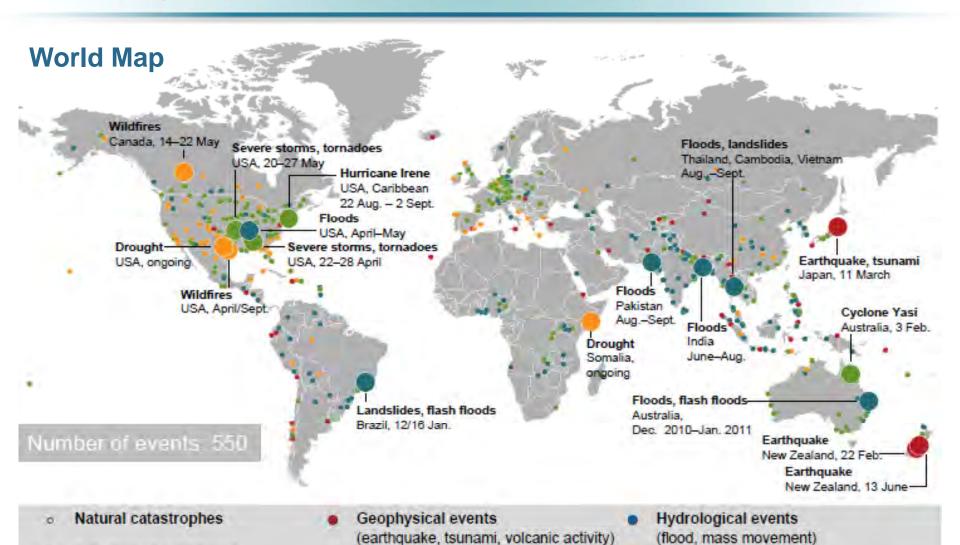
Global Catastrophe Loss Summary: First Half 2011



- 2011 Is Already (as of June 30) the Highest Loss Year on Record Globally
 - Extraordinary accumulation of severe natural catastrophe: Earthquakes, tsunami, floods and tornadoes are the primary causes of loss
- \$260 Billion in *Economic* Losses Globally
 - New record for the first six months, exceeding the previous record of \$220B in 2005.
 - Economy is more resilient than most pundits presume
- \$55 Billion in *Insured* Losses Globally
 - More than double the first half 2010 amount
 - Over 4 times the 10-year average
- \$27 Billion in Economic Losses in the US
 - Represents a 129% increase over the \$11.8 billion amount through the first half of 2010
- \$17.3 Billion in *Insured* Losses in the US Arising from 100 CAT Events
 - Represents a 162% increase over the \$6.6 billion amount through the first half of 2010

Natural Loss Events, January – September 2011





Meteorological events

(storm)

Source: MR NatCatSERVICE

Selection of significant

loss events (see table)

Climatological events

(extreme temperature, drought, wildfire)

Worldwide Natural Disasters 2011

Significant Natural Disasters (January – September only)



Period	Loss event	Affected area	Overall losses*	Insured losses*	· Fatalities*
			US\$m, original values		ratalities*
Dec 2010-Jan 2011	Floods, flash floods	Australia (Queensland)	7,300	2,550	29
12/16 Jan.	Landslides, flash floods	Brazil (State of Rio de Janeiro)	**	**	1,350
3 Feb.	Cyclone Yasi	Australia (Queensland)	2,000	1,000	1
22 Feb.	Earthquake	New Zealand (Christchurch)	25,000	13,000	181
11 March	Earthquake, tsunami	Japan (esp. northeastern Honshu)	210,000	~30,000	15,800 (3,800 missing)
22–28 April	Severe storms, tomadoes	USA (esp. AL, Tuscaloosa)	12,000	7,300	350
April-May	Floods	USA (esp. Ohio River, Mississippi River, Missouri River)	2,600	**	9
April/Sept.	Wildfires	USA (TX)	1,500	680	4
14-22 May	Wildfires	Canada (Alberta, Slave Lake)	>1,500	720	1
20-27 May	Severe storms, tornadoes	USA (esp. MO, Joplin)	9,000	5,900	176
13 June	Earthquake	New Zealand (Christchurch)	**	**	1
AugSept.	Floods, landslides	Thailand, Cambodia, Vietnam	**	**	370
AugSept.	Floods	Pakistan	**	**	445
22 Aug2 Sept.	Hurricane Irene	USA, Caribbean	15,000	7,000	54

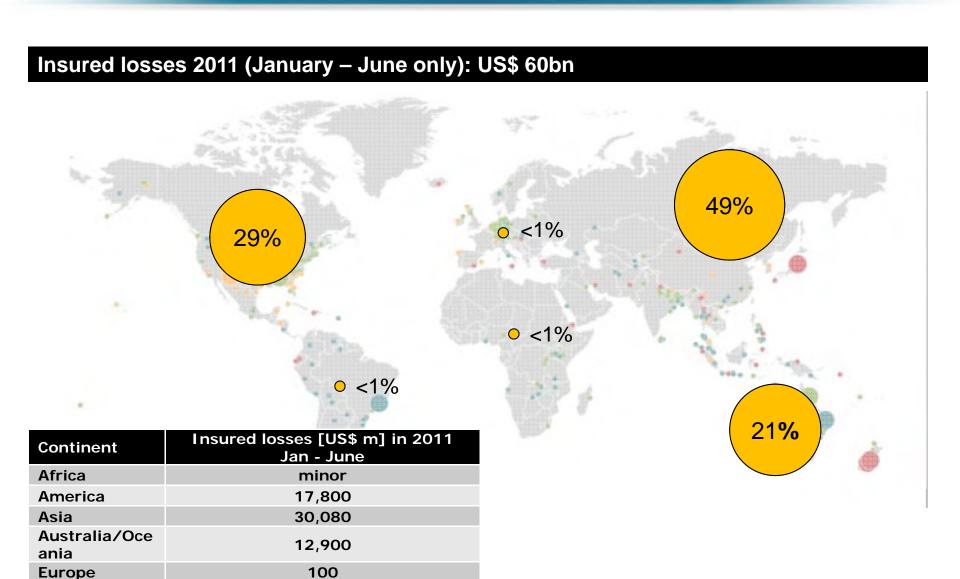
"As at October 2011
""Loss assessment still in progress

Source: MR NatCatSERVICE

Worldwide Natural Disasters 2011



% Distribution of Insured Losses Per Continent (January – June only)

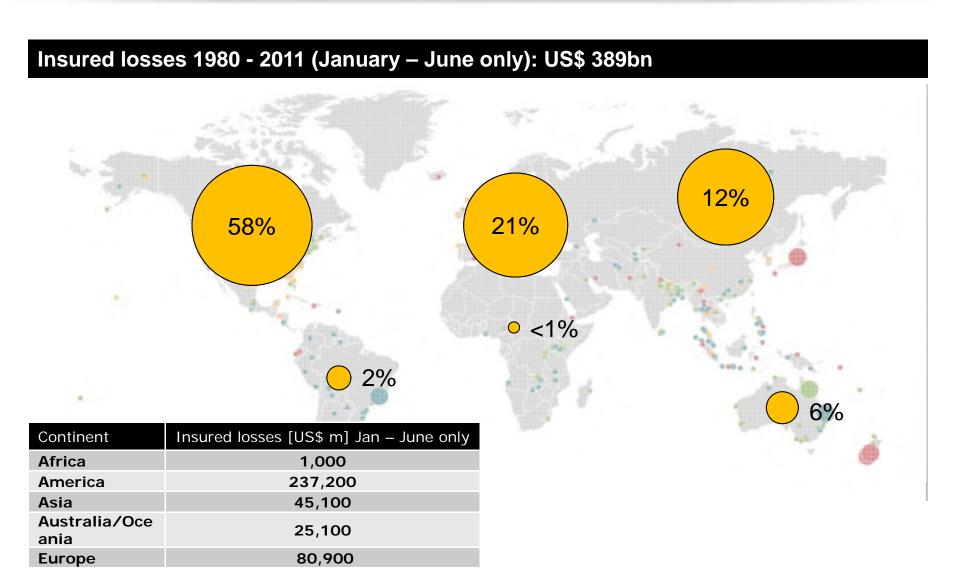


Source: MR NatCatSERVICE 29

Worldwide Natural Disasters, 1980-2011



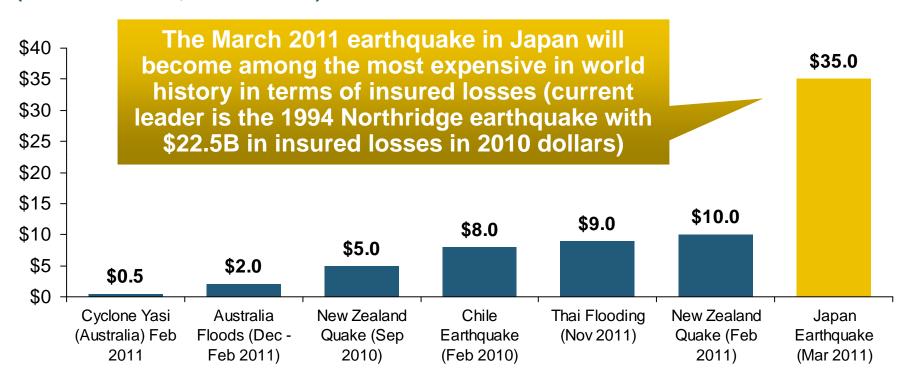
% Distribution of Insured Losses Per Continent (January – June only)



Recent Major Non-US Catastrophe Losses



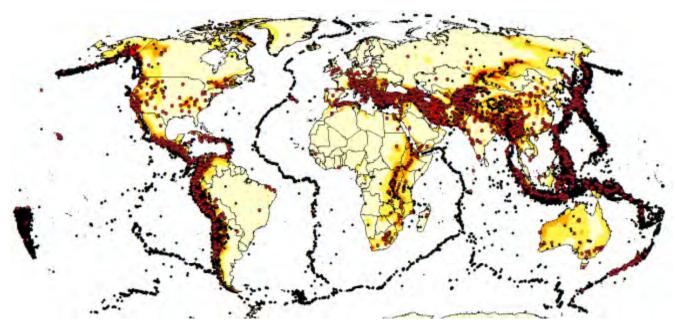
(Insured Losses, \$US Billions)



Insured Losses from Recent Major Catastrophe Events
Approach \$70 Billion, an Estimated \$53 Billion of that from
Earthquakes

Deadliest/Costliest Earthquakes: 1900 – June 2011





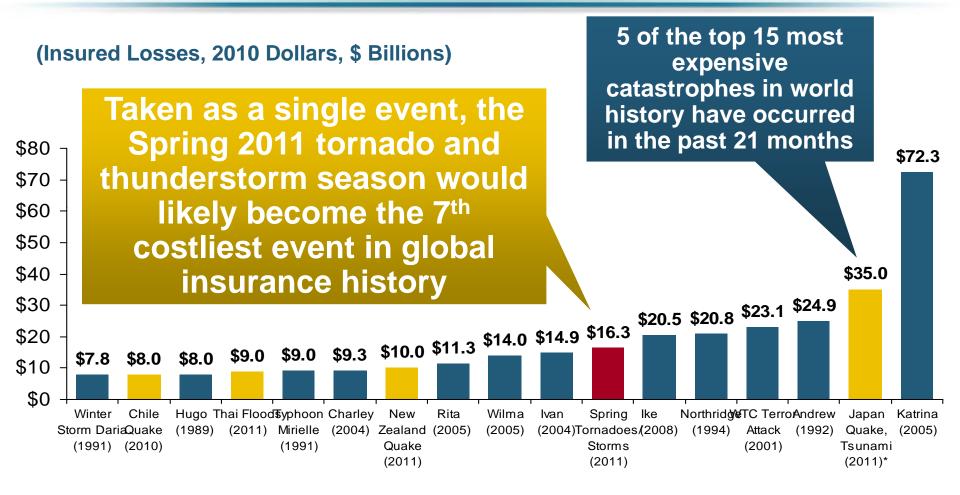
Date	Affected Area	Fatalities
1920	China	273,400
1976	China	242,800
2010	Haiti	222,570
2004	Indonesia	220,000
1923	Japan	142,800

Date	Affected Area	Overall losses (US\$m, original values)
2011	Japan	210,000
1995	Japan	100,000
2008	China	85,000
1994	USA	44,000
2010	Chile	30,000

Source: MR NatCatSERVICE 32

Top 17 Most Costly World Insurance Losses, 1970-2011*

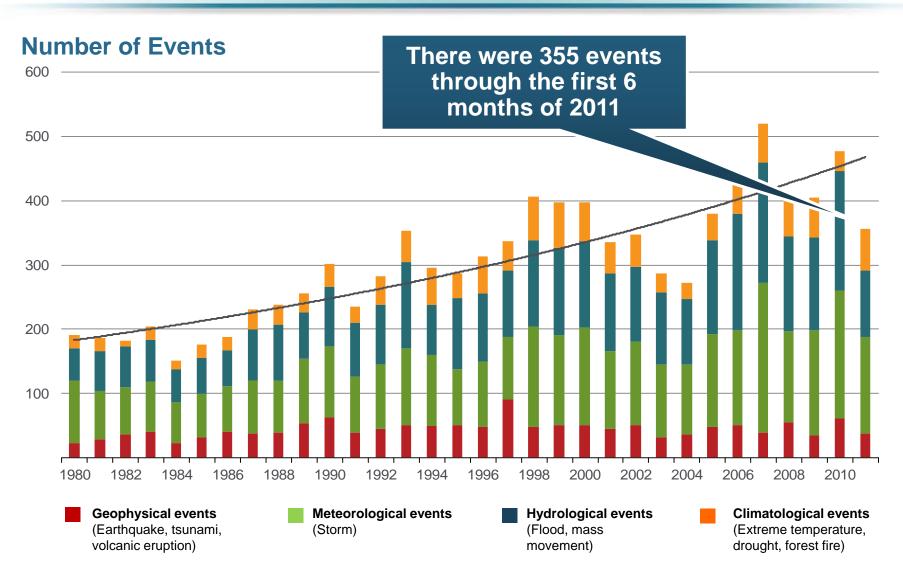




^{*}Through November 7, 2011. 2011 disaster figures are estimates; Figures include federally insured flood losses, where applicable. Sources: Swiss Re *sigma 1/2011*; AIR Worldwide, RMS, Eqecat; Insurance Information Institute.

Worldwide Natural Disasters, 1980 – 2011*

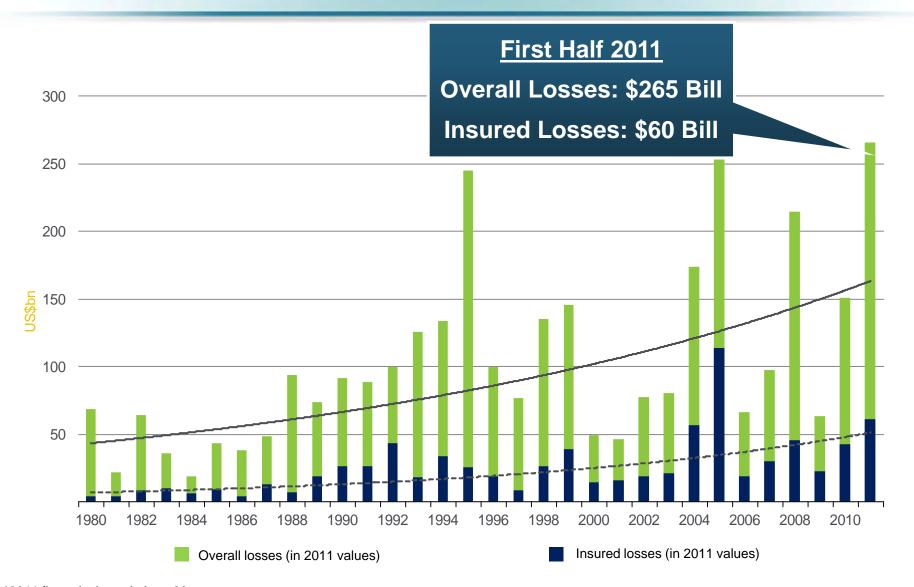




*2011 figure is through June 30. Source: MR NatCatSERVICE

Worldwide Natural Disasters 1980–2011, Overall and Insured Losses*





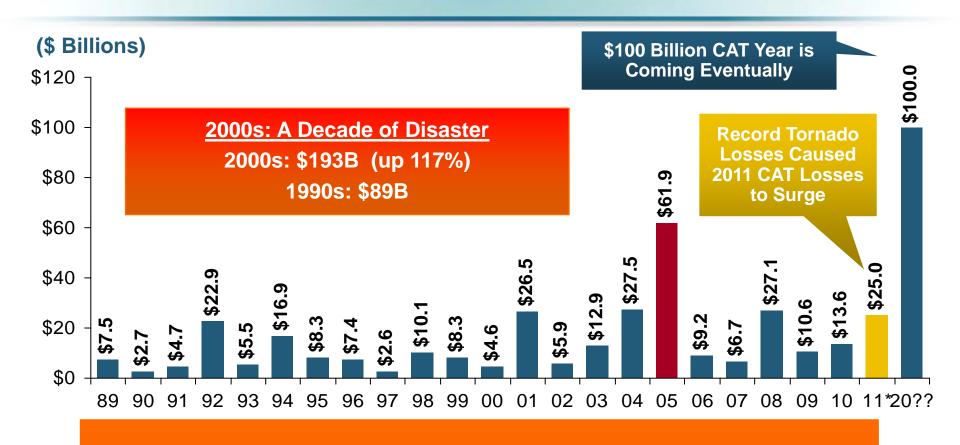


US CATASTROPHE INSURED LOSS UPDATE

First Half 2011 CAT Losses Already Exceed All of 2010 and Could Become One of the Most Expensive Years on Record

US Insured Catastrophe Losses





2011 Will Likely Become the 5th or 6th Most Expensive Year for Insured Catastrophe Losses in the US, After Adjusting for Inflation

Note: 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01. Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = \$12.2B.

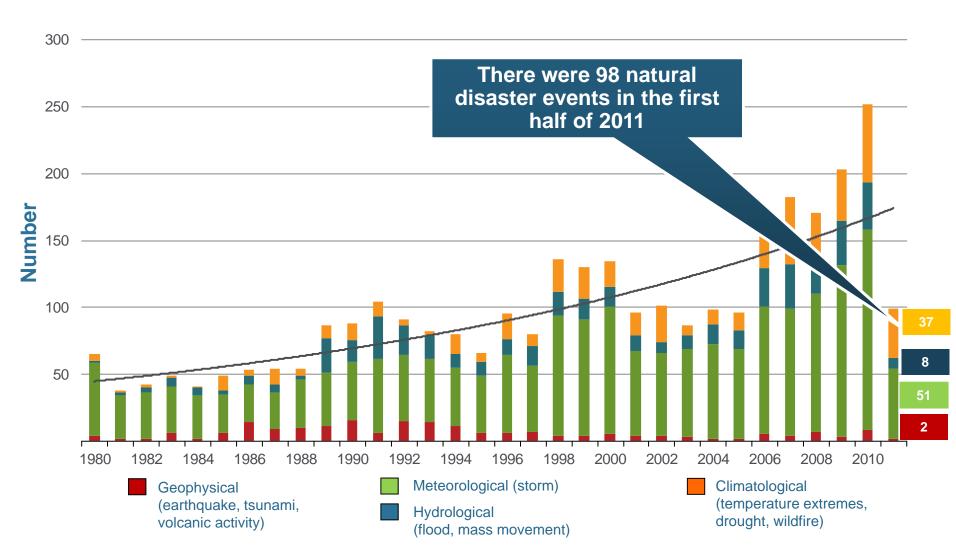
Sources: Property Claims Service/ISO; Insurance Information Institute.

^{*}Estimate through Nov. 1, 2011.

Natural Disasters in the United States, 1980 – 2011*



Number of Events (Annual Totals 1980 – 2010 and First Half 2011)

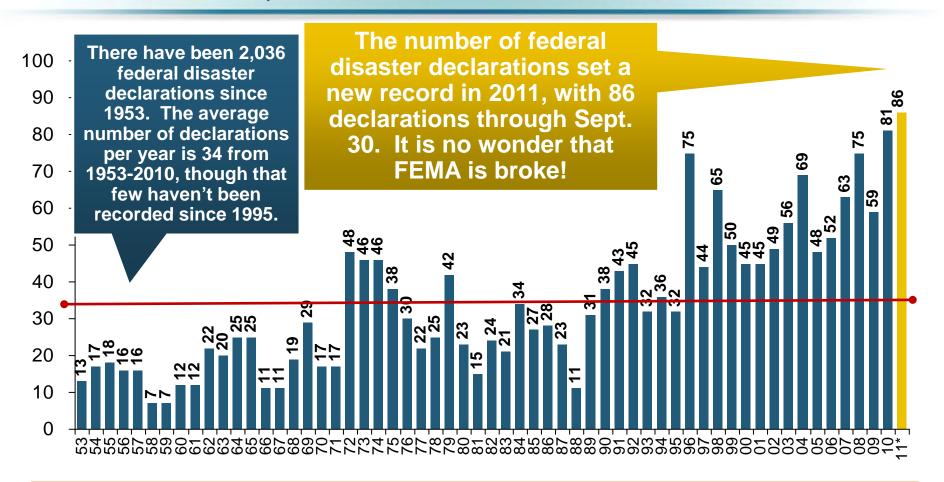


*Through June 30.

Source: MR NatCatSERVICE

Number of Federal Disaster Declarations, 1953-2011*





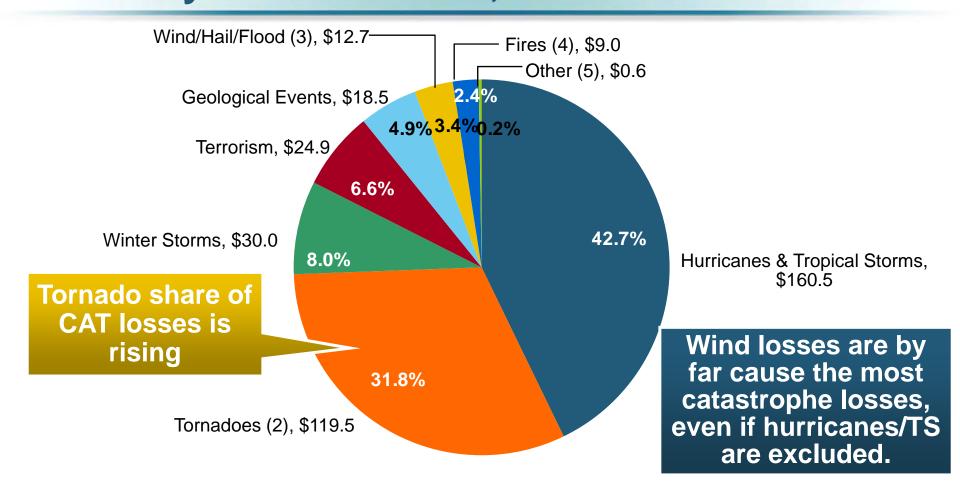
The Number of Federal Disaster Declarations Is Rising and Set a New Record in 2011

Source: Federal Emergency Management Administration: http://www.fema.gov/news/disaster-totals-annual.fema; Insurance Information Institute.

^{*}Through September 30, 2011.

Inflation Adjusted U.S. Catastrophe Losses by Cause of Loss, 1990–2011:H1¹





- 1. Catastrophes are defined as events causing direct insured losses to property of \$25 million or more in 2009 dollars.
- 2. Excludes snow.
- 3. Does not include NFIP flood losses
- Includes wildland fires
- 5. Includes civil disorders, water damage, utility disruptions and non-property losses such as those covered by workers compensation. Source: ISO's Property Claim Services Unit.

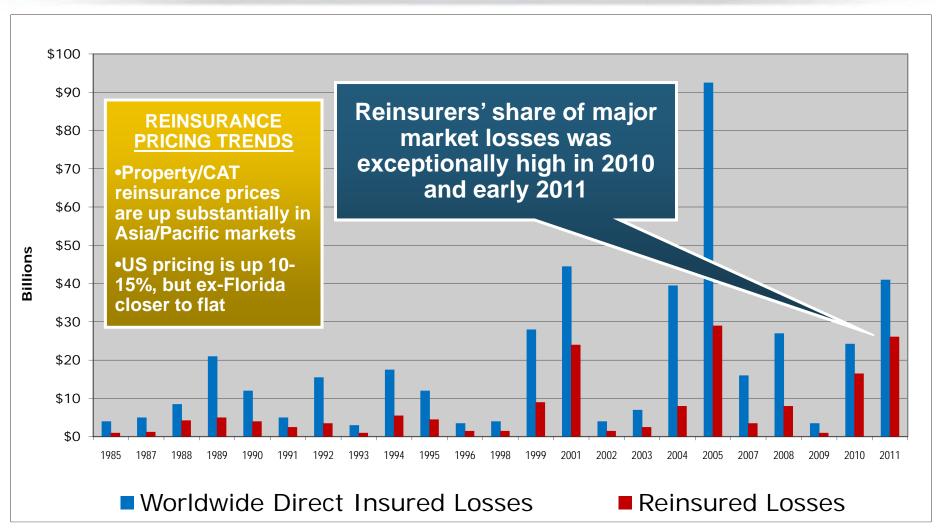


GLOBAL REINSURANCE MARKET CONDITIONS

Record Global Catastrophes Activity is Pressuring Pricing

Significant Market Losses, 1985-2011*





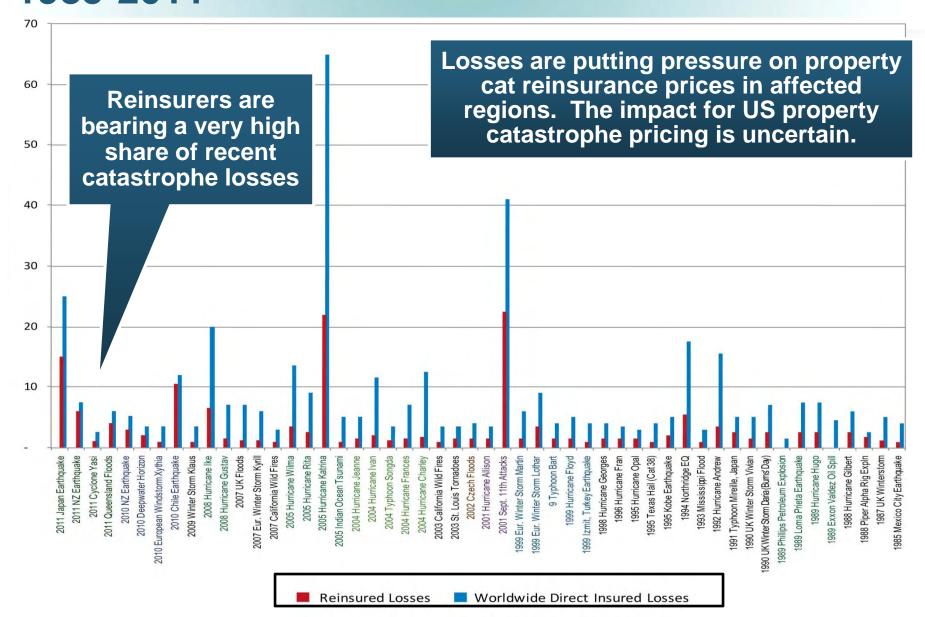
Source: Holborn; RAA.

* 2011 events are as of March 31 and are preliminary and may change as loss estimates are refined further.

Significant Market Losses by Event, 1985-2011*

Losses in \$Billions

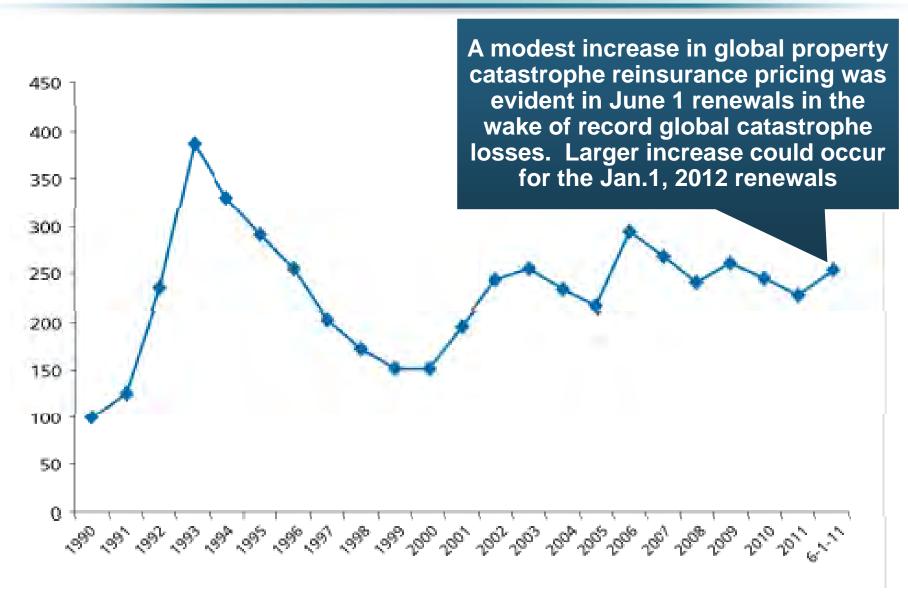




Source: Holborn, RAA. *2011 events as of March 31 are preliminary and may change as loss estimates are refined further.

Global Property Catastrophe Rate on Line Index, 1990-2011 YTD (6/1/11)

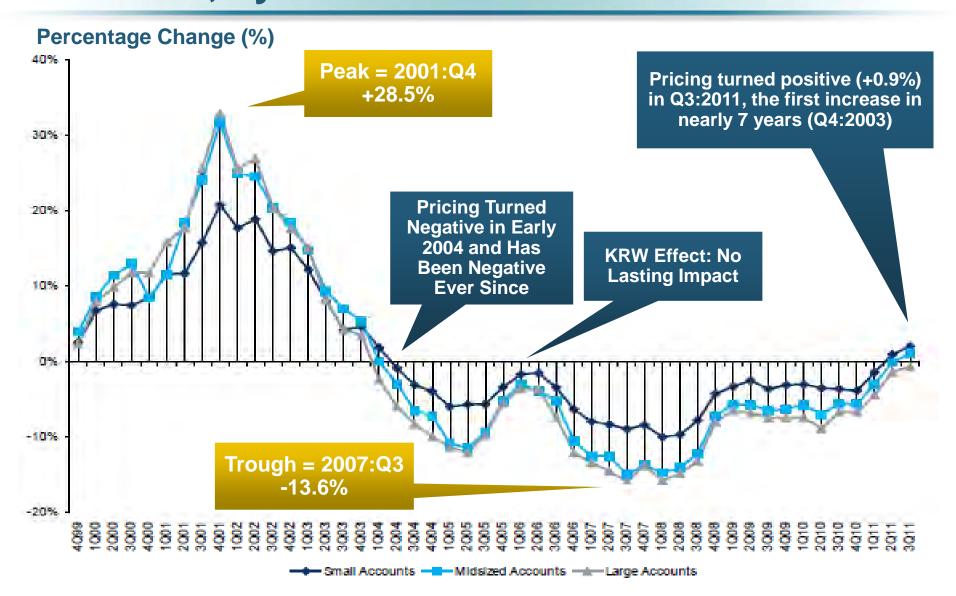




Source: Guy Carpenter, GC Capital Ideas.com, September 26, 2011.

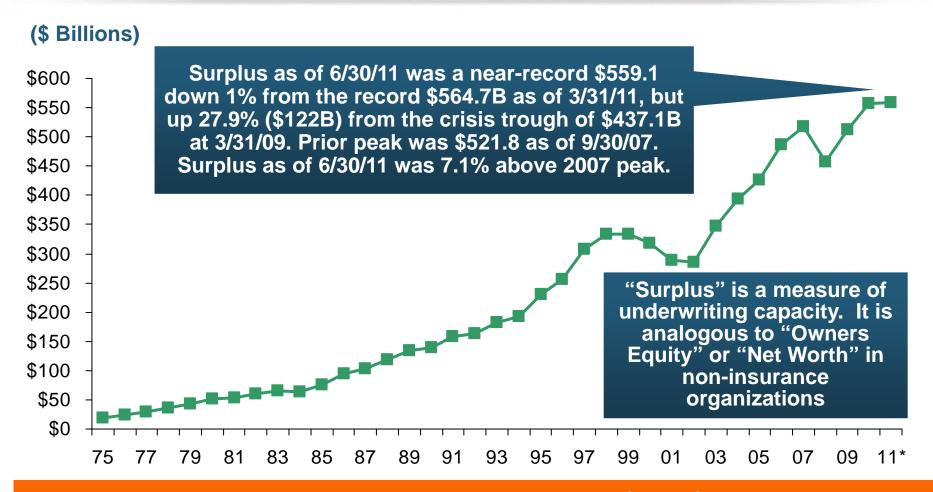
Change in US Commercial Rate Renewals, by Account Size: 1999:Q4 to 2011:Q3





US Policyholder Surplus: 1975–2011*





The Premium-to-Surplus Ratio Stood at \$0.78:\$1 as of 6/30/11, A Near Record Low (at Least in Recent History)**

Source: A.M. Best, ISO, Insurance Information Institute.

^{*} As of 6/30/11.

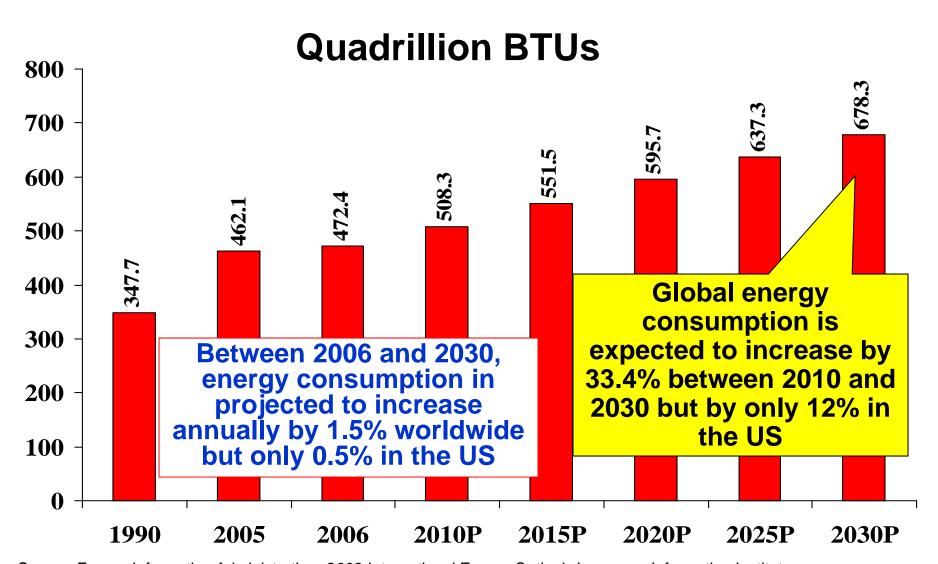


Much Uncertainty Exists in the World, But Energy Demand Grows Under All Scenarios

Energy is One of the Few Major Markets/Industries With Clear Growth Long-Term Trends

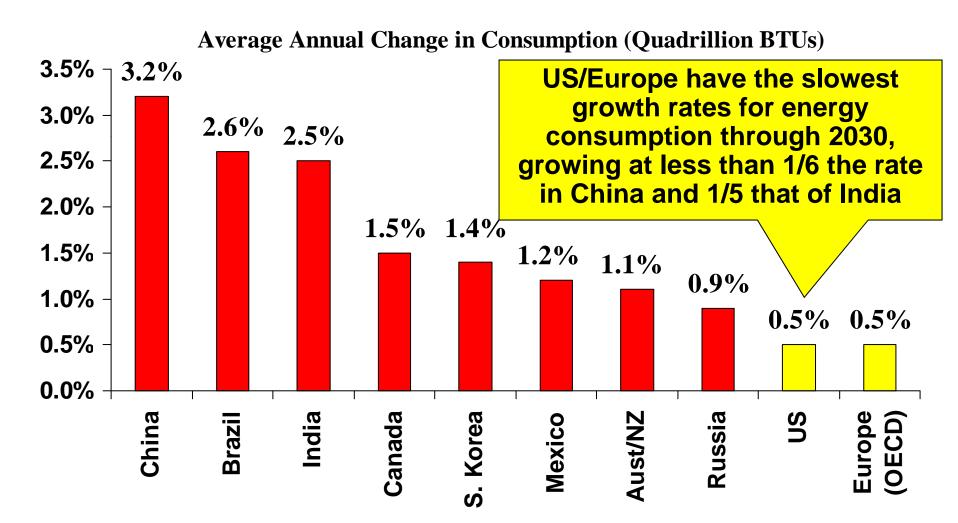
World Primary Energy Consumption, 1990-2030P





Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information Institute.

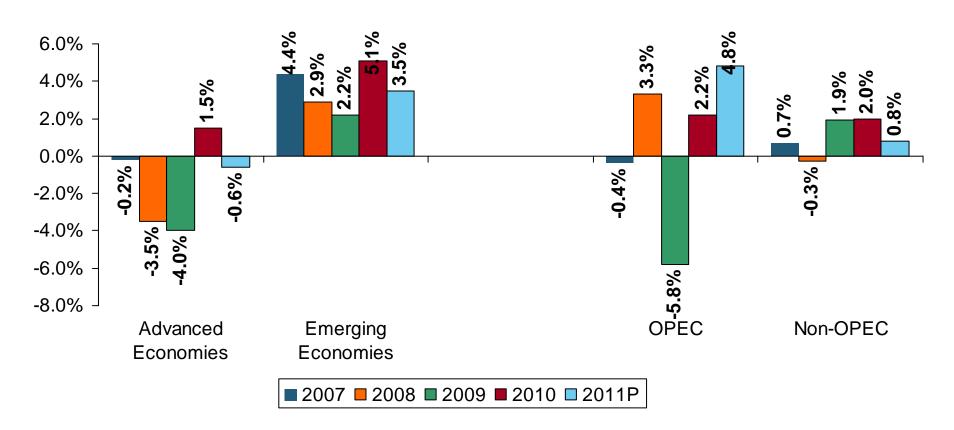
Avg. Annual Change in Total Energy Consumption by Country/Region:2006-2030P III INSURANCE INFORMATION INSTITUTE



Global Oil Demand and Production, by Region

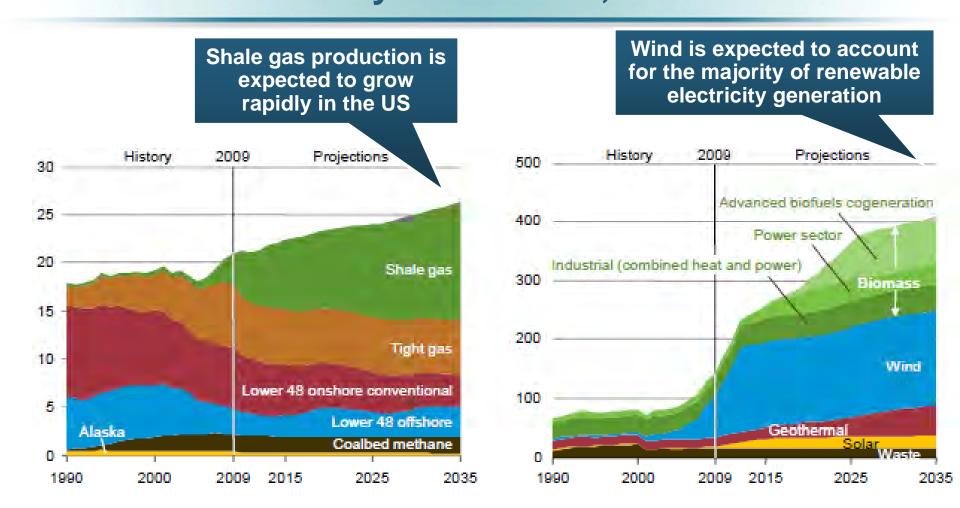


Percentage Change (%)



Oil Demand in Advanced Economies is Weak but Production Gains Continue to Satisfy Demand in Emerging Countries

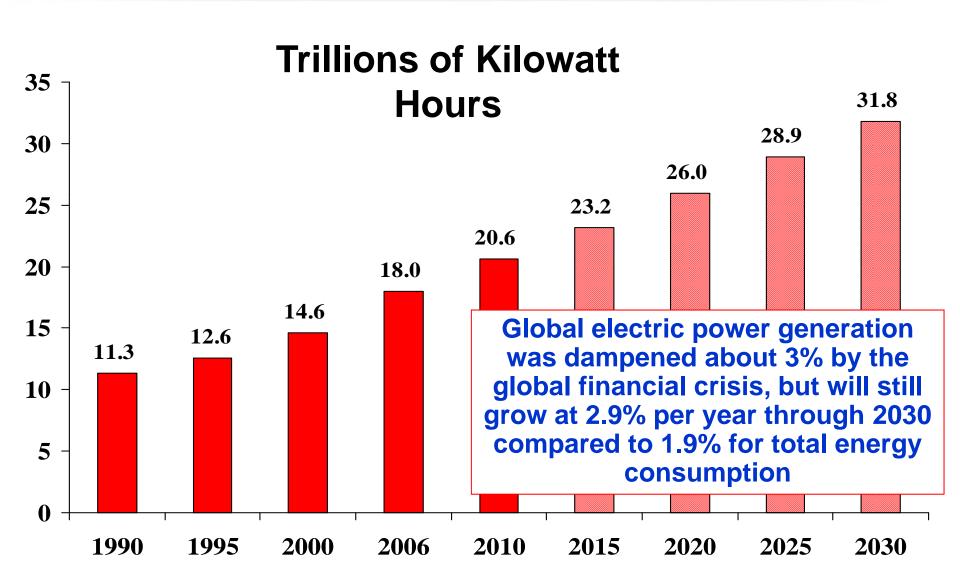
US Natural Gas Production and Non-Hydro Renewable Electricity Generation, 1990-2035



Source: US Energy Information Administration, Annual Energy Outlook 2011; Insurance Information Institute.

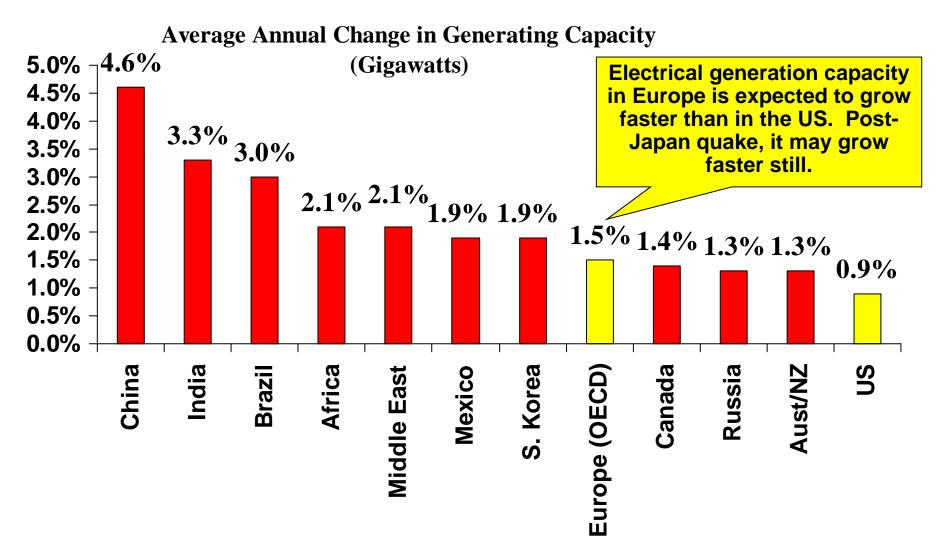
World Net Effective Electric Power Generation, 1990-2030P





Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information

Avg. Annual Change in Electricity Generating Insurance Information Capacity by Country/Region:2006-2030P



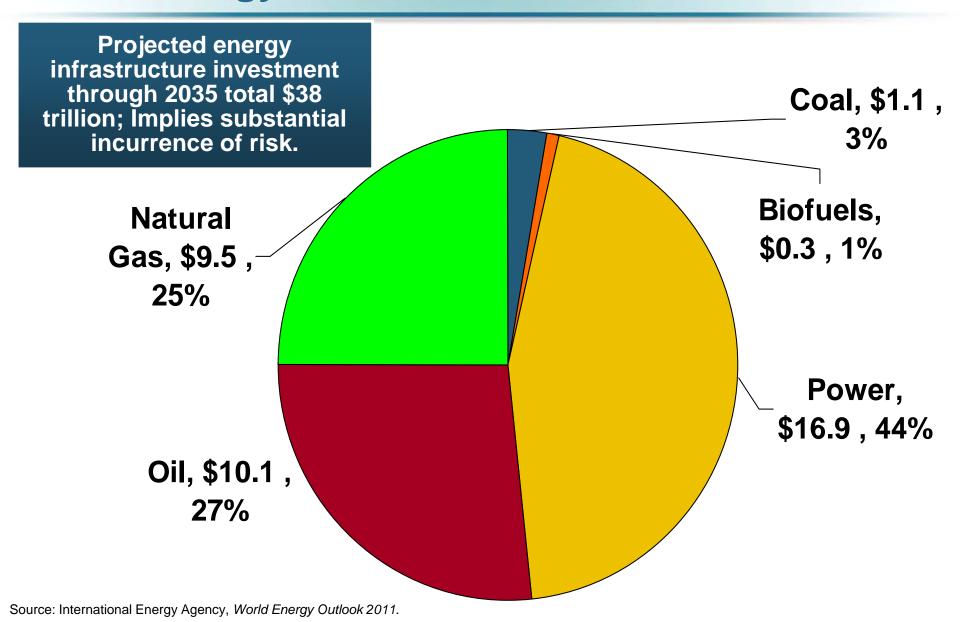


Massive Investments in Global Energy Infrastructure Are Needed

Upgrading an Antiquated Energy Infrastructure is Also Critical for Future Energy Security

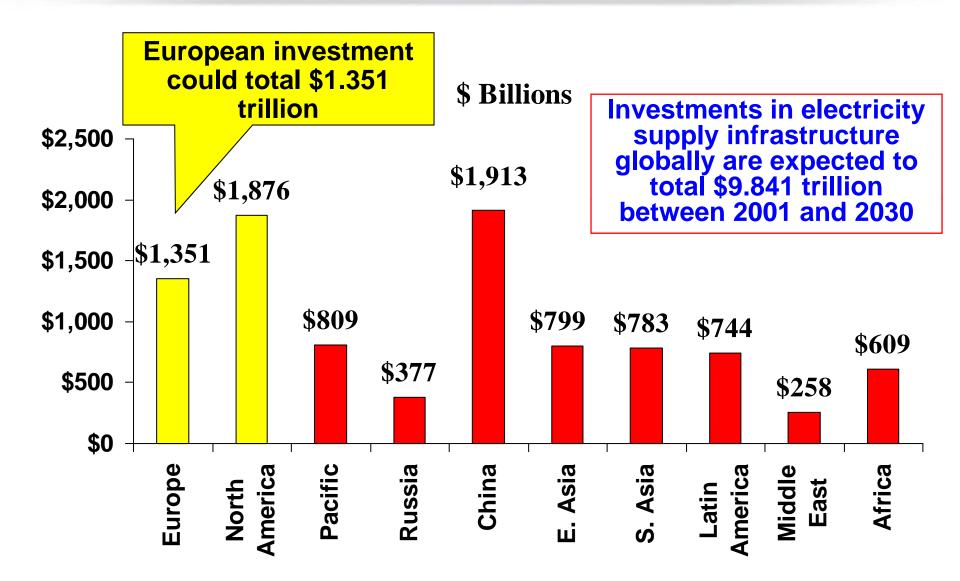
Cumulative Projected Investment in Global Energy Infrastructure, 2011-2035 (\$ Trill.)





Electricity Supply Infrastructure: Despite Crisis, Huge Investments Needed Along With Insurance: 2001-2030 (Est.)





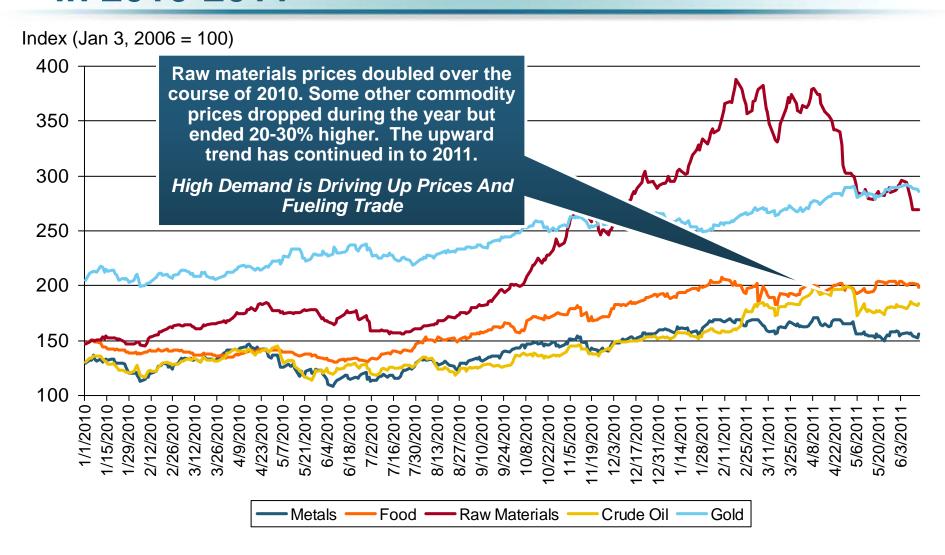


Oil Demand Will Rise, Oil Prices Will Rise Still Faster

Long-Run Demand and Price Dynamics Remain Strong for Oil and Associated Insurance Markets

Commodity Price Changes in 2010-2011*

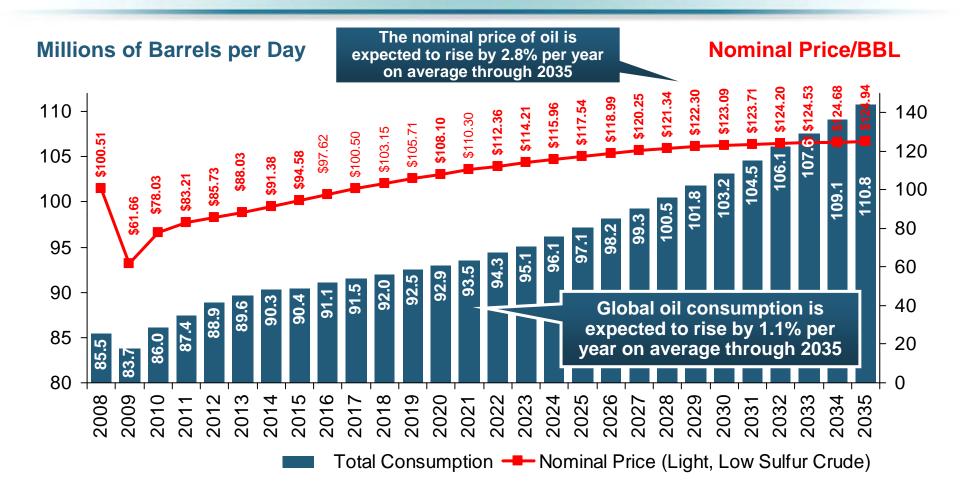




^{*}data are through June14, 2011 Source: International Monetary Fund World Economic Outlook June 2011 update at http://www.imf.org/external/pubs/ft/weo/2010/update/01/data/figure 2.csv

Global Oil Consumption and Price, 2008 – 2035F





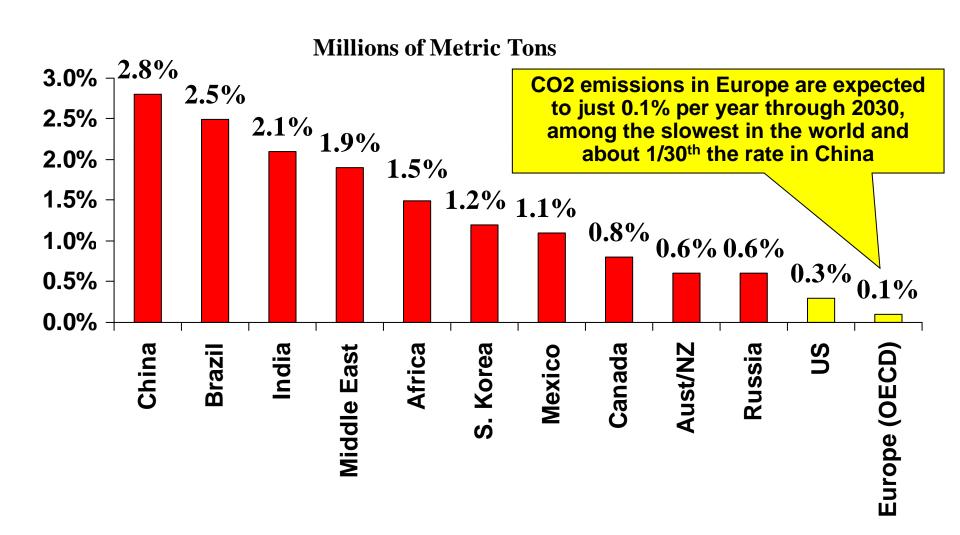
Oil Will Become Relatively More Expensive Over Time, With Price Increases Outstripping Income Growth in Many Parts of the World



Efforts to Reduce Global Carbon Emissions Have Weakened Since 2008

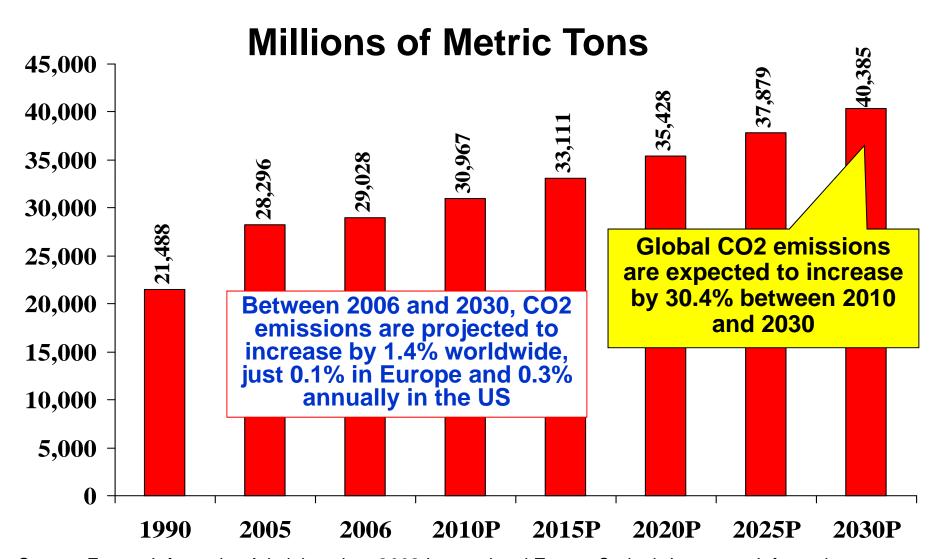
Global Financial Crisis, Japan Nuclear Experience, Politics, Economics Have All Taken Their Toll

Avg. Annual Change in Carbon Dioxide Emissions by Country/Region:2006-2030P



Global Carbon Dioxide Emissions, 1990-2030P



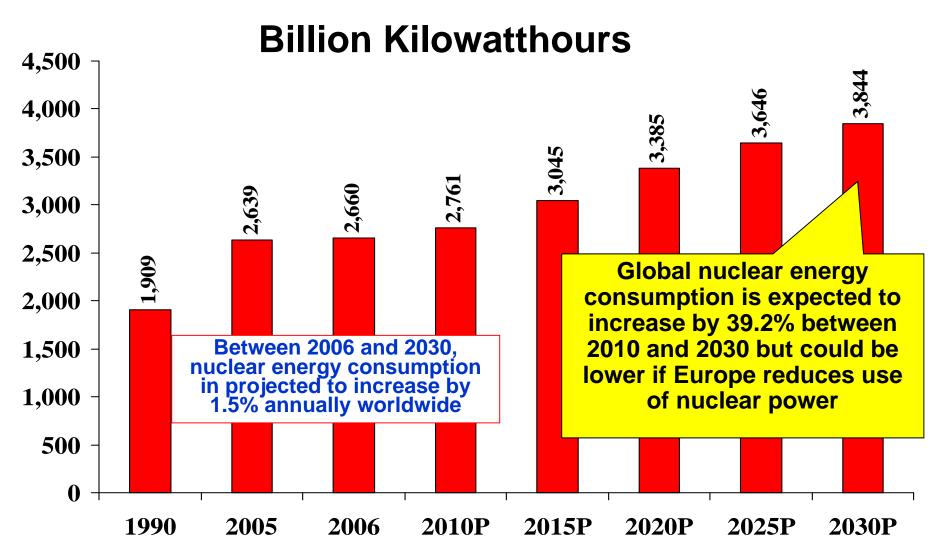


Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information

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World Nuclear Energy Consumption, 1990-2030P

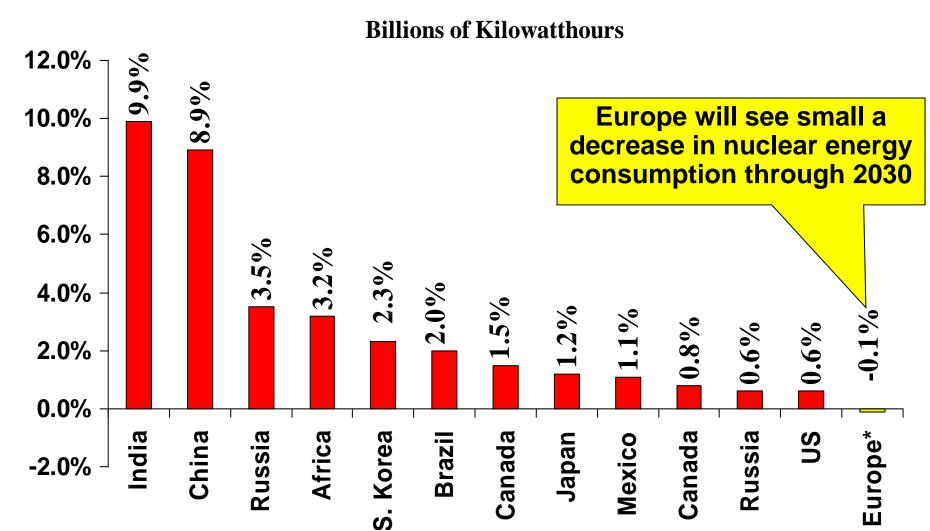




Source: Energy Information Administration, 2009 International Energy Outlook, Insurance Information Institute.

Avg. Annual Change in Nuclear Energy Consumption by Country/Region: 2006-2030P





*OECD Countries.

Source: Energy Information Administration, 2009 International Energy Outlook, Ins. Info. Institute



As Energy Demand Rises, Exploration and Distribution Risks Abound

Deepwater Horizon (Macondo) Will Not Be the Last Major Energy Market Catastrophe

After Deepwater Horizon...



- "Deepwater energy exploration and production, particularly at the frontiers of experience, involves risks for which neither industry nor government has been adequately prepared, but for which they can and must be prepared in the future."
 - National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, January 2011.

10 Most Expensive Operators Expense (OEE) Losses in History



Year	Туре	Location, Country	OEE Indexed US\$
2010	Rig (Deepwater)	Gulf of Mexico, USA	\$2,000,000,000
2005	Platform	Gulf of Mexico, USA	636,047,269
1989	Well	North Sea, Norway	396,419,527
2008	Platform	Gulf of Mexico, USA	384,080,640
2005	Platform	Gulf of Mexico, USA	341,560,173
1984	Well	Nova Scotia, Canada	320,593,818
1988	Platform	North Sea, UK	308,109,489
1987	Platform	Gulf of Mexico, USA	264,476,529
1975	Well	Dubai, UAE	246,250,219
2004	Rig	Mediterranean, Egypt	230,104,683

Deepwater Is By Far the Most Expensive OEE Loss in Global History, Even
After Adjusting for Inflation

Source: Willis Energy Loss Database, April 1, 2011; Insurance Information Institute.

Largest International Oil Well Blowouts by Volume



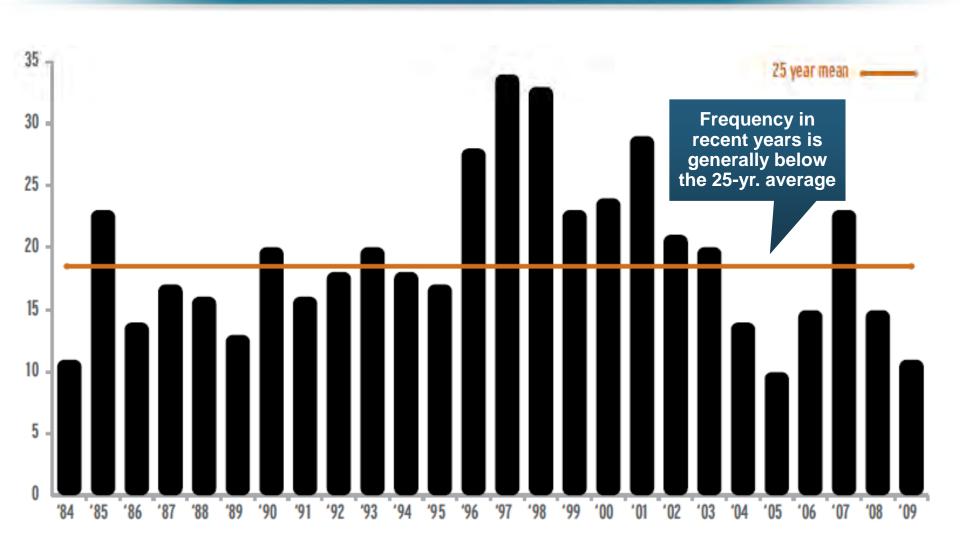
Date	Well	Location	Bbl Spilled
April 20 2010- July 2010	Deepwater Horizon	Gulf of Mexico, USA	est. 4,900,000 thru July 15*
June 1979-April 1980	Ixtoc I	Bahia del Campeche, Mexico	3,300,000
October 1986	Abkatun 91	Bahia del Campeche, Mexico	247,000
April 1977	Ekofisk Bravo	North Sea, Norway	202,381
January 1980	Funiwa 5	Forcados, Nigeria	200,000
October 1980	Hasbah 6	Gulf, Saudi Arabia	105,000
December 1971	Iran Marine International	Gulf, Iran	100,000
January 1969	Alpha Well 21 Platform A	Pacific, CA, USA	100,000
March 1970	Main Pass Block 41 Platform C	Gulf of Mexico	65,000
October 1987	Yum II/Zapoteca	Bahia del Campeche, Mexico	58,643
December 1970	South Timbalier B-26	Gulf of Mexico, USA	53,095

^{*}Based on official estimate by U.S. scientific teams of 53,000 barrels per day leaking from BP well immediately preceding it being capped on July 15. Includes offset for capture of approximately 800,000 barrels of oil prior to capping of well.

Source: American Petroleum Institute (API), 09/18/2009; http://www.api.org/ehs/water/spills/upload/356-Final.pdf and updates from the Insurance Information Institute.

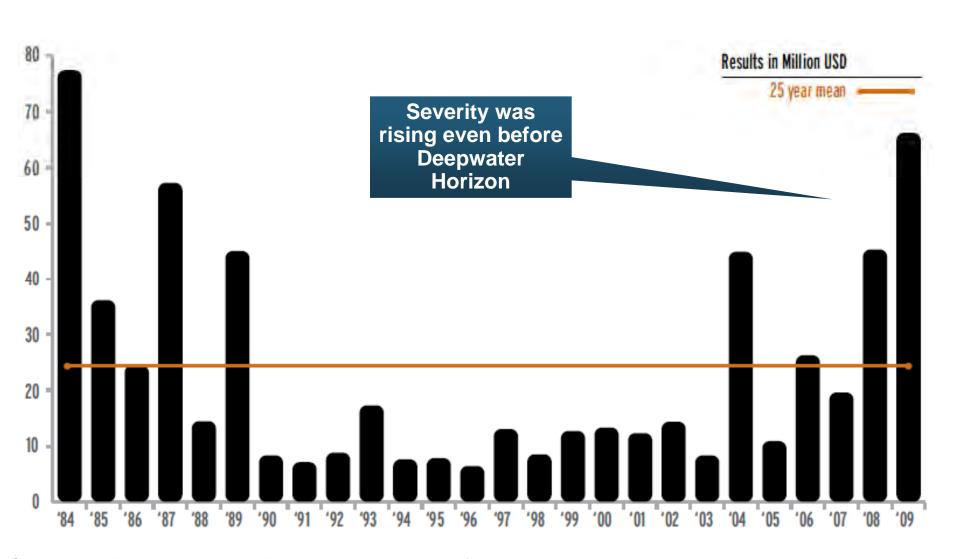
Global Offshore Blowouts, 1984 - 2009: Frequency





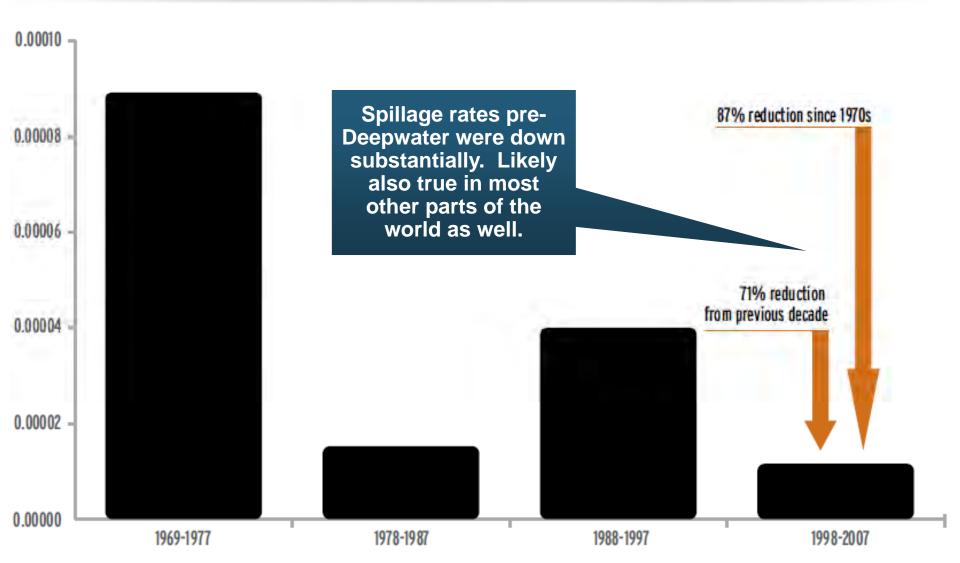
Global Offshore Blowouts, 1984 - 2009: Severity





Annual Average US Offshore Spillage per Unit Barrel, 1969-2007

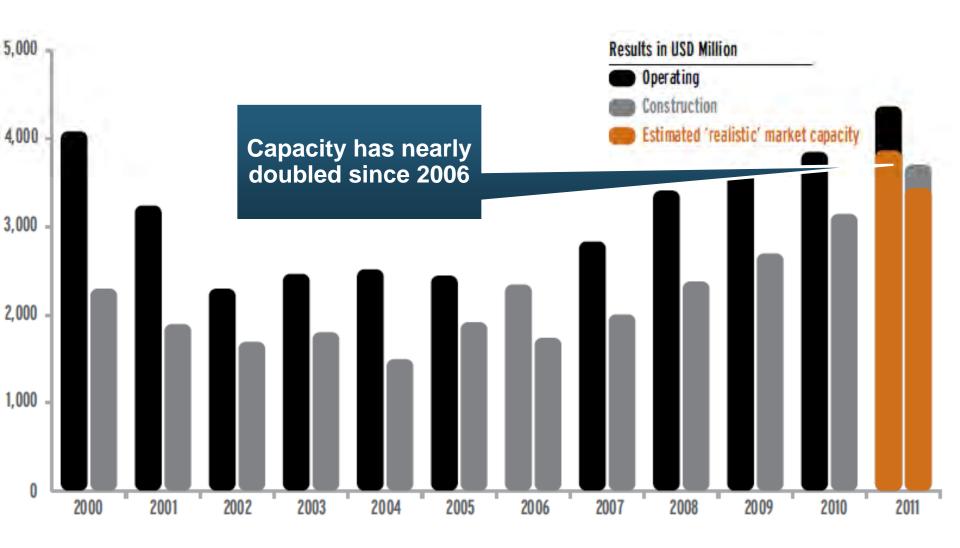




Source: American Petroleum Institute Analysis of U.S. Oil Spillage, 2009, from Willis Energy Market Review, April 2011; Insurance Information Institute.

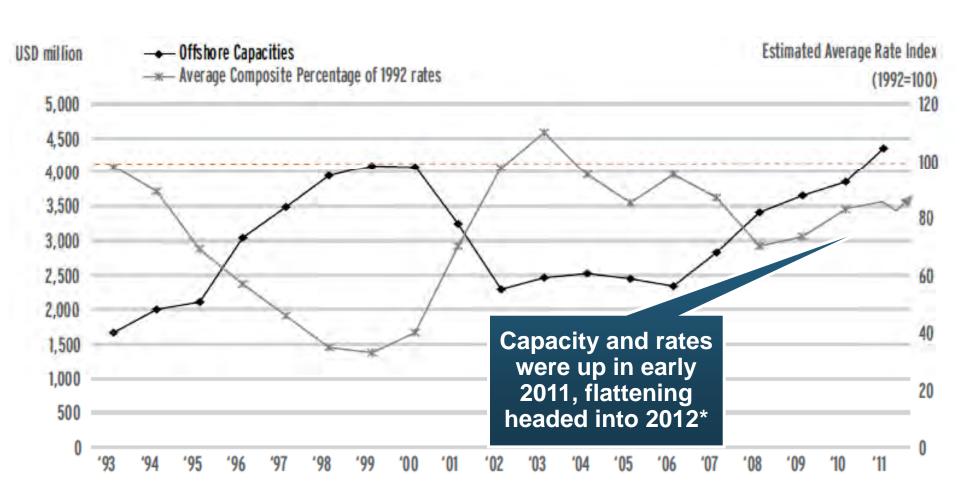
Upstream Insurer Capacities, 2000-2011 (Excluding Gulf of Mexico Windstorm)





Energy Insurer Capacities & Average Rating Levels, 1993-2011 (Excl. GoM Wind)





*Willis Marketplace Realities, October 2011

Source: Willis Energy Market Review, April 2011; Insurance Information Institute.



QUESTIONS?



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Thank you for your time and your attention!

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