

Global Economic Turmoil, **Catastrophic Loss and Insurance: Implications for Risk Management** in the Post-Crisis World **American Institute of Marine Underwriters Insurance Issues Seminar New York, NY** Download at www.iii.org/presentations Robert P. Hartwig, Ph.D., CPCU, President & Economist Insurance Information Institute 110 William Street New York, NY 10038

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Presentation Outline



Is the World Becoming a Riskier Place?

- Recent Events and Implications for the Global P/C (Re)Insurance Industry
- The Global Financial Crisis, Risk and the New World Order

Global Economic and Trade Outlook

- The Unfortunate Nexus: Opportunity, Risk & Instability
 - Future growth is necessarily fraught with greater risk
 - Types, magnitude of risk inherent in future growth opportunities

Reshuffling the Global Economic Deck

- The Ascendency of China
- Foreign Direct Investment (FDI) and insurance exposure/demand
- P/C Insurance Financial Overview & Outlook
- Q&A



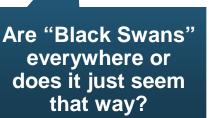
What in the World Is Going On?

Is the World Becoming a Riskier Place?

Are We Really Crawling Out of the Abyss or Falling Into a New One?

Uncertainty, Risk and Fear Abound

- Resurgent Terrorism Risk (e.g., Bin Laden Killing)
- Record Tornado Activity & Flooding in the US
- Japan, New Zealand, Haiti, Chile Earthquakes
- Political Upheaval in the Middle East
- Echoes of the Financial Crisis
- Housing Crisis
- US Debt and Budget Crisis
- Sovereign Debt & Currency Crises
- Inflation
- Runaway Energy & Commodity Prices
- Era of Fiscal Austerity
- Reshuffling the Global Economic Deck
- China Becomes #2 Economy in the World
- Nuclear Fears
- Manmade Disasters (e.g., Deepwater Horizon)







Mississippi River Floods: A Threat to Navigation







Memphis (May 5, 2011)—with the swollen Mississippi flooding fields in Arkansas across the river. The river is normally ½ mile across but is now 3 miles wide in places. Mississippi River just south of Memphis (May 5, 2011). TN is to the right, AR to the left. The was expected to crest on May at 48 ft., 14 ft. above flood stage and near the record of 47.8 ft. set in 1937

Sources: Photos by Robert Hartwig, Insurance Information Institute, May 5, 2011.



Terrorism, Insurance and the Killing of Osama bin Laden

Is the World Less Risky and Do We Still Need the Terrorism Risk Insurance Program?

Bin Laden, Justice and the Future of Terrorism, Risk and Insurance







Bin Laden is Dead and Justice Is Served, But What Are the Implications for the P/C Insurance Industry?

Sources: Insurance Information Institute.

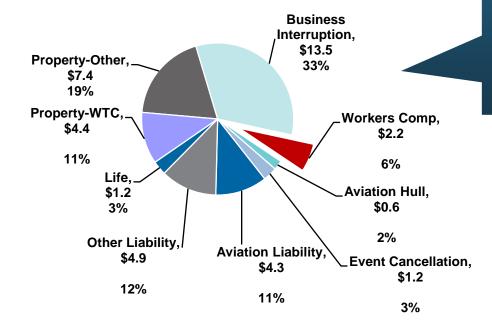
Distribution of Insured September 11 Losses by Line (\$ Billions, 2009 Dollars)

9/11 losses totaled \$40.0 billion in 2010 dollars (\$32.5 billion in 2001 dollars)

9/11 was the largest remains the largest insured loss in global history until Hurricane Katrina in 2005

(1) Loss total does not include NYC March 2010 settlement of up to \$657.5 million to compensate about 10,000 Ground Zero workers.

(2) Sum of segment totals may not equal overall total due to rounding. Adjusted to 2010 dollars using the Bureau of Labor Statistics (BLS) Inflation Calculator.





Thwarted and Failed Terrorism Attempts Against the US in 2009 and 2010



Date	Location	Event
December 8, 2010	Baltimore, MD	Attempted bombing of Armed Forces recruiting center by U.S. citizen Antonio Martinez, aka Muhammad Hussain
November 26, 2010	Portland, OR	Attempted bombing at Christmas tree lighting ceremony in downtown Portland by naturalized U.S. citizen Mohamed Osman Mohamud
October, 2010	Washington D.C.	Attempted plot to bomb D.Carea metro stations
May 1, 2010	New York City, NY	Attempted SUV bombing in Times Square, New York City, by naturalized U.S. citizen Faisal Shahzad
December 25, 2009	Over Detroit, MI	Attempted bombing of Northwest Airlines passenger jet over Detroit by underwear bomber Umar Farouk Abdulmutallab
September, 2009	New York City, NY	U.S. resident Najibullah Zazi and others charged with conspiracy to use weapons of mass destruction in New York City
September, 2009	Springfield, IL	Attempted plot to detonate a vehicle bomb at the federal building in Springfield, IL
September, 2009	Dallas, TX	Attempted bombing of skyscraper in Dallas, TX
May, 2009	New York City, NY	Foiled plot to bomb Jewish synagogue and shoot down military planes in New York City
May, 2009	Various U.S. targets	Conviction of Liberty City six for conspiring to plan attacks on U.S. targets, including Sears Tower, Chicago

There Have Been Numerous Unsuccessful Attempts by Terrorists to Attack the US Over the Past 2 Years

Sources: *Terrorism Risk: A Reemergent Threat,* Insurance Information Institute (<u>http://www.iii.org/white_papers/terrorism-risk-a-reemergent-threat-2011.html</u>); Federal Bureau of Investigation.

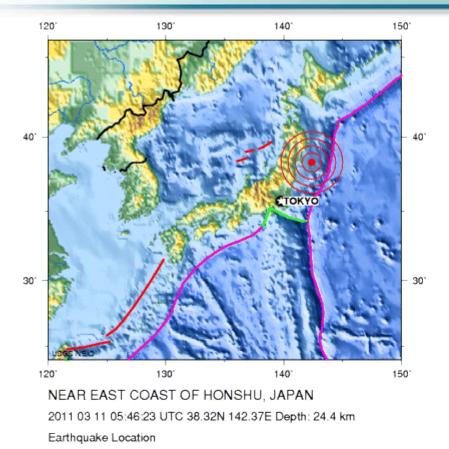


Summary of Japan Earthquake & Impacts on US P/C Markets

The March 11 Quake & Other Major CATs Are Big Events, But Will They, Can They Impact US P/C Markets?

Location of March 11, 2011 Earthquake Near Sendai, Honshu, Japan





LOCATION

130 km (80 miles) E of Sendai, Honshu, Japan
178 km (110 miles) E of Yamagata, Honshu, Japan
178 km (110 miles) ENE of Fukushima, Honshu, Japan
373 km (231 miles) NE of TOKYO, Japan

Source: US Geological Service; Insurance Information Institute.

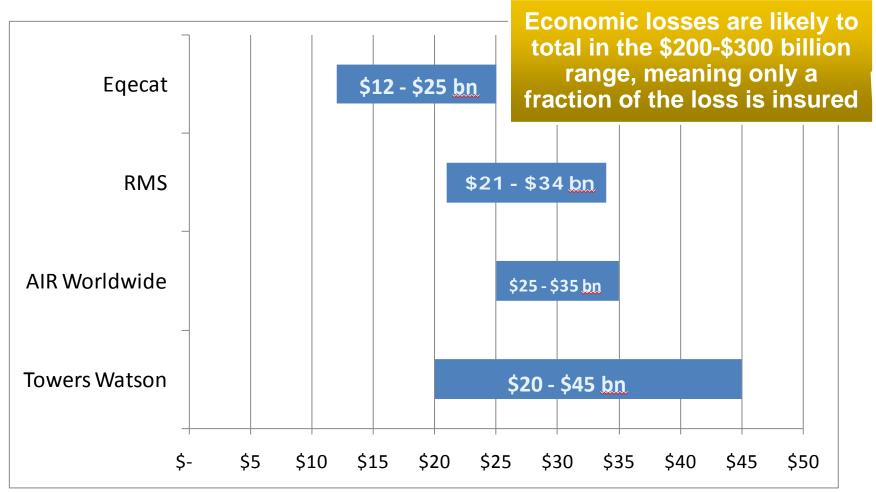
March 11 Earthquake Facts as of 4/21/2011

- Magnitude 9.0 earthquake struck Japan at 2:46PM local time (2:46AM Eastern) off northeast coast of Honshu, 80 miles east of Sendai
- Quake is among the 5 strongest in recorded history and the strongest in the 140 years for which records have been kept in Japan
- 12,000+ fatalities
- Economic loss: \$100 \$300 bn
- Insured losses up to \$45 bn
- Fukushima Nuclear Plant threat level raised to Category 7 on April 11 (highest, same as Chernobyl)
- Significant tsunami damage was recorded in Japan; relatively minor damage on the U.S. West Coast

Insured Japan Earthquake Loss Estimates*



(Insured Losses, \$ Billions)

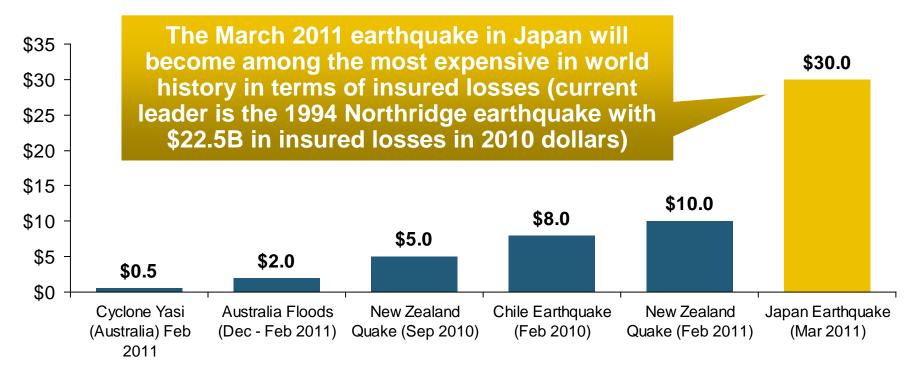


*As of April 21, 2011. Towers Watson estimate includes \$3.0 (low) to \$4.9 billion (high) in life insurance losses. RMS estimate includes insured life/health losses of \$3 to \$8 billion.

Sources: AIR Worldwide, Eqecat, RMS, Towers Perrin; Insurance Information Institute.

Recent Major Catastrophe Losses

(Insured Losses, \$US Billions)

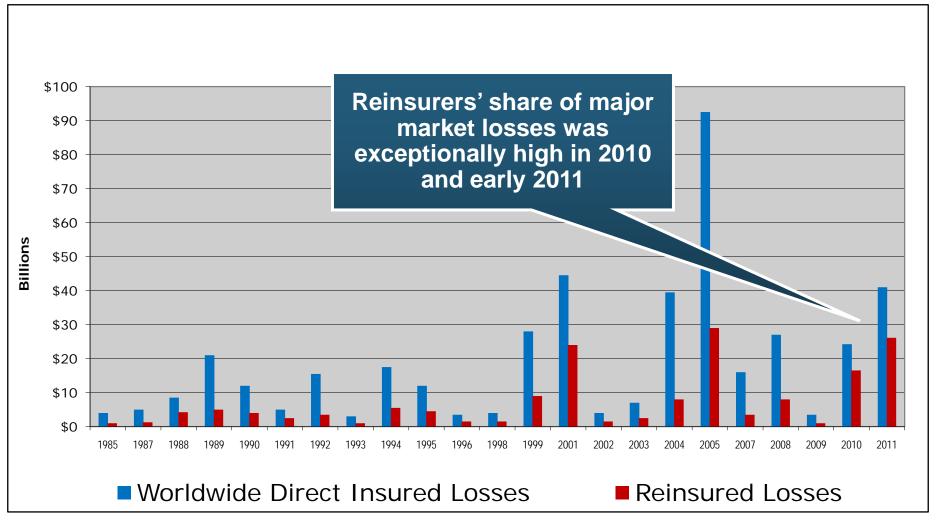


Insured Losses from Recent Major Catastrophe Events Exceed \$55 Billion, an Estimated \$53 Billion of that from Earthquakes

Sources: Insurance Council of Australia, Munich Re, AIR Worldwide; Insurance Information Institute.

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Significant Market Losses, 1985-2011*



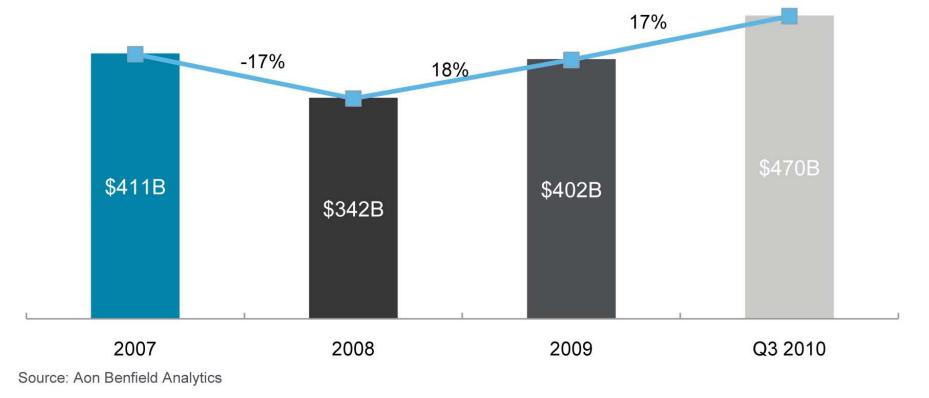
Source: Holborn; RAA.

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

Change in Reinsurer Capital, 2007-2010:Q3



Change in Reinsurer Capital





Potential Impacts of Japan Quake & Other Major CATs on P/C (Re)Insurance Markets

Impacts Could Be Felt Well Beyond Japan

Nonlife (P/C) Insurance Market Impacts of Japan Earthquake



- Little/No Direct Impact for US Primary Insurance Markets
- Primary Insurance: Domestic Japanese Insurers Take Big Losses
- Few US/Foreign Insurers Had Direct Exposure to Japanese P/C Market
 - Low single-digit market share for a small number of companies
 - Not a capital event for any non-Japanese primary insurer

Significant Absorption of Loss by Japanese Government

- Residential earthquake damage
- Nuclear-related property and liability damage
- Significant Impacts for Global Reinsurers
 - Property-Catastrophe covers on Commercial Lines
 - Business Interruption/Contingent Business Interruption
- Currently an Earnings Event for Global Reinsurers
 - Not a capital event: Global reinsurance markets entered 2011 with record capital
- Cost of Property/Cat Reinsurance Rising in Japan, New Zealand, Australia
 - Up for all; Magnitude of increase is sensitive to size of loss
- Reinsurance Coverage Remains Available in Affected Regions
- Marginal Impact of Cost of US Property-Cat Reinsurance
 - Market remains well capitalized and competitive
 - Elevated global cat activity could halt price declines for property/cat reinsurance



Summary of April 2011 Tornado Outbreak

2011 Will Be Among the Most Deadly and Expensive for Tornadoes in History

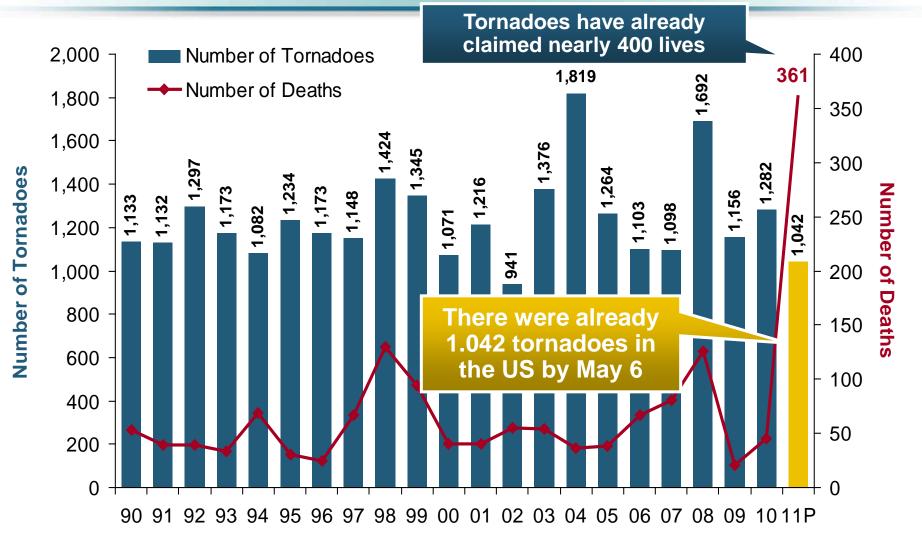
Summary of Recent Tornado Activity



- There Have Been 1,042 Tornadoes Through May 6 in the US
- At least 361 People Have Been Killedd
- The April 27 Tornado Outbreak Killed at Least 342 People
 - Now the 2nd deadliest outbreak in US history (747 killed in march 1925 event)
 - States impacted: AR, TN, LA, MS, GA and especially AL
- Insured Losses Estimated at \$2B to \$5B (Eqecat); \$3.7B \$5.5B (AIR)
- Economic Losses Likely in the \$4 Bill to \$10 Bill Range
- P/C Insurers (and their Reinsurers) Will Settle Tens of Thousands of Home, Business and Auto Claims
- There is Damage to Inland Port Facilities
- P/C Insurance Industry is Very Strong and Will Encounter No Difficulties in Paying these Claims

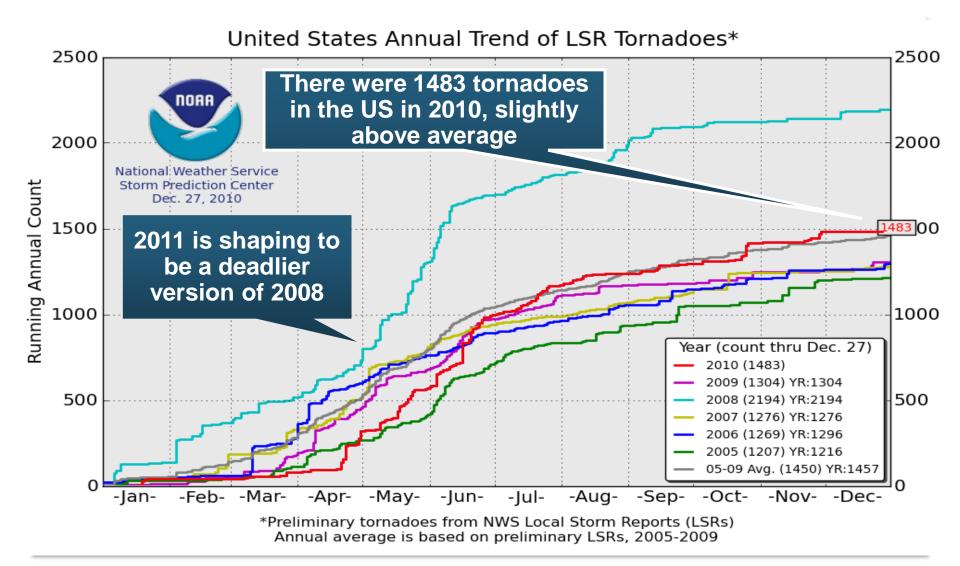
Number of Tornadoes and Related Deaths, 1990 – 2011*





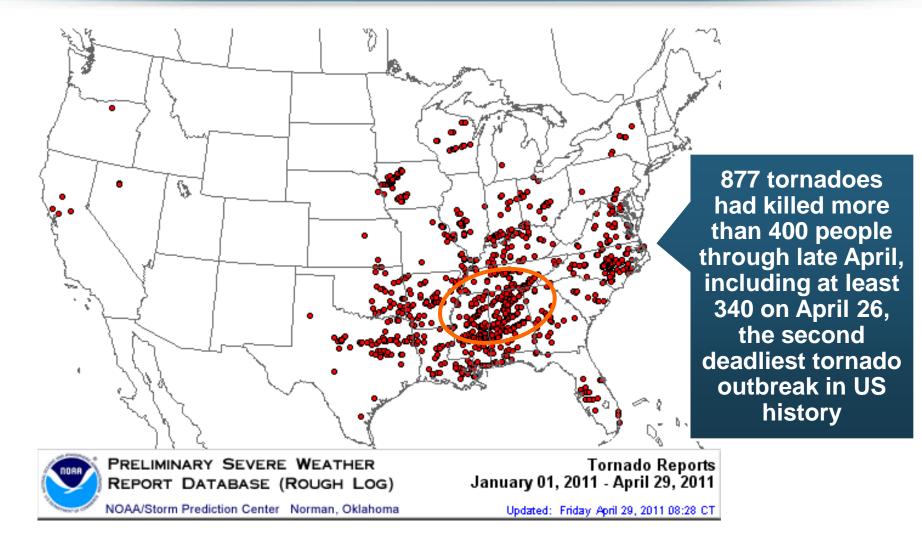
U.S. Tornado Count, 2010





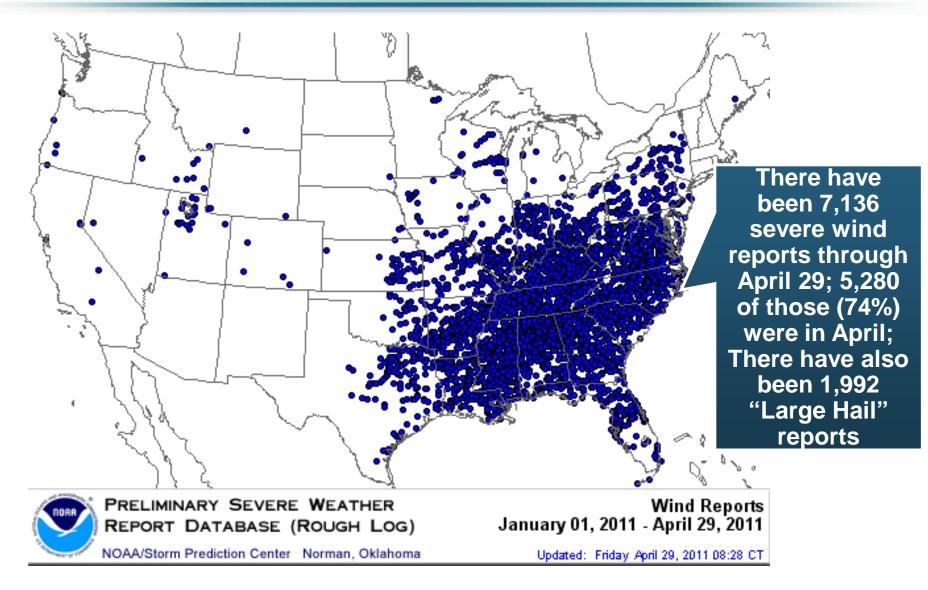
Location of Tornadoes in the US, January 1—April 29, 2011





Severe Wind Reports, January 1—April 29, 2011



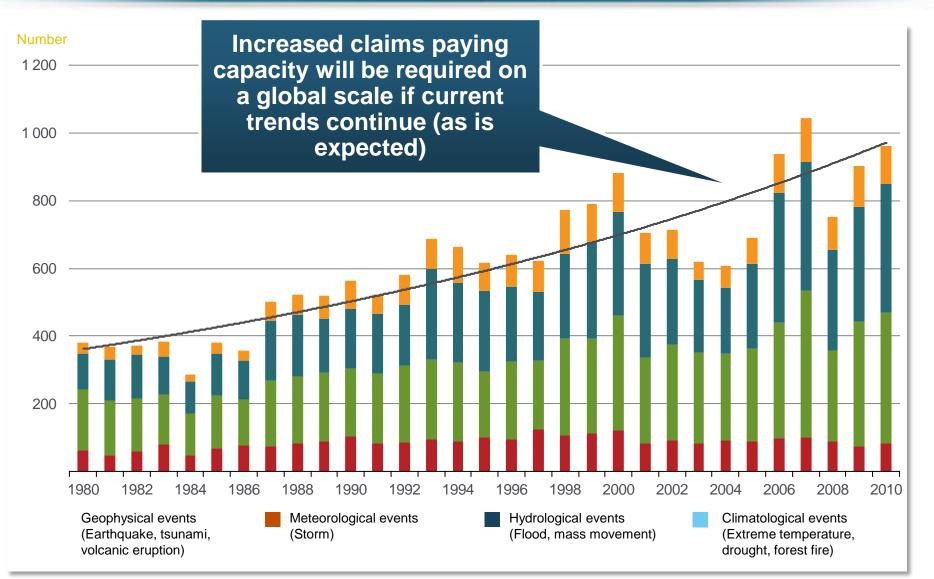




Global Catastrophe Losses Have Interrupted Trade Flows

Ships, Ports Damaged

Natural Catastrophes Worldwide, 1980 – 2010 (Number of events with trend)



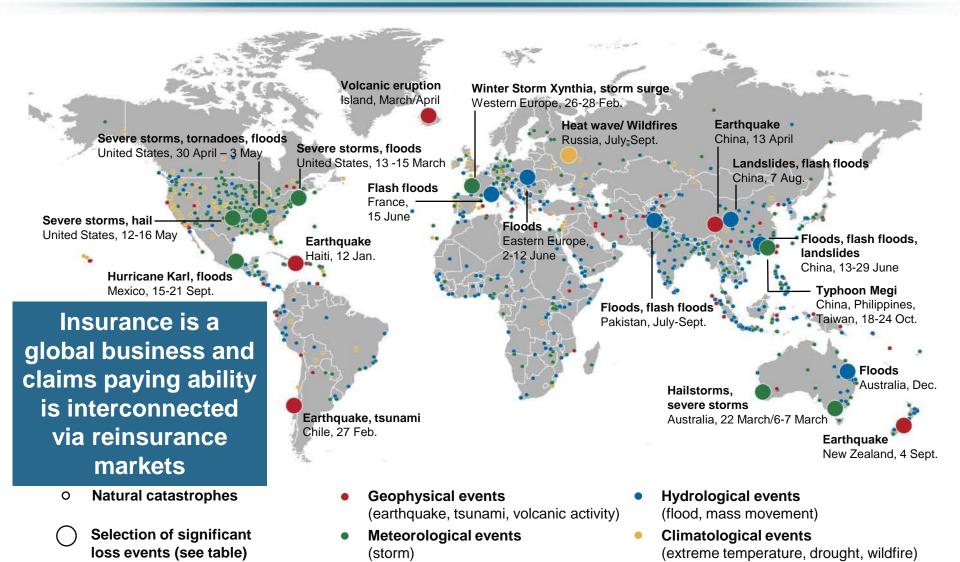
Source: Geo Risks Research, NatCatSERVICE.

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Natural Catastrophes, 2010 950 loss events

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The Global Financial Crisis, Risk and the New World Economic Order

The Crisis Made Insurers' Path to Growth More Challenging/Risky

The New World Order: A New Level of Risk for Business



Best Growth Opportunities are No Longer in Low-Risk Markets (W. Europe, US/Canada, Japan)

Growth Rates are 2-3 Times Higher in Developing World

- Business investment will remain high, much of it in need of insurance
- Investment conditions will remain challenging for decades

Unemployment Rates Are Much Lower in Emerging Economies

Establishment of a middle class and a wealthy upper class

Incomes Are Rising Faster in Emerging Economies

- Fueling demand for goods and services
- Foreign Direct Investment (FDI) and insurance exposure/demand

Immature Institutions Raise Risk/Possible Systemic Risks

Legal system, financial markets, regulation, infrastructure issues

Instability in Emerging Nations Will Remain High

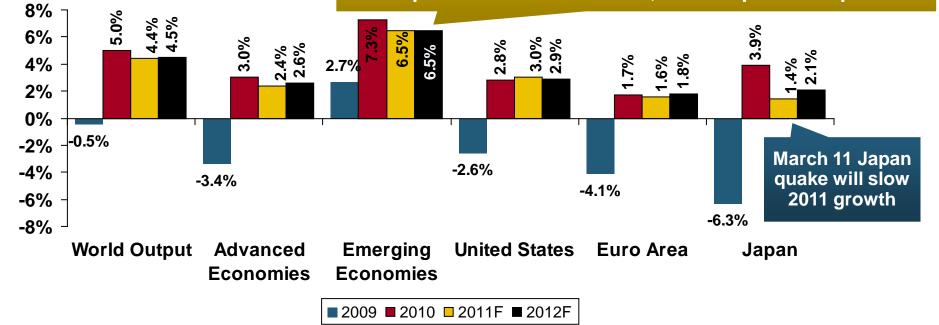
- Political instability; Corruption in some countries
- Economic vulnerability (trade, xrt risk, credit risk, commodities, energy)

Natural Hazard Risks Are Often Elevated w/Minimal Mitigation

World Economic Outlook: 2009-2012F



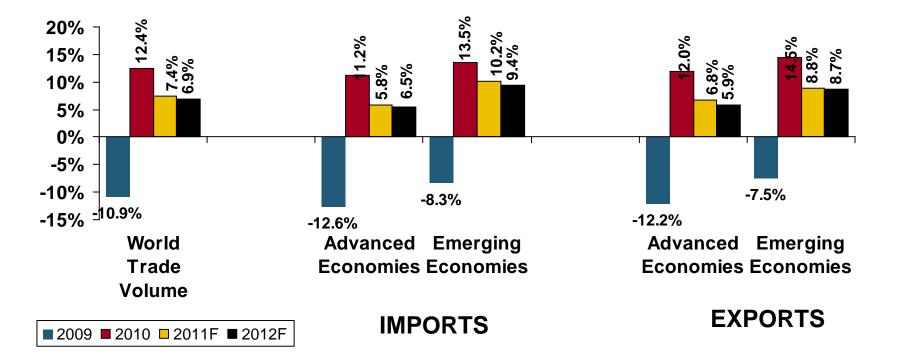
IMF says growth in emerging and developing economies will outpace advanced ones in 2011/12. The impact will be to accelerate the relative growth of insurance exposures outside the US, W. Europe and Japan.



Outlook uncertain: The world economy continues to recover from the global economics, but activity is reviving 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.

Sources: IMF, World Economic Outlook, Apr. 2011; Insurance Information Institute.

World Trade Volume Outlook (Goods and Services): 2009-2012F

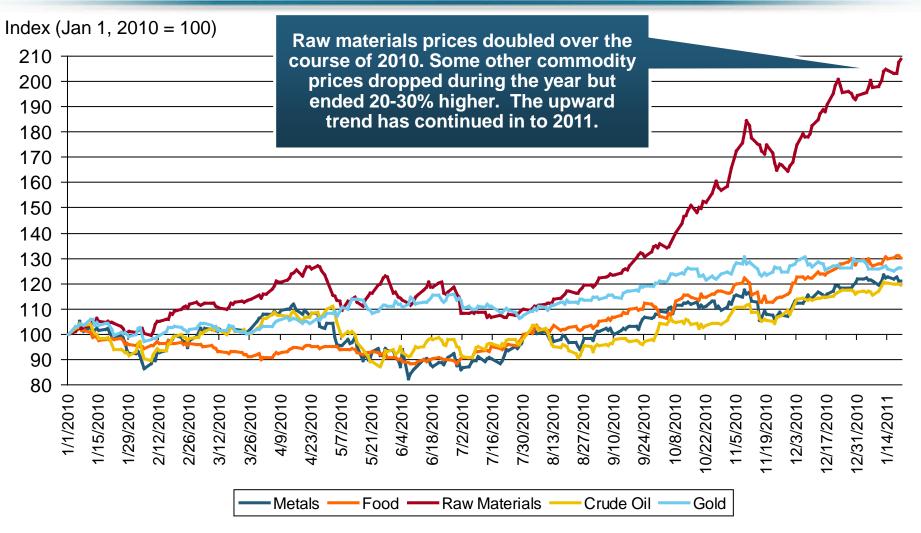


Global trade in flows recovered sharply following the financial crisis, with both imports and exports rising sharply

Sources: IMF, World Economic Outlook, Apr. 2011; Insurance Information Institute.

Commodity Price Changes in 2010-2011*

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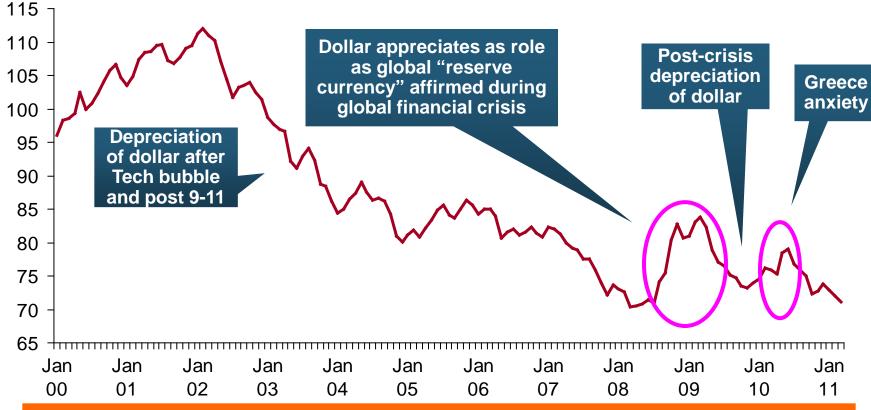


*data are through Jan. 20, 2011 Source: International Monetary Fund World Economic Outlook January 2011 update at <u>http://www.imf.org/external/pubs/ft/weo/2010/update/01/data/figure_2.csv</u>

Trade-Index-Weighted U.S. Dollar Exchange Rate*







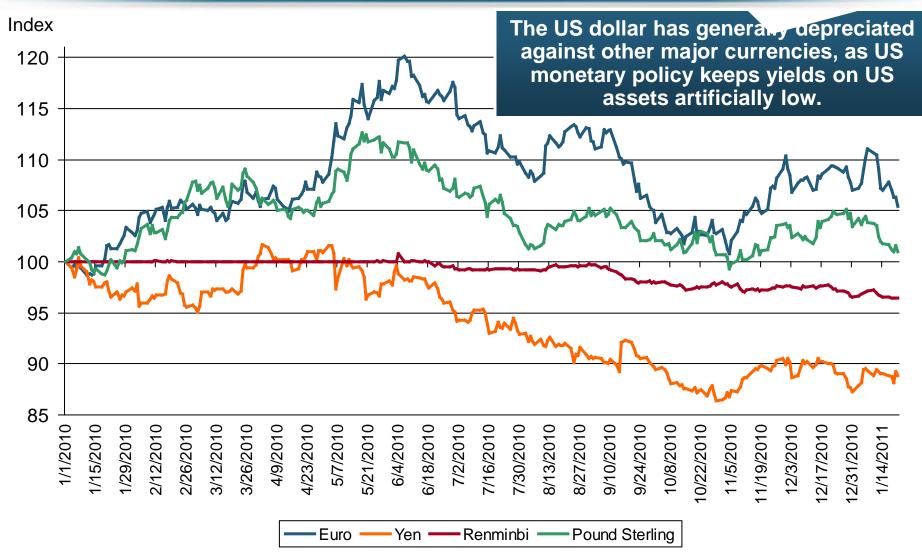
The global financial crisis created significant exchange-rate volatility in 2008-09 and 2010—when the world needed a "safe haven" currency. As global stability returns, the dollar is depreciating again.

*The Major Currency index is a weighted average of the foreign exchange values of the U.S. dollar against a subset of the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares. Sources: US Federal Reserve, Board of Governors; Insurance Information Institute.

Exchange Rate Indices*

Daily (Jan 1, 2010 = 100)

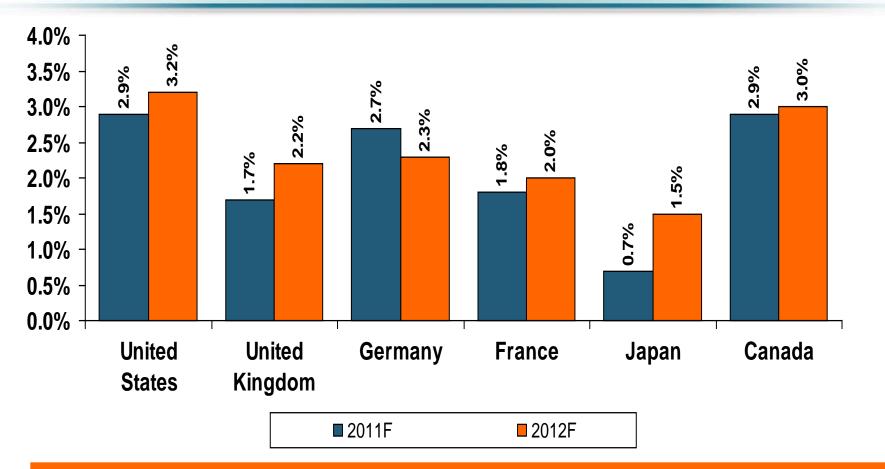
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*data are through Jan. 21, 2011

Source: International Monetary Fund World Economic Outlook January 2011 update at

Real GDP Growth Forecasts for Advanced Economies: 2011 - 2012

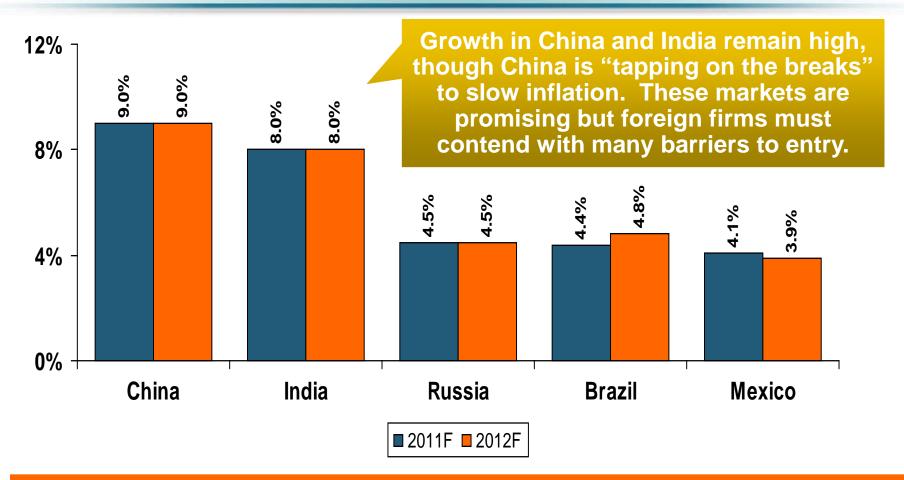


Growth projections could slow for 2011 if supplies of middle-eastern oil (political disruption), developments involving sovereign debt (the PIGS or other countries) or Japanese exports (earthquake/tsunami effects) are worse than expected.

Sources: Blue Chip Economic Indicators (4/2011 issue); Insurance Information Institute.

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

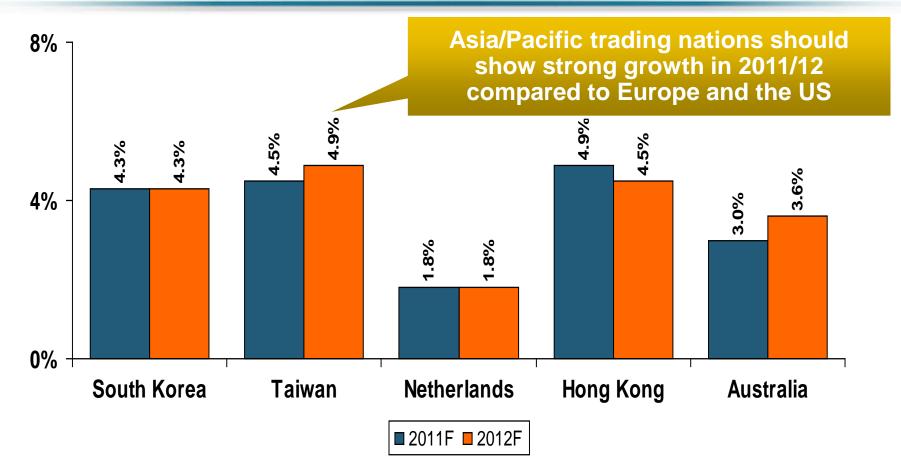




Growth in emerging and developing economies will greatly outpace advanced country growth in 2011/12. This will accelerate the growth of insurance exposures in emerging markets relative to the U.S., W. Europe and Japan.

Sources: Blue Chip Economic Indicators (4/2011 issue); Insurance Information Institute.

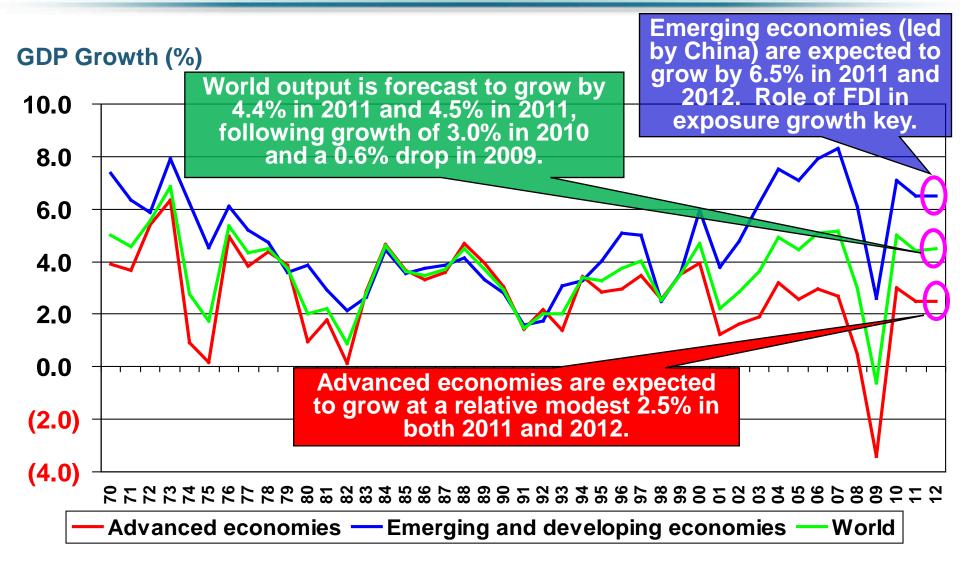
Real GDP Growth Forecasts for Other Key Trading Economies: 2011 - 2012



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

Sources: Blue Chip Economic Indicators (4/2011 issue); Insurance Information Institute.

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



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

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



The gap is closing quickly. China became the world's second largest economy in 2010 and before long the developing world's share of GDP will exceed that of advanced economies.

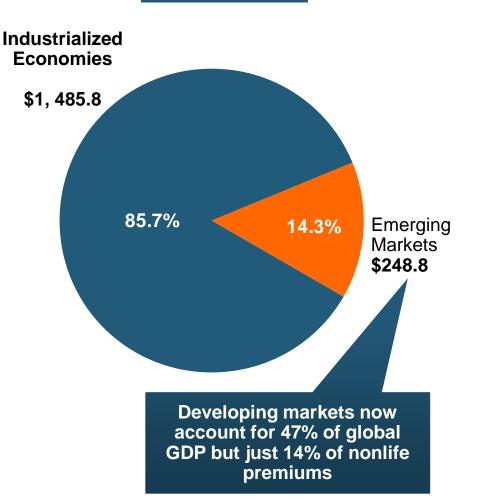
> Developing Economies 47.1%

Advanced Economies 52.9%



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



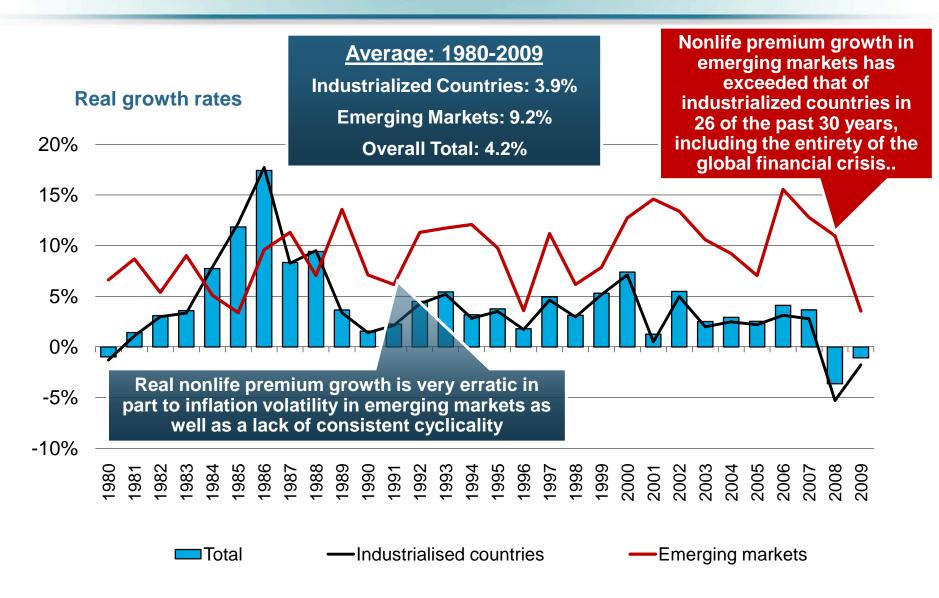
2009, \$Billions



The Unfortunate Nexus: Opportunity, Risk & Instability

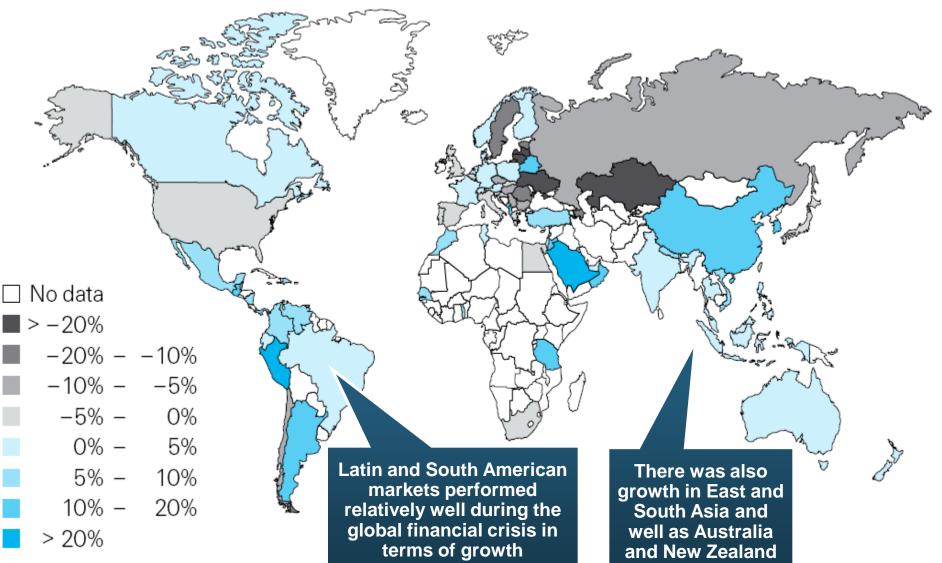
Most of the Global Economy's Future Gains Will be Fraught with Much Greater Risk and Uncertainty than in the Past—Insurance Is There to Help

Global Real (Inflation Adjusted) Nonlife Premium Growth: 1980-2009



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Nonlife Real Premium Growth in 2009

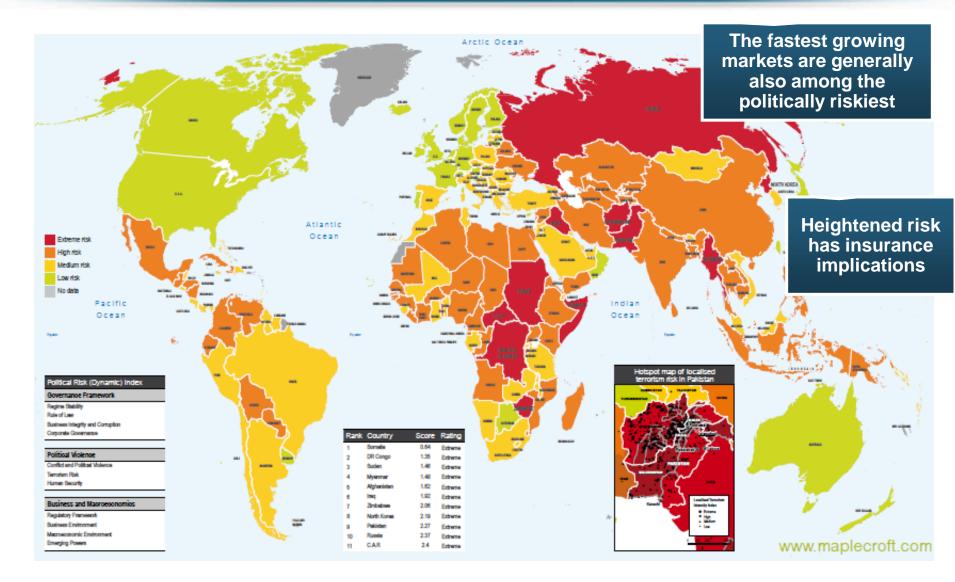


Source: Swiss Re, sigma, No. 2/2010.

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



Source: Maplecroft

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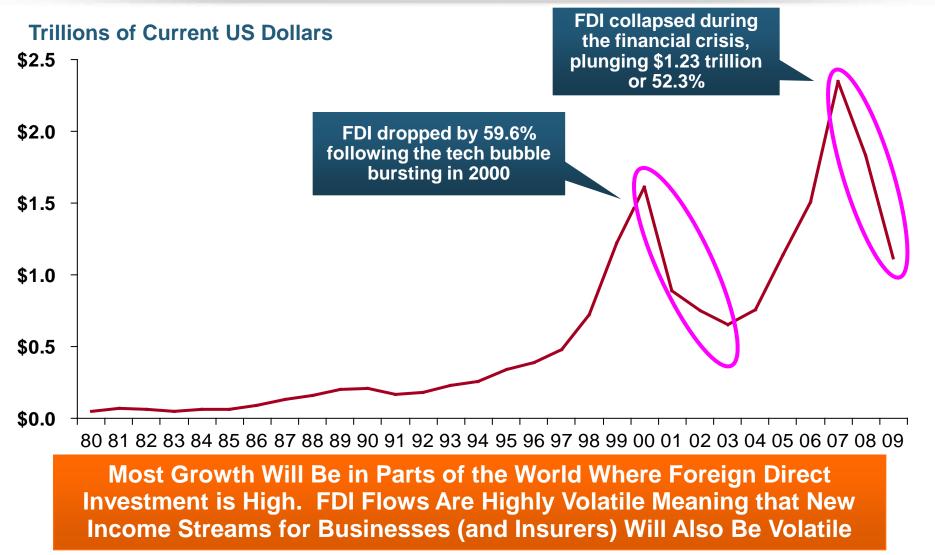


Reshuffling the Global Economic Deck Through Foreign Direct Investment

The Global Financial Crisis Concentrates Growth Opportunities in Risky Places/Industry Groups

Global Foreign Direct Investment, Net Inflows: 1980-2009*

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*Foreign Direct Investments are defined as the net inflows of investment to acquire a lasting management interest (at least 10% of voting stock) in an enterprise operating in an economy other than that of the investor. Source: World Bank; Insurance Information Institute.

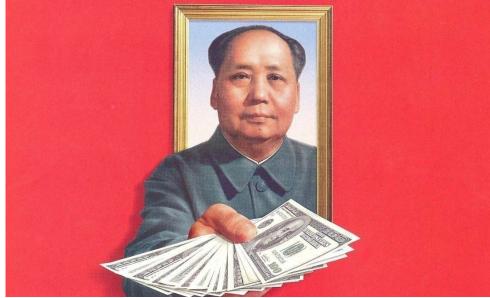
Following the Money Trail: Foreign Direct Investment

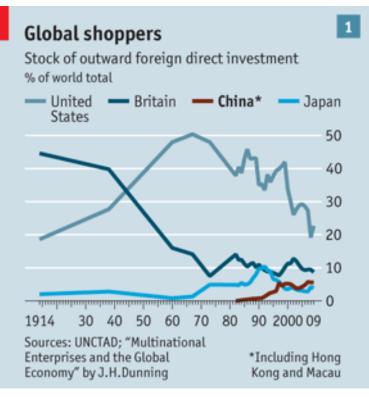


The Economist

Cuban communism: beginning of the end? US employment goes from bad to worse Dr Evil, the commodity speculator Ireland under siege Keith Richards, management guru

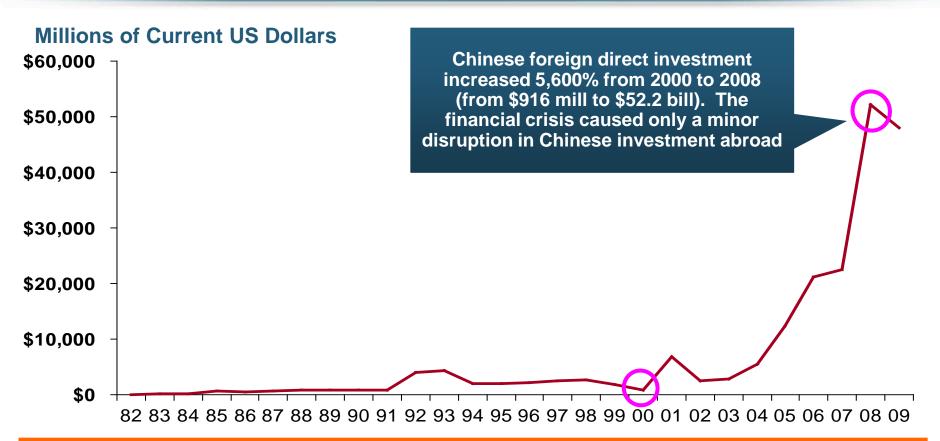
Buying up the world The coming wave of Chinese takeovers





China: *Outward* Foreign Direct Investment: 1982-2009*



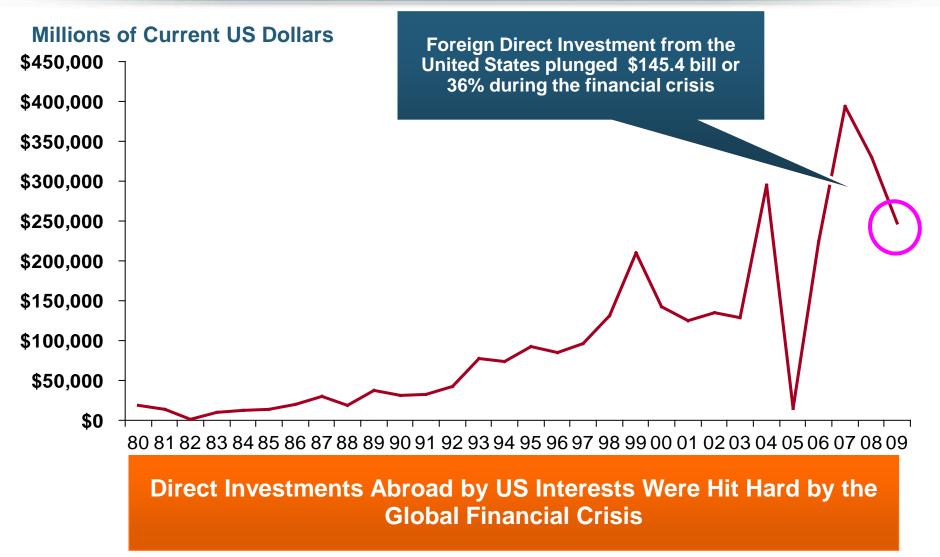


Despite the Crash in Foreign Direct Investment During the Global Financial Crisis, Chinese Investments Abroad Remain Near Record Levels. Implication: Growth Opportunities for Business (and their Insurers) May *Not* Be in China but In Chinese Investment Target Nations/Companies/Industries.

*Foreign Direct Investments are defined as the net inflows of investment to acquire a lasting management interest (at least 10% of voting stock) in an enterprise operating in an economy other than that of the investor. Outward FDI represents flow from investing country to rest of the world. Source: United Nations UNCTADSTAT; Insurance Information Institute.

United States: *Outward* Foreign Direct Investment: 1980-2009*





*Foreign Direct Investments are defined as the net inflows of investment to acquire a lasting management interest (at least 10% of voting stock) in an enterprise operating in an economy other than that of the investor. Outward FDI represents flow from investing country to rest of the world. Source: United Nations UNCTADSTAT; Insurance Information Institute.

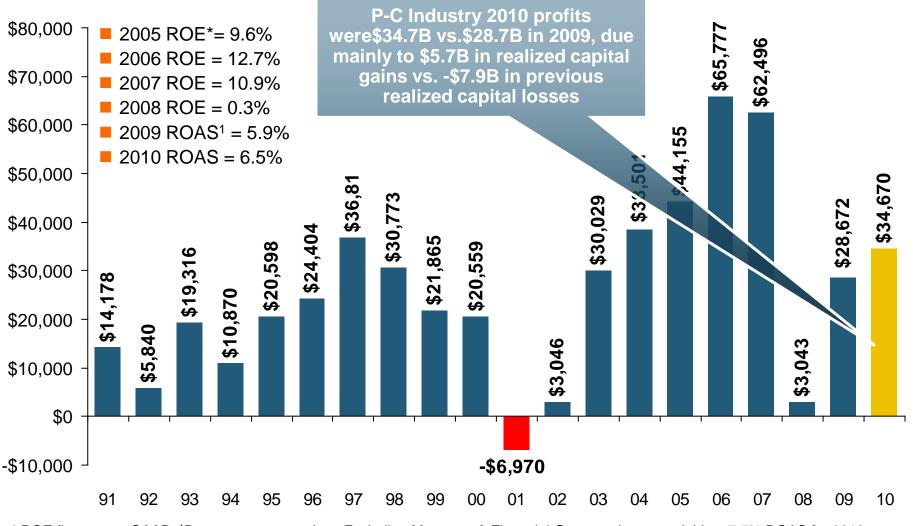


P/C Insurance Industry Financial Overview

Profit Recovery Continues Early Stage Growth Begins

P/C Net Income After Taxes 1991–2010 (\$ Millions)

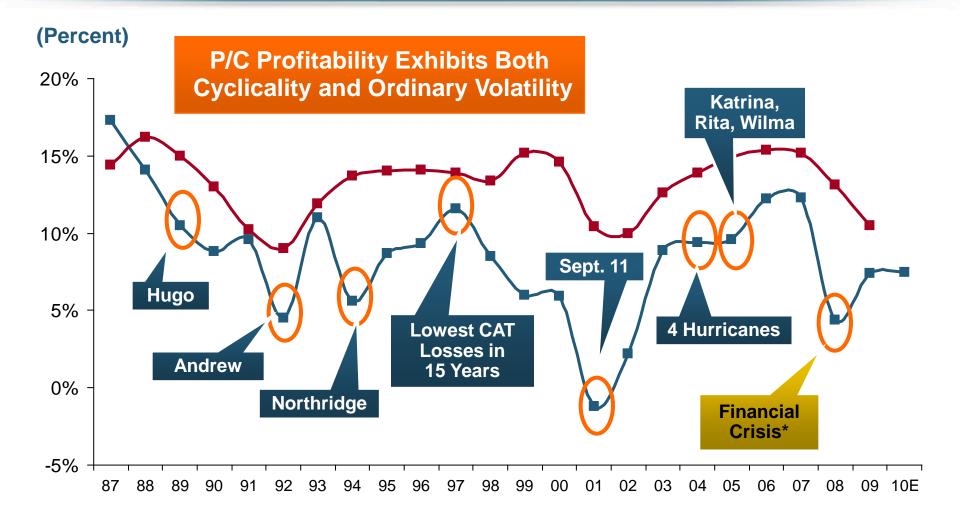




* ROE figures are GAAP; ¹Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 7.5% ROAS for 2010 and 7.4% for 2009.

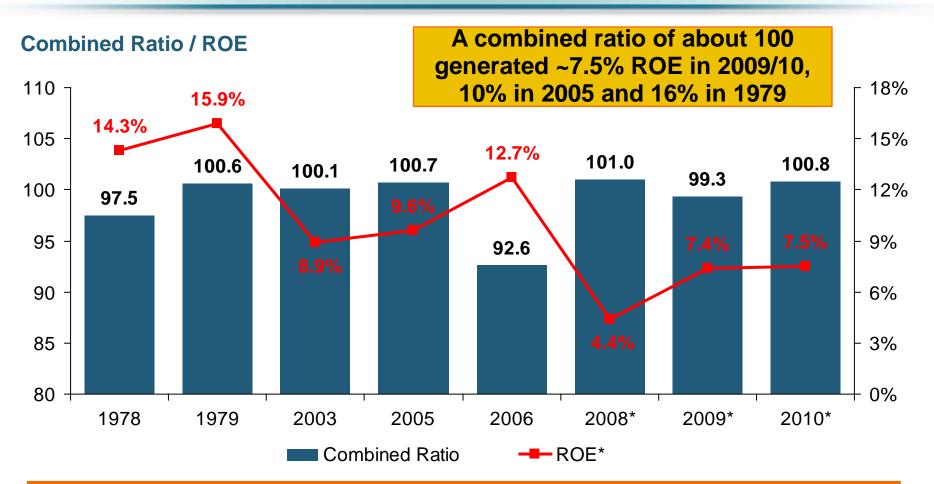
Sources: A.M. Best, ISO, Insurance Information Institute

ROE: Property/Casualty Insurance, 1987–2010*



* Excludes Mortgage & Financial Guaranty in 2008 - 2010. Sources: ISO, *Fortune*; INSURANCE

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



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

* 2009 and 2010 figures are return on average statutory surplus. 2008, 2009 and 2010 figures exclude mortgage and financial guaranty insurers

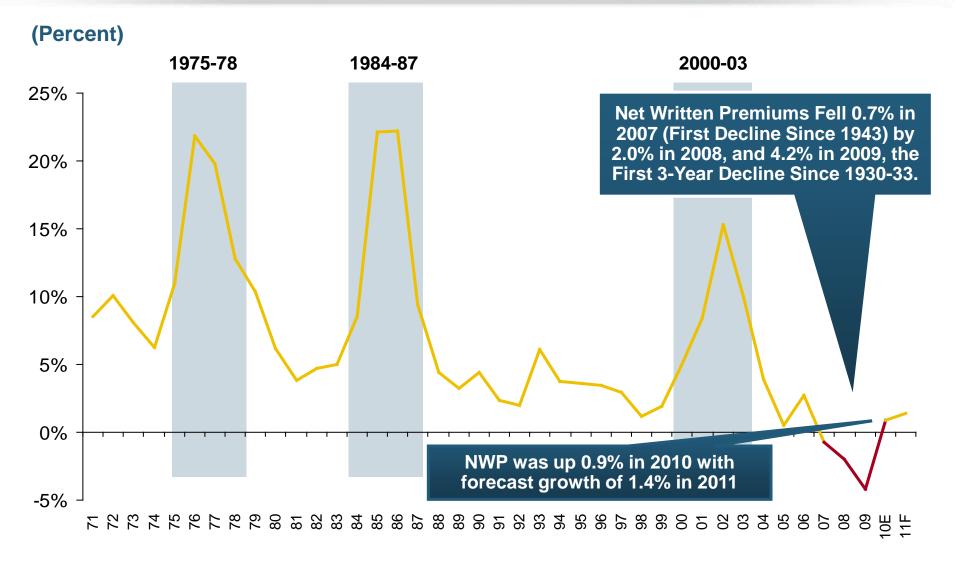
Source: Insurance Information Institute from A.M. Best and ISO data.



PREMIUM GROWTH TRENDS

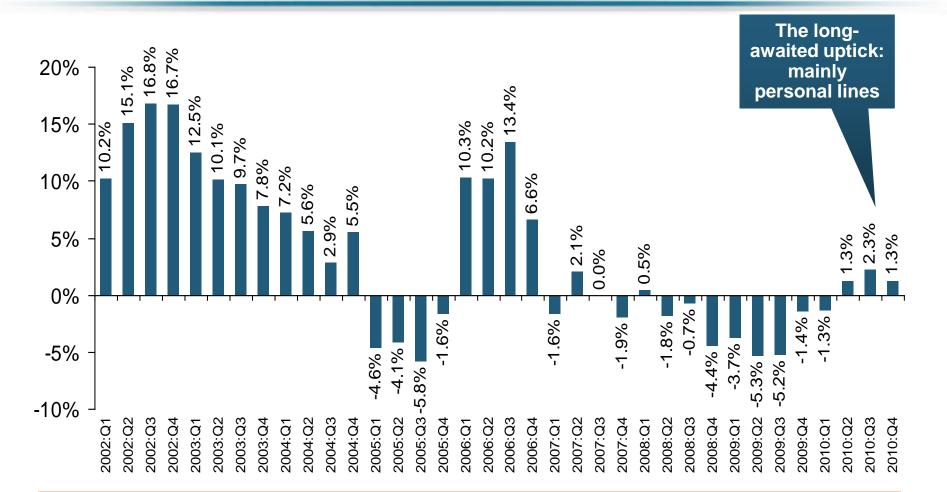
Winds of Change or Moving Sideways?

Soft Market Persisted in 2010 but Growth Returned: More in 2011?



Shaded areas denote "hard market" periods Sources: A.M. Best (historical and forecast), ISO, Insurance Information Institute.

P/C Net Premiums Written: % Change, Quarter vs. Year-Prior Quarter



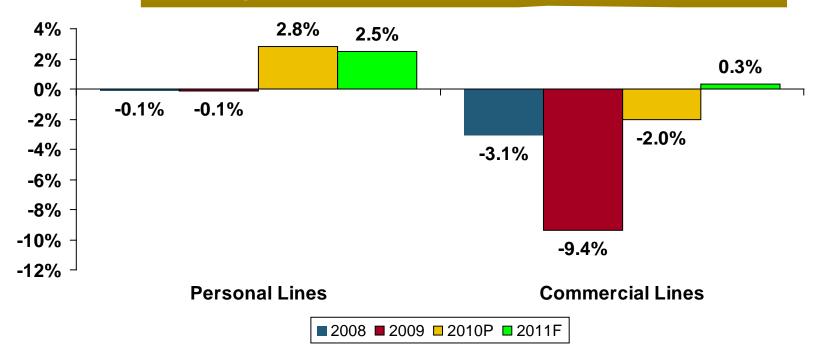
Finally! Back-to-back quarters of net written premium growth (vs. the same quarter, prior year)

Sources: ISO, Insurance Information Institute.

Net Written Premium Growth by Segment: 2008-2011F

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Personal lines growth resumed in 2010 and will continue in 2011, while commercial lines contracted again in 2010 and but will stabilize in 2011



Rate and exposure are more favorable in personal lines, whereas a prolonged soft market and sluggish recovery from the recession weigh on commercial lines.

Sources: A.M. Best; Insurance Information Institute.

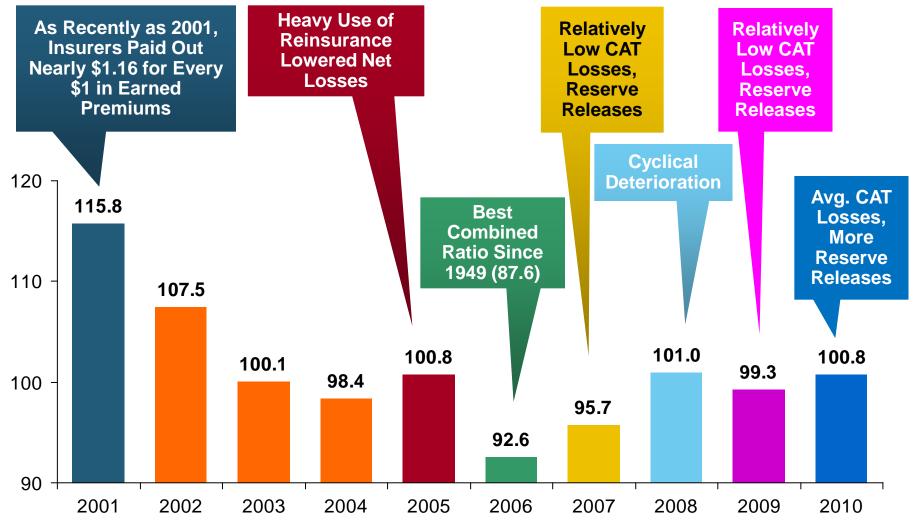


UNDERWRITING

Cyclicality is Driven Primarily by the Industry's Underwriting Cycle, Not the Economy

P/C Insurance Industry Combined Ratio, 2001–2010*



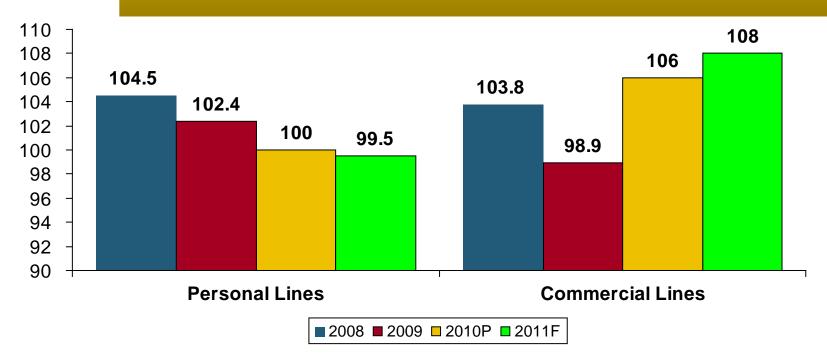


* Excludes Mortgage & Financial Guaranty insurers in 2008, 2009 and 2010. Including M&FG, 2008=105.1, 2009=100.7, 2010=102.4 Sources: A.M. Best, ISO.

Calendar Year Combined Ratios by Segment: 2008-2011F

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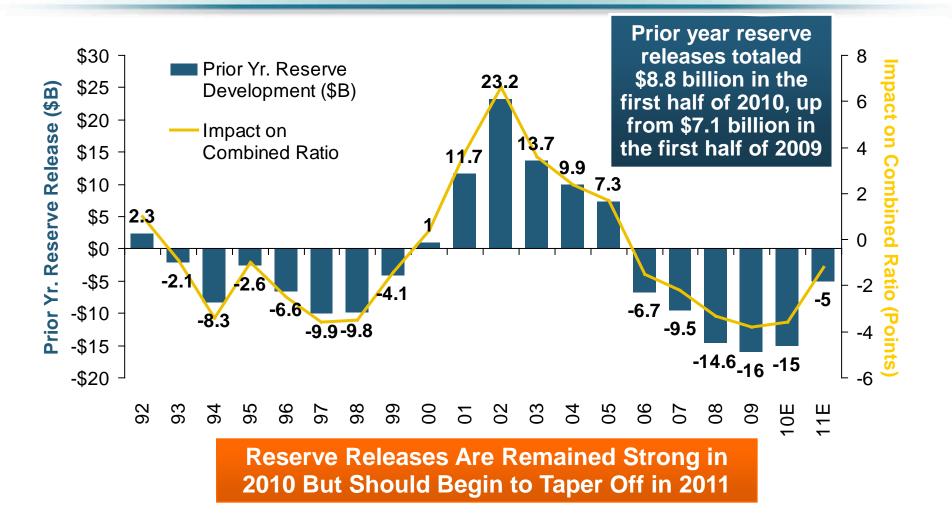
Personal lines combined ratio is expected to remain stable in 2010 while commercial lines and reinsurance deteriorate



Overall deterioration in 2011 underwriting performance is due to expected return to normal catastrophe activity along with deteriorating underwriting performance related to the prolonged commercial soft market

Sources: A.M. Best . Insurance Information Institute.

P/C Reserve Development, 1992–2011E



Note: 2005 reserve development excludes a \$6 billion loss portfolio transfer between American Re and Munich Re. Including this transaction, total prior year adverse development in 2005 was \$7 billion. The data from 2000 and subsequent years excludes development from financial guaranty and mortgage insurance.

Sources: Barclay's Capital; A.M. Best.



INVESTMENTS: THE NEW REALITY

Investment Performance is a Key Driver of Profitability Does It Influence Underwriting or Cyclicality?

Property/Casualty Insurance Industry Investment Gain: 1994–2010¹





NSURANCE

Investment Gains Recovered Significantly in 2010 Due to Realized Investment Gains; The Financial Crisis Caused Investment Gains to Fall by 50% in 2008

¹ Investment gains consist primarily of interest, stock dividends and realized capital gains and losses.

* 2005 figure includes special one-time dividend of \$3.2B.

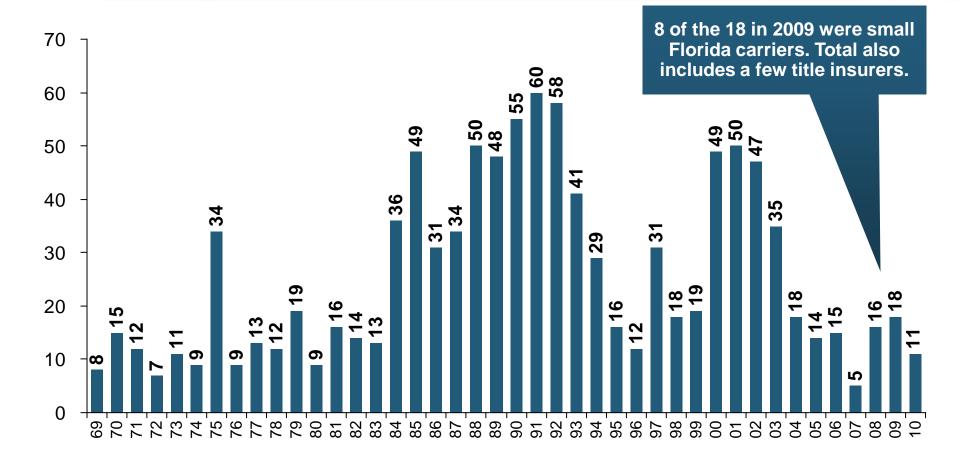
Sources: ISO; Insurance Information Institute.



Financial Strength & Underwriting

Cyclical Pattern is P-C Impairment History is Directly Tied to Underwriting, Reserving & Pricing

P/C Insurer Impairments, 1969–2010



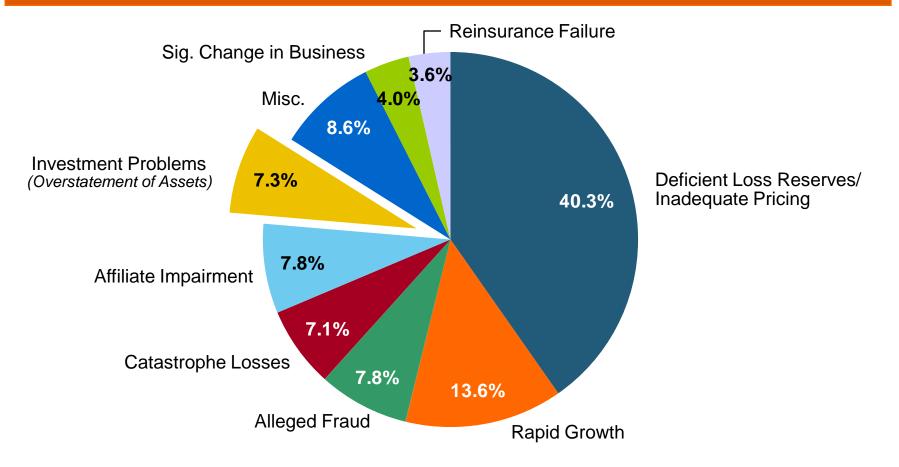
The Number of Impairments Varies Significantly Over the P/C Insurance Cycle, With Peaks Occurring Well into Hard Markets

Source: A.M. Best Special Report "1969-2010 Impairment Review," June 21, 2010; Insurance Information Institute.

Reasons for US P/C Insurer Impairments, 1969–2010



Historically, Deficient Loss Reserves and Inadequate Pricing Are By Far the Leading Cause of P-C Insurer Impairments. Investment and Catastrophe Losses Play a Much Smaller Role



Source: A.M. Best: 1969-2010 Impairment Review, Special Report, April 2011.



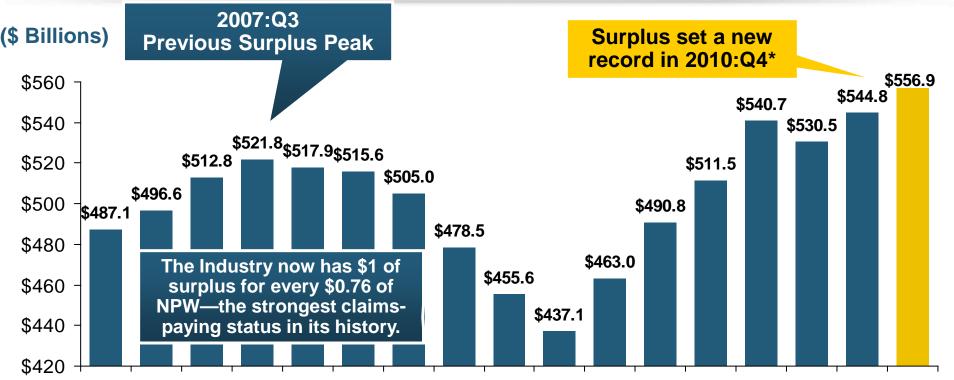
CAPITAL MANAGEMENT & LEVERAGE

Excess Capital is a Major Obstacle to a Market Turn;

Capital Management Decisions Will Impact Market Direction

Policyholder Surplus, 2006:Q4–2010:Q4





06:Q4 07:Q1 07:Q2 07:Q3 07:Q4 08:Q1 08:Q2 08:Q3 08:Q4 09:Q1 09:Q2 09:Q3 09:Q4 10:Q1 10:Q2 10:Q3 10:Q4

*Includes \$22.5B of paid-in capital from a holding company parent for one insurer's investment in a non-insurance business in early 2010.

Sources: ISO, A.M .Best.

Quarterly Surplus Changes Since 2007:Q3 Peak

09:Q1: -\$84.7B (-16.2%)
09:Q2: -\$58.8B (-11.2%)
09:Q3: -\$31.0B (-5.9%)
09:Q4: -\$10.3B (-2.0%)

10:Q1: +\$18.9B (+3.6%) 10:Q2: +\$8.7B (+1.7%) 10:Q3: +\$23.0B (+4.4%) 10:Q4: +\$35.1B (+6.7%)



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