Future Shock:
Challenges and Opportunities for the Global Insurance Industry in a Rapidly Changing World

Connecticut Insurance Market Forecast
Hartford, CT
November 20, 2014

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Robert P. Hartwig, Ph.D., CPCU, President & Economist
Insurance Information Institute ♦ 110 William Street ♦ New York, NY 10038

Tel: 212.346.5520 ♦ Cell: 917.453.1885 ♦ bobh@iii.org ♦ www.iii.org
Presentation Outline

- Insurance: A Global Force
- The Impact of the “Insurance Economy”
  - Dollars and Jobs
- Public Perceptions of the Insurance Industry
- The Importance of Insurance:
  - P/C
  - Life
  - Health
- The Insurance Equation: Challenge = Opportunity
  - Old & New: Challenges and Insurance Solutions
- An Industry Built of Strength & Experience
- Q&A
INSURANCE: We Are a Global Force

Becoming More Global Is the Destiny of the Insurance Industry
Distribution of Global Insurance Premiums, 2013 ($ Trillions)

Total Premium Volume = $4.641 Trillion*

Life, $2.61, 56.2%
Non-Life, $2.03, 43.8%

Life insurance accounted for 56.2% of global premium volume in 2013 vs. 43.8% for Non-Life

Source: Swiss Re, sigma, No. 3/2014; Insurance Information Institute.
Emerging market’s share of nonlife premiums increased to 19.5% in 2013, up from 17.3% in 2012 and 14.3% in 2009. The share of premiums written in the $2 trillion global nonlife market remains much larger (80.5%) but continues to shrink.

The financial crisis and sluggish recovery in the major insurance markets will accelerate the expansion of the emerging market sector.
<table>
<thead>
<tr>
<th>Country</th>
<th>Global Premium (Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>$1,259.3</td>
</tr>
<tr>
<td>Japan</td>
<td>$531.5</td>
</tr>
<tr>
<td>UK</td>
<td>$329.6</td>
</tr>
<tr>
<td>China</td>
<td>$278.0</td>
</tr>
<tr>
<td>France</td>
<td>$254.8</td>
</tr>
<tr>
<td>Germany</td>
<td>$247.2</td>
</tr>
<tr>
<td>Italy</td>
<td>$168.6</td>
</tr>
<tr>
<td>S. Korea</td>
<td>$145.4</td>
</tr>
<tr>
<td>Canada</td>
<td>$125.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>$101.1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>$90.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>$88.9</td>
</tr>
<tr>
<td>Australia</td>
<td>$78.3</td>
</tr>
<tr>
<td>Spain</td>
<td>$72.5</td>
</tr>
<tr>
<td>India</td>
<td>$65.6</td>
</tr>
</tbody>
</table>

Global premium volume in 2013 = $4.641 Trillion

Countries in all parts of the world except Africa are now represented among the world's largest insurance markets.

Real growth in non-life insurance premiums was faster in China and most of SE Asia than the US.

<table>
<thead>
<tr>
<th>Market</th>
<th>Life</th>
<th>Non-Life</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>-0.2</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Emerging</strong></td>
<td><strong>6.4</strong></td>
<td><strong>8.3</strong></td>
<td><strong>7.4</strong></td>
</tr>
<tr>
<td>World</td>
<td>0.7</td>
<td>2.3</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Global Real (Inflation Adjusted) Premium Growth: 1980-2013

Premium growth is very erratic in part to inflation volatility in emerging markets as well as a lack of consistent cyclicality.

Emerging market growth has exceeded that of industrialized countries in 30 of the past 34 years, including the entirety of the global financial crisis and subsequent recovery.

Source: Swiss Re, sigma, No. 3/2014.
Emerging economy growth rates are expected to ease to 4.4% in 2014 and 5.0% in 2015. The world economy shrank by 0.6% in 2009 amid the global financial crisis.

Advanced economies are expected to grow at a modest pace of 1.8% in 2014 and to 2.3% in 2015.

Real GDP Growth Forecasts: Major Economies: 2011 – 2015F

US growth should accelerate in 2015

Growth in China has slowed but outpaces the US and Europe

The Eurozone remains weak

Political turmoil in Latin America is hurting growth

Growth Prospects Vary Widely by Region but the Outlook for 2015 Has Dimmed Except in the US and UK

Sources: Blue Chip Economic Indicators (10/2014 issue); IMF (10/2014); Insurance Information Institute.
Real GDP Growth Forecasts: Selected Economies: 2011 – 2015F

Strong economies in smaller industrialized nations will bolster demand for products, services, international trade and insure.

Growth in Russia is being hit hard by sanctions.

Growth Is Expected Accelerate Modestly in Most of the World in 2014 and 2015

Sources: Blue Chip Economic Indicators (10/2014 issue); IMF (10/2104); Insurance Information Institute.
The gap between economic and insured losses is growing—suggesting both a problem and an opportunity.

Sources: Guy Carpenter, Swiss Re; Insurance Information Institute.
Globalization: The Global Economy Creates Opportunities & Risks

Globalization Is a Double Edged Sword—Creating Opportunity and Wealth But Potentially Creating and Amplifying Risk

Greater Reward ➔ Greater Risk
5 Major Categories for External Global Risks, Uncertainties and Fears: Insurance Solutions

1. Economic Risks
2. Geopolitical Risks
3. Environmental Risks
4. Technological Risks
5. Societal Risks

While risks can be broadly categorized, none are mutually exclusive.

Source: Adapted from World Economic Forum, *Global Risks 2014*; Insurance Information Institute.
Multitude of Exogenous Factors Influence Insurer Growth, Performance & Cyclicality

- Economic Issues in US, Europe
- Weakness in China/Emerging Economies
- Political Upheaval in the Ukraine, Middle East
  - Syria, Iraq, Thailand, Argentina, Venezuela
  - → Trade sanctions (e.g., Iran, Russia)
- Political Gridlock in the US, Europe, Japan
- Fiscal/Monetary Imbalances/Low Interest Rates
- Unemployment
- Resurgent Terrorism Risk: ISIS & Other Groups
- Cyber Attacks (theft, espionage, terrorism)
- Ebola Crisis
- Sabre Rattling (e.g., US-China, Russia-Ukraine)
- Separatist Fever (UK/Scotland, Spain)
- Severe Natural Disaster Losses
- Climate Change/Sea Level Rise
- Environmental Degradation
- (Over)Regulation: Systemic Risk?

Are “Black Swans” everywhere or does it just seem that way?
The Economics of Connecticut’s Insurance Industry

Insurance Remains Key to Connecticut’s Economy
Recessions and investment reverses (in 2001 and 2008) cut into the contribution of the Insurance Industry to U.S. GDP. In times of healthier economic growth, the industry contributes between 2.5% and 2.75% of U.S. GDP.

Insurance and Related Activities in CT as a Percent of CT GDP, 1997-2012

Insurance activity accounts for 7% - 8% of Connecticut’s economy, three times that of the US overall.

Recessions and investment reverses (in 2001 and 2008) cut into the contribution of the Insurance Industry to CT GDP. In times of healthier economic growth, the industry contributes between 7% and 9% (and sometimes more) of Connecticut’s state GDP.

Insurance and Related Activities as a Percent of GDP, US vs. CT, 1997-2012

Insurance activity in CT is three times that of the US overall.

Recessions and investment reverses (in 2001 and 2008) cut into the contribution of the Insurance Industry to GDP. In times of healthier economic growth, the industry contributes between 7% and 9% (and sometimes more) of Connecticut’s state GDP.

A Big, Important Industry With Many Employment Crosscurrents
Insurance Industry Employment* 2000-2014F

Annual Average, in Thousands

Insurance industry employment added nearly 185,000 jobs from 2000 to 2008, an increase 8.3%

Insurance industry employment fell by 2.9% during Great Recession

Insurance industry employment is recovering and will likely reach a new record level of employment in early 2015

*Includes direct writers, claims adjusters, third-party administrators of insurance funds and other service personnel such as advisory and insurance ratemaking services.

# Overview of Insurance Sector Employment Changes*

*Data are through September 2014 and are preliminary (i.e., subject to later revision); seasonally adjusted.*

<table>
<thead>
<tr>
<th>Insurance Subsector</th>
<th>August 2014 Employment</th>
<th>September 2014 Employment</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CARRIERS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-C Direct</td>
<td>534,300</td>
<td>535,000</td>
<td>+700</td>
</tr>
<tr>
<td>Life Direct</td>
<td>341,900</td>
<td>343,500</td>
<td>+1,600</td>
</tr>
<tr>
<td>Health/Medical Direct</td>
<td>496,200</td>
<td>498,300</td>
<td>+2,100</td>
</tr>
<tr>
<td>Title &amp; Other Direct</td>
<td>73,500</td>
<td>73,100</td>
<td>-400</td>
</tr>
<tr>
<td>Reinsurers</td>
<td>27,400</td>
<td>27,400</td>
<td>0</td>
</tr>
<tr>
<td><strong>OTHERS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agents/Brokers</td>
<td>689,800</td>
<td>692,000</td>
<td>+2,200</td>
</tr>
<tr>
<td>3rd-Party Administration</td>
<td>164,500</td>
<td>166,500</td>
<td>+2,000</td>
</tr>
<tr>
<td>Claims Adjusters</td>
<td>50,600</td>
<td>50,000</td>
<td>-600</td>
</tr>
</tbody>
</table>
Over the Past 25 Years, Each Industry Segment Has Had Different Employment Experiences
The BLS occasionally reclassifies employment within industries. When this happens, the change is spread evenly over a 12-month period (in this case March 2010-March 2011).
Every 4-5 years BLS reconciles its data with census data; sometimes this reclassifies employment within industries. This drop, spread over March 2004-March 2005, moved some people to the Health/Medical Expense sector.

Life employment is basically flat

U.S. Employment in the Direct Life Insurance Industry: 1990–2014*

*As of September 2014; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.

Employment in the Health-Medical insurance segment is seeing strong growth, as it has for most of the past 25 years.

*As of September 2014; not seasonally adjusted; Does not including agents & brokers.
Note: Recessions indicated by gray shaded columns.
After a multi-decade decline, Reinsurance employment has shown some recent growth.

*As of September 2014; not seasonally adjusted; Does not including agents & brokers.

Note: Recessions indicated by gray shaded columns.


Agency/Brokerage employment is recovering despite consolidation

*As of September 2014; not seasonally adjusted. Includes all types of insurance.
Note: Recessions indicated by gray shaded columns.
U.S. Employment in Insurance Claims Adjusting: 1990–2014*

- Claims adjusting is a profession in transition

*As of September 2014; not seasonally adjusted.
Note: Recessions indicated by gray shaded columns.
U.S. Employment in Third-Party Administration of Insurance Funds: 1990–2014*

*As of September 2014; not seasonally adjusted. Includes all types of insurance.

Note: Recessions indicated by gray shaded columns.


More work is being done by TPAs
How Does the Public (and Prospective Employees) View the Industry?

I.I.I. Poll: Favorability

Percent of Public Rating Industry as Very or Mostly Favorable, 2013-2014

Auto/Home Insurers Ranked Highest of Industries Surveyed.

Source: Insurance Information Institute Annual *Pulse* Survey.
I.I.I. Poll: Favorability

Percent of Public Rating Industry as Very or Mostly Favorable, 2014

Auto/Home Favorability outranks other key industries

Source: Insurance Information Institute Annual Pulse Survey.
I.I.I. Poll: Favorability

Percent of Public Rating Industry as Very or Mostly Favorable, 1968-2014

Auto/Home Favorability Has Outranked Banking Four Years in a Row.

Auto/Home Insurers Continue to Rank Higher Than Banking, Mutual Funds.

Source: Insurance Information Institute Annual *Pulse* Survey.
Insurance Market Overview: A Segmented Industry

Property/Casualty
Life/Annuity
Health
Property/Casualty Insurance Industry Trends

Rich History, Poised to Manage the Risks and Seize the Opportunities of the Future
Adjusted for inflation, it took 36 years for the industry to pay its first $1 trillion in claims in the years since 1925. Today, the industry pays $1 trillion in claims every 2 to 3 years after adjusting for inflation.

Sources: Insurance Information Institute research and calculations from A.M. Best data.

- 2005 ROE* = 9.6%
- 2006 ROE = 12.7%
- 2007 ROE = 10.9%
- 2008 ROE = 0.1%
- 2009 ROE = 5.0%
- 2010 ROE = 6.6%
- 2011 ROAS1 = 3.5%
- 2012 ROAS1 = 5.9%
- 2013 ROAS1 = 10.3%
- 2014 ROAS1 = 7.8%

*ROE figures are GAAP; 1Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 7.7% ROAS through 2014:Q2, 9.8% ROAS in 2013, 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009.
Sources: A.M. Best, ISO; Insurance Information Institute
Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 – 2014:H1*

*Profitability = P/C insurer ROEs. 2011-14 figures are estimates based on ROAS data. Note: Data for 2008-2014 exclude mortgage and financial guaranty insurers.

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

- **1950-70**: ROEs were lower in this period. Low interest rates, low inflation, “Bureau” rate regulation all played a role.

- **1970-90**: Peak ROEs were much higher in this period while troughs were comparable. High interest rates, rapid inflation, economic volatility all played roles.

- **1990-2010s**: Déjà vu. Excluding mega-CATs, this period is very similar to the 1950-1970 period.

*Profitability = P/C insurer ROEs. 2011-14 figures are estimates based on ROAS data. Note: Data for 2008-2014 exclude mortgage and financial guaranty insurers. 2014 figure is through Q2. Source: Insurance Information Institute; NAIC, ISO, A.M. Best.*

(Percents)

P/C Profitability Is Both by Cyclicality and Ordinary Volatility

Katrina, Rita, Wilma

Low CATs

Sept. 11

4 Hurricanes

Financial Crisis*

Record Tornado Losses

Lowest CAT Losses in 15 Years

Hugo

Andrew

Northridge

-5%
0%
5%
10%
15%
20%

87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14*

Sources: ISO, Fortune; Insurance Information Institute.
Policyholder Surplus, 2006:Q4–2014:H1

$487.1
$496.6
$512.8
$521.8
$478.5
$455.6
$437.1
$463.0
$490.8
$511.5
$540.7
$530.5
$544.8
$559.2
$559.1
$538.6
$550.3
$567.8
$583.5
$586.9
$607.7
$614.0
$624.4
$653.3
$671.6
$570.7
$566.5
$505.0
$515.6
$517.9

2007:Q3 Pre-Crisis Peak

Drop due to near-record 2011 CAT losses

Surplus as of 6/30/14 stood at a record high $671.6B

The industry now has $1 of surplus for every $0.73 of NPW, close to the strongest claims-paying status in its history.

2010:Q1 data includes $22.5B of paid-in capital from a holding company parent for one insurer's investment in a non-insurance business.

Sources: ISO, A.M. Best.

The P/C insurance industry entered 2014 in very strong financial condition.
US Policyholder Surplus: 1975–2014*

Surplus as of 3/30/14 was a record $671.6, up 2.8% from $653.3 of 12/31/13, and up 53.6% ($234.5B) from the crisis trough of $437.1B at 3/31/09.

"Surplus" is a measure of underwriting capacity. It is analogous to "Owners Equity" or "Net Worth" in non-insurance organizations.

The Premium-to-Surplus Ratio Stood at $0.73:$1 as of 6/30/14, a Near Record Low (at Least in Recent History)

* As of 6/30/14.
Shaded areas denote “hard market” periods
Sources: A.M. Best (historical and forecast), ISO, Insurance Information Institute.
Direct Premiums Written: Total P/C Percent Change by State, 2007-2013

Top 25 States

North Dakota was the country’s growth leader over the past 6 years with premiums written expanding by 74.6%
Direct Premiums Written: Total P/C
Percent Change by State, 2007-2013

Bottom 25 States

Growth was negative in 7 states and DC between 2007 and 2013

Sources: SNL Financial LC.; Insurance Information Institute.
Life Insurance Trends

Critical Sector, Key Products
What Don’t Millennials Understand?
The amount of death benefits life insurers paid grew by 53.6% in the 8 years since 2005 (averaging 5.5% growth per year).

Sources: NAIC, via SNL Financial; Insurance Information Institute.
The amount of term life insurance (measured by death benefit amounts) issued yearly has slipped since 2008, from $1.35 billion to $1.05 billion, while the amount of permanent life insurance grew slightly.

Sources: NAIC, via SNL Financial; Insurance Information Institute.
The spike is mainly in Group Annuity premiums; it represents “de-risking” by a few giant DB plans.

*Not seasonally adjusted. Group premiums = group life, group annuities, and group a&h

Annuities have been the main premium source for decades. Variable annuity premiums generally rise and fall with the stock market.

Source: NAIC, via SNL Financial; I.I.I.
Amount of Individual Life Insurance (Death Benefits) & Number of Policies Issued, 2005-2013

The Great Recession cut sharply into the number of policies and the amount of life insurance bought in subsequent years.

Sources: NAIC, via SNL Financial; Insurance Information Institute.
The Life/Annuity industry has produced steady (if unspectacular) profits, except for years in which the industry’s investment results produced significant realized capital losses.

Sources: NAIC, via SNL Financial; Insurance Information Institute.
Healthcare Cost Trends

Healthcare Cost Will Move Up for the Indefinite Future

*Health Insurers Will Grow and Adapt*
From 1965 through 2013, US health care expenditures had increased by 69 fold. Population growth over the same period increased by a factor of just 1.6. By 2022, health spending will have increased 119 fold.

Health care expenditures as a share of GDP rose from 5.8% in 1965 to 18.0% in 2013 and are expected to reach 19.9% of GDP by 2022.

Since 2009, health expenditures as a % of GDP have flattened out at about 18%--the question is why and will it last?

Medical Cost Inflation vs. Overall CPI, 1995 – 2014*

Though moderating, medical inflation will continue to exceed inflation in the overall economy.

Average Annual Growth Average
1995 – 2013
Healthcare: 3.8%
Total Nonfarm: 2.4%

*July 2014 compared to July 2013.
Rate of Health Care Expenditure Increase Compared to Population, CPI and GDP

Accelerating business investment will be a potent driver of commercial property and liability insurance exposures and should drive employment and WC payroll exposures as well (with a lag).

Source: Insurance Information Institute research.
Reshaping the Insurance Industry: 
Consolidation Trends

Merger & Acquisition Activity: 
Will Slow Growth, Rising Capacity in Some Segments Lead to Consolidation?
M&A activity recovered to pre-crisis levels but deal values dropped sharply in 2013

(1) Includes transactions where a U.S. company was the acquirer and/or the target.

Source: Conning proprietary database.
M&A activity in the P/C sector remains below pre-crisis levels.

(1) Includes transactions where a U.S. company was the acquirer and/or the target.

Source: Conning proprietary database.
Life/Annuity sector M&A activity is highly volatile

(1) Includes transactions where a U.S. company was the acquirer and/or the target.

Source: Conning proprietary database.
Agent/Broker M&A Deals, 2000-2014:6M

Agent/Broker activity is running at a record pace in 2014 with 314 deals announced through June 30.

Agent/Broker Consolidators by Type, 2011 – 2014:6M

Private Equity and Privately Owned agencies/brokers accounted for 68% of the 1,042 transactions from 2011 through mid-2014.

Private Equity, 376, 36%
Privately Owned, 332, 32%
Bank, 97, 9%
Public Broker, 184, 18%
Other, 53, 5%

Insurance Equation
Challenge = Opportunity

We Solve Problems: Old and New
Insurance in the Age of Mega-Disasters

Insurers and Reinsurers Worldwide Have Risen to the Challenge and Are Prepared for Increasing Variability and Volatility in the Climate

($ Billions, $ 2013)

The majority of the costliest disasters events have occurred over the past decade.

2013/14 Were Welcome Respites from 2011/12, among the Costliest Years for Insured Disaster Losses in US History. Longer-term Trend is for more—not fewer—Costly Events

Note: 2001 figure includes $20.3B for 9/11 losses reported through 12/31/01 ($25.9B 2011 dollars). Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = $12.2B ($15.6B in 2011 dollars.)

Sources: Property Claims Service/ISO; Insurance Information Institute.
**Inflation Adjusted U.S. Catastrophe Losses by Cause of Loss, 1994–2013**

1. Catastrophes are defined as events causing direct insured losses to property of $25 million or more in 2013 dollars.
2. Excludes snow.
3. Does not include NFIP flood losses
4. 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.

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**Insured cat losses from 1993-2012 totaled $386.7B, an average of $19.3B per year or $1.6B per month**

- **Hurricanes & Tropical Storms, $159.1**
- **Winds losses are by far cause the most catastrophe losses, even if hurricanes/TS are excluded.**

**Tornado share of CAT losses is rising**

- **Events Involving Tornadoes (2), $139.3**
- **Wind/Hail/Flood (3), $14.6**
- **Geological Events, $18.4**
- **Terrorism, $24.8**
- **Winter Storms, $24.7**
- **Fires (4), $5.5**
- **Other (5), $0.2**
Top 16 Most Costly Disasters in U.S. History

(Insured Losses, 2013 Dollars, $ Billions)

Superstorm Sandy in 2012 was the last mega-CAT to hit the US

12 of the 16 Most Expensive Events in US History Have Occurred Over the Past Decade

Includes Tuscaloosa, AL, tornado

Includes Joplin, MO, tornado

Sources: PCS; Insurance Information Institute inflation adjustments to 2013 dollars using the CPI.
Natural Disasters in the United States, 1980 – 2013

Number of Events (Annual Totals 1980 – 2013)

There were 128 natural disaster events in 2013

Source: MR NatCatSERVICE
Losses Due to Natural Disasters in the US, 1980–2013

(2013 Dollars, $ Billions)  (Overall and Insured Losses)

Indicates a great deal of losses are uninsured (~40%-50% in the US) = Growth Opportunity

2013 CAT Losses
Overall : $21.8B
Insured: $12.8B

Source: MR NatCatSERVICE
Total Value of Insured Coastal Exposure in 2012

(2012, $ Billions)

New York: $2,923.1
Florida: $2,862.3
Texas: $1,175.3
Massachusetts: $849.6
New Jersey: $713.9
Connecticut: $567.8
Louisiana: $293.5
S. Carolina: $239.3
Virginia: $182.3
Maine: $164.6
North Carolina: $163.5
Alabama: $118.2
Georgia: $106.7
Delaware: $81.9
New Hampshire: $64.0
Mississippi: $60.6
Rhode Island: $58.3
Maryland: $17.3

In 2012, New York Ranked as the #1 Most Exposed State to Hurricane Loss, Overtaking Florida with $2.862 Trillion. Texas is very exposed too, and ranked #3 with $1.175 Trillion in insured coastal exposure.

The Insured Value of All Coastal Property Was $10.6 Trillion in 2012, Up 20% from $8.9 Trillion in 2007 and Up 48% from $7.2 Trillion in 2004.

Source: AIR Worldwide
I.I.I. Poll: Homes Near Hazards

Q. If you were to purchase a home today, which of the following summarizes your views on that home’s risk of damage from natural disasters . . . and your decision to purchase that home?

More Than Half of the Public Would Be Significantly Influenced by Risk of Damage from Natural Disasters. Close to a Third Do Not Regard Such a Risk To Be a Major Consideration.

Source: Insurance Information Institute Annual Pulse Survey.
Top 16 Most Costly World Insurance Losses, 1970-2014*

(Included Losses, 2013 Dollars, $ Billions)

5 of the top 14 most expensive catastrophes in world history have occurred within the most recent 4 years (2010-2014)

Hurricane Sandy became the 6th costliest event in global insurance history

*Figures do not include federally insured flood losses.
Sources: Munich Re; Swiss Re; Insurance Information Institute research.
Selection of significant Natural catastrophes

- **Geophysical events** (earthquake, tsunami, volcanic activity)
- **Meteorological events** (storm)
- **Hydrological events** (flood, mass movement)
- **Climatological events** (extreme temperature, drought, wildfire)
- **Extraterrestrial events** (Meteorite impact)

Natural Disasters Worldwide, 1980 – 2013 (Number of Events)

There were 880 natural disaster events globally in 2013 compared to 905 in 2012.

Source: MR NatCatSERVICE
Losses Due to Natural Disasters Worldwide, 1980–2013 (Overall & Insured Losses)

(Overall and Insured Losses)

(2013 Dollars, $ Billions)

10-Yr. Avg. Losses
Overall: $184B
Insured: $56B

2013 Losses
Overall: $125B
Insured: $34B

There is a clear upward trend in both insured and overall losses over the past 30+ years.

Source: MR NatCatSERVICE
The “Underinsurance” Gap

Why is So Much Loss Uninsured and How to Close the Gap
Even as Insurance Coverage Expands, the Insured Share of Losses Is Falling

Total Global vs. Insured Losses as % GDP (1974 – 2013)

- Total and insured losses as a share of global GDP have both increased over the past 40 years, but insured losses as a share of total losses has shrunk.

Natural Catastrophe Protection Gap (1974 – 2013)

- Many emerging market nations have very large insurance gaps. In the US, the gap is about 50%.

Source: Swiss Re Economic Research & Consulting; Geneva Association; Insurance Information Institute.
Western/Northern Europe, the US and Advanced Asia are relatively well insured, but many “Advanced” economies are not, especially Southern Europe.

Spending on insurance fell 1% to $3,621 per capita in 2013. Penetration decreased too. Nonlife penetration is down from its from a high of 5.7% of GDP in 2000 to 4.7% in 2013.

Density = Premiums per capita
Penetration = Premiums as % of GDP
Insurance Density and Penetration in Emerging Markets, 2013

<table>
<thead>
<tr>
<th>Country</th>
<th>Density (Premiums per Capita)</th>
<th>Penetration (Premiums as % of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>1,000</td>
<td>3%</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,500</td>
<td>4%</td>
</tr>
<tr>
<td>Chile</td>
<td>2,000</td>
<td>5%</td>
</tr>
<tr>
<td>Colombia</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>Egypt</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td>Greece</td>
<td>1,500</td>
<td>3%</td>
</tr>
<tr>
<td>Hungary</td>
<td>2,000</td>
<td>4%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>Israel</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1,500</td>
<td>3%</td>
</tr>
<tr>
<td>Mexico</td>
<td>2,000</td>
<td>4%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td>Poland</td>
<td>1,500</td>
<td>3%</td>
</tr>
<tr>
<td>Russia</td>
<td>2,000</td>
<td>4%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>South Africa</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td>Spain</td>
<td>1,500</td>
<td>3%</td>
</tr>
<tr>
<td>Sweden</td>
<td>2,000</td>
<td>4%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>Turkey</td>
<td>1,000</td>
<td>2%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>1,500</td>
<td>3%</td>
</tr>
</tbody>
</table>

Although emerging markets posted growth of 7.4% in 2013 (Life: +6.4%; Nonlife: +8.3%), most emerging economies are poorly insured, representing growth opportunities for the insurance industry.

Spending on insurance in emerging markets increased to $129 per capita in 2013 from $121 in 2012. Penetration decreased was flat at 2.7% of GDP.

Density = Premiums per capita
Penetration = Premiums as % of GDP

Source: Swiss Re, sigma no. 3, 2014; Insurance Information Institute.
Causes of the Underinsurance Gap and Ways to Narrow/Close It

Contributing Factors to the Underinsurance Gap

- Affordability
- Lack of Awareness
- Limits to Insurability
- Regulatory Deficiencies

Solutions that Will Help Close the Underinsurance Gap

- Compulsory Insurance
- Create a Conducive Regulatory, Legal and Tax Environment
- Build Public-Private Partnerships
- Develop New Products
- Microinsurance
- Enhance Data Collection/Sharing
- Foster a More Strategic Approach to Risk Among Businesses

Source: Geneva Association; Insurance Information Institute.
Cyber Risk is a Rapidly Emerging Exposure for Businesses Large and Small in Every Industry
Data Breaches 2005-2013, by Number of Breaches and Records Exposed

The Total Number of Data Breaches (+38%) and Number of Records Exposed (+408%) in 2013 Soared

Evolving Cyber Threats in Need of Insurance Solutions

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Sponsored Groups</td>
<td>• Foreign government sponsored</td>
</tr>
<tr>
<td></td>
<td>• Sophisticated and <strong>well-funded</strong></td>
</tr>
<tr>
<td>Organized Cyber Criminals</td>
<td>• Traditional organized crime groups</td>
</tr>
<tr>
<td></td>
<td>• Loosely organized <strong>global</strong> hacker crews</td>
</tr>
<tr>
<td>Hacktivists</td>
<td>• <strong>Politically-motivated</strong> hackers</td>
</tr>
<tr>
<td></td>
<td>• Increasing capabilities</td>
</tr>
<tr>
<td>Insiders</td>
<td>• Easy access to sensitive information</td>
</tr>
<tr>
<td></td>
<td>• Difficult to detect</td>
</tr>
<tr>
<td>Terrorists</td>
<td>• <strong>Destruction</strong> of physical and digital assets</td>
</tr>
</tbody>
</table>

Source: Price Waterhouse Cooper (PwC).
Cybersecurity spending is expected to increase by $5.2B in 2014, $5.8B in 2015 and $6.3B in 2016.

Cybersecurity Spending Is Rising Sharply, Up by About 8%+ Annually through 2016—a Projected Increase of $12.1 Billion from 2014 to 2016.


(Dollars per Employee)

- Insurance: $684
- Utilities: $651
- Banking: $553
- Professional Services: $376
- Industrial Manufacturing: $326
- Retail and Wholesale: $169

Information Security Spending by Financial Services and Critical Infrastructure Industries (e.g., Utilities) Outpaces that of Other Industries

The majority of the 614 data breaches in 2013 affected business and medical/healthcare organizations, according to the Identity Theft Resource Center.

- Business: 211 (34.4%)
- Medical/Healthcare: 269 (43.8%)
- Govt/Military: 56 (9.1%)
- Educational: 55 (9.0%)
- Banking/Credit/Financial: 23 (3.7%)
Information loss (43%) and business disruption or lost productivity (36%) account for the majority of external costs due to cyber crime. 

* Other costs include direct and indirect costs that could not be allocated to a main external cost category. 

TYPICAL STRUCTURE OF INSURER CYBER RISK PRODUCTS

Insurers’ Product Offerings Are Increasingly Designed to Provide End-to-End Cyber Risk Management Solutions
The Three Basic Elements of Cyber Coverage: Prevention, Transfer, Response

Loss Prevention

Loss Transfer (Insurance)

Post-Breach Response (Insurable)

Cyber risk management today involves three essential components, each designed to reduce, mitigate or avoid loss. An increasing number of cyber risk products offered by insurers today provide all three.

Source: Insurance Information Institute research.
Data/Privacy Breach: Many Potential Costs Can Be Insured

- Costs of notifying affecting individuals
- Defense and settlement costs
- Lost customers and damaged reputation
- Cyber extortion payments
- Business Income Loss
- Forensic costs to discover cause
- Regulatory fines at home & abroad
- Costs of notifying regulatory authorities

Source: Zurich Insurance; Insurance Information Institute
Big Data and the Era of Predictive Analytics & Modelling

For Insurers, It’s Always Been About the Data
Percentage of Carriers Using Predictive Analytics by Major P/C Line, 2013

Predictive analytics is more like to be used in personal lines, but commercial lines use is growing.

82% of insurers report using predicative analytics in at least one line. 18% do not use it all.

Benefits Cited
- Drive Profitability: 85%
- Reduce Risk: 55%
- Grow Revenue: 52%
- Improve Op. Efficiency: 39%

Uses of Predictive Analytics by Function

Pricing and Underwriting are the leading uses for predictive analytics.

Source: Earnix/ISO September 2013 Survey
Ample Capacity as Alternative Capital is Transforming Reinsurance Markets
Alternative Capacity accounted for approximately 11.5% or $59 billion of the $511 in global reinsurance capital as of mid-2014.

*As of June 30.

Source: Aon Benfield Analytics.
Investor by Category

Years ended June 30.
Source: Aon Benfield Securities; Insurance Information Institute.

Institutional investors are accounting for a larger share of alternative reinsurance investors.
Catastrophe Bonds: Issuance and Outstanding, 1997-2014:Q2

2014 Issuance Slowed Down Substantially; May Not Surpass 2013 Record

Sources: Guy Carpenter; Insurance Information Institute.
Terrorism Risk

Insurers Met the Challenge

But Politics Threaten to End a Successful Public/Private Partnership
Loss Distribution by Type of Insurance from Sept. 11 Terrorist Attack ($ 2013)

($ Billions)

- Aviation Liability: $4.3 (11%)
- Event Cancellation: $1.2 (3%)
- Aviation Hull: $0.6 (2%)
- Workers Comp: $2.2 (6%)
- Life: $1.2 (3%)
- Other Liability: $4.9 (12%)
- Property - WTC 1 & 2*: $4.4 (11%)
- Property - Other: $7.4 (19%)
- Biz Interruption: $13.5 (33%)

Total Insured Losses Estimate: $42.9B**

*Loss total does not include March 2010 New York City settlement of up to $657.5 million to compensate approximately 10,000 Ground Zero workers or any subsequent settlements.

**$32.5 billion in 2001 dollars.

Source: Insurance Information Institute.
In 2003, the first year TRIA was in effect, the terrorism take-up rate was 27 percent. Since then, it has increased steadily, remaining in the low 60 percent range since 2009.

TRIA’s high take-up rates, availability and affordability have benefitted businesses, workers and the entire US economy since the program’s enactment.
Insurance: A Financially Stable, Sound & Secure Industry

Very Different from Banks

Industry Impairment Rates Are Near Record Lows
The Number of Impairments Varies Significantly Over the P/C Insurance Cycle, With Peaks Occurring Well into Hard Markets

Impairment Rates Are Highly Correlated With Underwriting Performance and Reached Record Lows in 2007; Recent Increase Was Associated Primarily With Mortgage and Financial Guaranty Insurers and Not Representative of the Industry Overall

Source: A.M. Best; Insurance Information Institute
About 12% of P/C insurance companies (fewer than 1-in-8) today (2013) are 100+ years old. This is a surprisingly high percentage.

Odds of a Human Living to 100
Born 1900: ~0.25% (1-in-400)
Born Today: ~2% (1-in-50)

Source: National Association of Insurance Commissioners (NAIC) Annual Statement Database, via Highline Data LLC; CDC
Number of Recessions Endured by P/C Insurers, by Number of Years in Operation

Number of Recessions Since 1860

Insurers that have made it to the age of 150 have endured 32 recessions over the years.

Number of Years in Operation

Longevity Requires an Insurer to Overcome Extreme Economic Adversity of Every Sort

Sources: Insurance Information Institute research from National Bureau of Economic Research data.
Dodd-Frank Act of 2010: The implosion of the housing bubble and virtual collapse of the US banking system, the seizure of credit markets and massive government bailouts of US financial institutions led to calls for sweeping regulatory reforms of the financial industry.

Limiting Systemic Risk is at the Core of Dodd-Frank

Designation as a Systemically Important Financial Institutional (SIFI) Will Result in Greater Regulatory Scrutiny and Heightened Capital Requirements

Dodd-Frank Established Several Entities Impacting Insurers

- Federal Insurance Office
- Financial Stability Oversight Council
- Office of Financial Research
- Consumer Financial Protection Bureau
Global Financial Crises &
Global Systemic Risk

■ The Global Financial Crisis Prompted the G-20 Leaders to Request that the Financial Stability Board (FSB) Assess the Systemic Risks Associated with SIFIs, Global-SIFIs in Particular

■ In July 2013, the FSB Endorsed the International Association of Insurance Supervisors Methodology for Identifying Globally Systemically Important Insurers (G-SIIs)

■ For Each G-SII, the Following Will Be Required:
  (i) Recovery and resolution plans
  (ii) Enhanced group-wide supervision
  (iii) Higher loss absorbency (HLA) requirements

■ G-SIIs as Designated by the FSB as of July 2013:
  * Allianz SE
  * AIG
  * Assicurazioni Generali
  * Aviva
  * Axa
  * MetLife
  * Ping An
  * Prudential Financial
  * Prudential plc
Summary

- Insurance Remains an Essential Tool for Reducing Risk
- The Industry’s Future Is Increasingly Global
- Future Growth Will Incur More Risk
- New Challenges Abound, But So Do Opportunities
- Insurers Have Centuries of History Demonstrating their Ability to Major Through Era of Disruptive Risks
  - Operational
  - Economic
  - Regulatory
- Insurers Will Manage through Quantum Shifts and “Disruptor” Forces in the Decades Ahead
Insurance Information Institute Online:

www.iii.org

Thank you for your time and your attention!

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