2014 Half-Year Natural Catastrophe Review

July 9, 2014
Agenda

**Introduction**
Sharon Cooper
Press Spokesperson, Munich Re America

**US/Global Natural Catastrophe Update**
Carl Hedde
Head of Risk Accumulation, Munich Re America

**Special Topic: Global Warming and Natural Climate Oscillations**
Peter Höppe
Head of Geo Risk/Corporate Climate Center, Munich Re

**Economic Implications of Natural Catastrophe Losses**
Dr. Robert Hartwig
President & Economist, Insurance Information Institute
US Natural Catastrophe in the First Half of 2014
Carl Hedde, Head of Risk Accumulation
Munich Reinsurance America, Inc.
From 1980 until today all loss events; for USA and selected countries in Europe all loss events since 1970.

Retrospectively, all great disasters since 1950.

In addition, all major historical events starting from 79 AD – eruption of Mt. Vesuvio (3,000 historical data sets).

Currently more than 35,000 events
NatCatSERVICE Downloadcenter for statistics and analyses on natural disasters

The downloadcenter provides free access:

- Annual statistics
- Long-term statistics
- Information on significant natural disasters
- Focus analyses
- NatCatSERVICE methodology, info brochure
- Publication Topics Geo

www.munichre.com/natcatservice/downloadcenter/en
US Headlines – First Half 2014

- Insured losses in the United States in 2014 totaled $8.6 billion – far below the 2000 to 2013 average loss of $11.0 billion (Jan-July).

- The eastern United States experiences its coldest winter in over a decade; Resulting damage is estimated to exceed $2 billion.

- Late onset of tornado season, caused by the extended winter, results in lowest level of insured thunderstorm loss in the past seven years.

- Early wildfire season onset in California due to persistent drought conditions.

- Minor earthquake shakes Los Angeles Basin.
### Natural disaster losses in the U.S. 2014

#### Based on perils

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Number of Events</th>
<th>Fatalities</th>
<th>Estimated Overall Losses (US $m)</th>
<th>Estimated Insured Losses (US $m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe Thunderstorm</td>
<td>33</td>
<td>65</td>
<td>9,100</td>
<td>6,700</td>
</tr>
<tr>
<td>Winter Storms &amp; Cold Waves</td>
<td>11</td>
<td>84</td>
<td>3,400</td>
<td>2,400</td>
</tr>
<tr>
<td>Flood, flash flood</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Earthquake &amp; Geophysical, landslides</td>
<td>5</td>
<td>44</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Tropical Cyclone</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wildfire, Heat Waves, &amp; Drought</td>
<td>8</td>
<td>1</td>
<td>770</td>
<td>-</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>67</strong></td>
<td><strong>195</strong></td>
<td><strong>13,300</strong></td>
<td><strong>9,100</strong></td>
</tr>
</tbody>
</table>
US Natural Catastrophe Update

Loss events in the U.S. 1980 – 2014
Number of events (January – June only)

First Six Months in 2014
67 Events

Meteorological events
(Tropical storm, extratropical storm, convective storm, local storm)

Hydrological events
(Flood, mass movement)

Climatological events
(Extreme temperature, drought, forest fire)

Geophysical events
(Earthquake, tsunami, volcanic activity)

Source: Munich Re, NatCatSERVICE
Loss events in the U.S. 1980 – 2014
Number of events (annual totals 1980 – 2013 vs. first six months 2014)

First Six Months in 2014
67 Events

- Geophysical events (Earthquake, tsunami, volcanic activity)
- Meteorological events (Tropical storm, extratropical storm, convective storm, local storm)
- Hydrological events (Flood, mass movement)
- Climatological events (Extreme temperature, drought, forest fire)

Source: Munich Re, NatCatSERVICE
Overall losses totaled US$ 13.3bn; Insured losses totaled US$ 9.1bn

Loss events in the U.S. 1980 – 2014
Overall and insured losses (annual totals 1980 – 2013 vs. first six months 2014)

Source: Munich Re, NatCatSERVICE

*Losses adjusted to inflation based on country CPI
US Natural Catastrophe Update

Loss events in the U.S. 1980 – 2014
Overall and insured losses (January – June only)

Overall losses totaled US$ 13.3bn; Insured losses totaled US$ 9.1bn

Source: Munich Re, NatCatSERVICE

*Losses adjusted to inflation based on country CPI
Notable U.S. Events in the First Half of 2014
Throughout the winter months, a persistent “Omega Block” pattern, combined with a weakened Polar Vortex, allowed frigid air to stream southward into eastern United States & Canada. Minimum temperatures in some locations were the lowest in 20 years. Due to the cold conditions, several significant frozen precipitation events occurred across the eastern U.S., reaching as far south as the Florida panhandle.

Source: NASA
Loss events in the U.S. 1980 – 2014
Insured losses due to winter storms*

Overall losses totaled US$ 3.4bn; Insured losses totaled US$ 2.4bn

*Winter storms include winter damage, blizzard, snow storm and cold wave

**Losses adjusted to inflation based on country CPI
The preliminary tornado counts for the first half of 2014 are about 280 below the 2005-2013 average.

However, tornado counts in April (220) and June 2014 (313) were much higher than observed in 2013.
US Natural Catastrophe Update

Convective loss events in the U.S.
Number of events 1980 – 2013 and the half year 2014

Convective storm
Loss events caused by severe storm, tornado, hail, flash flood and lightning
Convective loss events in the U.S.
Overall and insured losses 1980 – 2013 and the half year 2014

Analysis contains:
severe storm, tornado, hail, flash flood and lightning

*Losses adjusted to inflation based on U.S. CPI
April 28 – May 1: Large SCS outbreak over the Central Plains and Deep South. A total of 80 tornadoes have been confirmed, causing 35 fatalities. Worst hit were Mayflower, Arkansas, and Louisville, Mississippi, both hit by EF4 tornadoes. Insured losses from the outbreak are estimated at $1.1 billion.
May 18 – May 23: Large hail and non-tornadic wind event stretching from Montana to New York. Hail the size of golf balls impacted sections of Chicago and Denver, and baseball-sized hail impacted parts of Indiana and Ohio. Further east, wind gusts in excess of hurricane force felled trees and power lines across the Mid-Atlantic. Insured losses are estimated at $1.7 billion.

Source: NOAA
Current U.S. drought conditions

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
A heat wave and strong Santa Ana winds triggered eight wildfires in San Diego County in May. Over 29,000 acres were burned, with about 60 properties destroyed. While this event was minor, continued dry conditions could lead to large fires in the fall.
Global Natural Catastrophes in the First Half of 2014
In the first half of 2014 losses from natural catastrophes summed up to US$ 42bn for direct economic losses and US$ 17bn for insured losses, both well below the average of the last 10 years.

Even the biggest loss events did not exceed more than a few billion dollars.

At 2,700 the number of fatalities was clearly below the long-term average.

Extraordinary hard winter conditions affected the U.S. and Japan while various parts of Europe suffered from heavy rainfall, storms and flooding.

Nearly 60% of all insured losses occurred in North America. This is in line with the long-term average from 1980 – 2013.
Global Natural Catastrophe Update
Loss events January – June 2014
Geographical overview

Winter damage
USA
5–8.1.2014

Severe storm, hailstorms
USA, 18–23.5.2014

Severe storm, tornadoes, flash floods
USA, 27.4–1.5.2014

Drought
Brazil, Dec 2013 – Mar 2014

Winterstorms, floods
UK, Ireland
Dec 2013 – Feb 2014

Floods
Eastern Europe
13–30.5.2014

Floods, landslides
Afghanistan
Apr – Jun 2014

Winter damage
Japan
6–18.2.2014

Severe storm, hailstorm
France, Germany, Belgium
8–10.6.2014

Cyclone Ita
Australia, New Zealand, Papua New Guinea
5–18.4.2014

490
Loss events

Meteorological events
(Tropical storm, extratropical storm, convective storm, local storm)

Hydrological events
(Flood, mass movement)

Climatological events
(Extreme temperature, drought, wildfire)

Geophysical events
(Earthquake, tsunami, volcanic activity)

Loss events
Selection of catastrophes

Source: Munich Re, NatCatSERVICE, 2014
Global Natural Catastrophe Update

Loss events worldwide 1980 – 2014
Number of events (annual totals 1980 – 2013 vs. first six months 2014)

First Six Months in 2014
490 Events

Source: Munich Re, NatCatSERVICE
Global Natural Catastrophe Update

Loss events worldwide 1980 – 2014
Number of events (January – June only)

First Six Months in 2014
490 Events

- **Geophysical events** (Earthquake, tsunami, volcanic activity)
- **Meteorological events** (Tropical storm, extratropical storm, convective storm, local storm)
- **Hydrological events** (Flood, mass movement)
- **Climatological events** (Extreme temperature, drought, forest fire)

Source: Munich Re, NatCatSERVICE
Loss events worldwide 1980 – 2014
Overall and insured losses (annual totals 1980 – 2013 vs. first six months 2014)

Overall losses totaled US$ 42bn; Insured losses totaled US$ 17bn

*Losses adjusted to inflation based on country CPI

Source: Munich Re, NatCatSERVICE
Global Natural Catastrophe Update

Loss events worldwide 1980 – 2014

Overall and insured losses (January – June only)

Overall losses totaled US$ 42bn; Insured losses totaled US$ 17bn

Source: Munich Re, NatCatSERVICE

*Losses adjusted to inflation based on country CPI
## Global Natural Catastrophe Update

### Loss events worldwide 2014
Overview and comparison with previous years

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of events</td>
<td>490</td>
<td>470</td>
<td>410</td>
<td>315</td>
<td>620 (2012)</td>
</tr>
<tr>
<td>Overall losses</td>
<td>42,000</td>
<td>65,800</td>
<td>94,500</td>
<td>65,800</td>
<td>302,000 (2011, EQ Japan)</td>
</tr>
<tr>
<td>in US$ m (original values)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insured losses</td>
<td>17,000</td>
<td>21,100</td>
<td>24,900</td>
<td>14,700</td>
<td>82,000 (2011, EQ Japan)</td>
</tr>
<tr>
<td>in US$ m (original values)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatalities</td>
<td>2,700</td>
<td>9,100</td>
<td>52,600</td>
<td>29,500</td>
<td>230,000 (2010, EQ Haiti)</td>
</tr>
</tbody>
</table>

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## Global Natural Catastrophe Update

### Loss events worldwide 2014

The five costliest natural catastrophes for the insurance industry

<table>
<thead>
<tr>
<th>Date</th>
<th>Region</th>
<th>Event</th>
<th>Fatalities</th>
<th>Overall losses US$ m</th>
<th>Insured losses US$ m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-18.2.2014</td>
<td>Japan</td>
<td>Winter damage</td>
<td>51</td>
<td>5,000</td>
<td>&gt;2,500</td>
</tr>
<tr>
<td>8-10.6.2014</td>
<td>Western Europe</td>
<td>Severe storm, hailstorm</td>
<td>6</td>
<td>2,800</td>
<td>2,500</td>
</tr>
<tr>
<td>5-8.1.2014</td>
<td>United States</td>
<td>Winter damage</td>
<td></td>
<td>2,500</td>
<td>1,700</td>
</tr>
<tr>
<td>18-23.5.2014</td>
<td>United States</td>
<td>Severe storm</td>
<td></td>
<td>2,000</td>
<td>1,550</td>
</tr>
<tr>
<td>27.4-1.5.2014</td>
<td>United States</td>
<td>Severe storm, tornadoes, flash floods</td>
<td>40</td>
<td>1,700</td>
<td>1,100</td>
</tr>
</tbody>
</table>
Japan: A pair of heavy snowfall events caused significant infrastructure disruptions and damage across the country in mid-February. Four auto manufacturing plants had to suspend operations due to the conditions. Hundreds of residential and commercial buildings collapsed due to snow loads, and over 270,000 lost power due to snow and wind gusts to hurricane force. In large part due to business interruption losses, insured losses from this winter storm outbreak are estimated at $2.5bn.
Notable global events
First Half 2014

France, Germany, Netherlands: Several severe thunderstorms developed on June 8 & 9 that produced several swaths of large hail. Tile roofs, windows, and skylights were shattered by the tennis-ball sized hail, and heavy rains flooding thousands of. Agricultural activities were also severely impacted. Although not as damaging as the $3.7 billion loss from the last year’s hail events in Germany, this event still caused estimated insured losses of $2.5 billion across four countries.
United Kingdom: A series of intense extratropical storms brought several bouts of heavy rains during the winter of 2014, causing widespread flooding around the country. Access to some villages was cut off for a month, and over 6,500 properties were flooded. Coastal flooding and erosion was also caused by the persistent storms. Insured losses from the flooding are estimated at about $1.1 billion.
### Global Natural Catastrophe Update

#### Costliest natural catastrophes since 1950

Ranked by insured losses

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Region</th>
<th>Insured loss US$m (in original values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Hurricane Katrina</td>
<td>USA</td>
<td>62,200</td>
</tr>
<tr>
<td>2011</td>
<td>EQ, tsunami</td>
<td>Japan</td>
<td>40,000</td>
</tr>
<tr>
<td>2012</td>
<td>Hurricane Sandy</td>
<td>USA, Caribbean</td>
<td>29,500</td>
</tr>
<tr>
<td>2008</td>
<td>Hurricane Ike</td>
<td>USA, Caribbean</td>
<td>18,500</td>
</tr>
<tr>
<td>1992</td>
<td>Hurricane Andrew</td>
<td>USA</td>
<td>17,000</td>
</tr>
<tr>
<td>2011</td>
<td>Floods</td>
<td>Thailand</td>
<td>16,000</td>
</tr>
<tr>
<td>1994</td>
<td>EQ Northridge</td>
<td>USA</td>
<td>15,300</td>
</tr>
<tr>
<td>2011</td>
<td>EQ Christchurch</td>
<td>New Zealand</td>
<td>14,600</td>
</tr>
<tr>
<td>2004</td>
<td>Hurricane Ivan</td>
<td>USA, Caribbean</td>
<td>13,800</td>
</tr>
<tr>
<td>2005</td>
<td>Hurricane Wilma</td>
<td>USA, Caribbean</td>
<td>12,500</td>
</tr>
</tbody>
</table>
Global warming and natural climate oscillations
Peter Höppe, Head of Geo Risk Unit/Corporate Climate Center
Munich Re
Ongoing sea-level rise: coastal systems and low-lying areas will increasingly experience submergence, coastal flooding and erosion will affect increasing fractions of population and assets.

Fraction of population annually experiencing water scarcity and the fraction affected by major river floods will increase in the 21st century with the level of warming.

More frequent and/or severe extreme events will increase losses and loss variability.

Changing loss patterns will challenge insurance systems to offer affordable coverage, provide more risk-based capital.
El Nino years tend to increase the global average temperature

Annual Global Temperature Anomalies 1950-2012

The combined average temperature over global land and ocean surfaces for May has been the highest on record for this month.
Update on current El Niño development
ENSO (El Niño/Southern Oscillation)

Definitions

- ENSO (El Niño/Southern Oscillation) is a natural climate oscillation in the tropical Pacific Ocean, which affects both the ocean and the atmosphere.
- The anomaly of the sea surface temperature in the so called Niño3.4-Region (= Niño3.4-Index) is used to define the ENSO-Phases:
  - **El Niño** (Niño3.4-Index >0,5)
  - **Neutral Phase** (Niño3.4-Index <0,5 und >-0,5)
  - **La Niña** (Niño3.4-Index <-0,5)

Source: Climate Prediction Center/NOAA

Location of Niño3.4-region
**ENSO (El Niño/Southern Oscillation)**

Phases

**ENSO (El Niño/Southern Oscillation) is a coupled atmospheric-oceanic phenomenon:**

- **El Niño:** Rising moist air masses above Indonesia/Australia, strong rising of air masses over the eastern tropical Pacific.
- **La Niña:** Increased rising of moist air over Indonesia/Australia, increased sinking of dry air over the tropical coast of South America.
- **ENSO neutral:** Sinking of air (drying) above the tropical western edge of the Pacific (Indonesia/Australia), strong rising of air masses over the eastern tropical Pacific.

Current Forecasts of El Niño

Source: IRI, Earth Institute, Columbia University
http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/ 2014 Munich Re, GeoRisk Unit, NatCatSERVICE
Munich Re assessment of ENSO status and outlook as of July 2014

- Central and particularly eastern equatorial Pacific sea surface temperatures have risen
- The threshold for weak El Niño (EN) conditions has already been reached
- They may develop into stronger intensity levels close to the boundary between weak and moderate around fall
- This level will prevail through the remainder of the year
- According to current model runs an intensification into a strong EN event is not probable
- The stronger the EN intensity reached in late 2014, the more likely is the development of a La Niña event in the second half of the following "decay year" 2015
Expected deviations of weather patterns at moderate EN intensity level

- Lower activity of Atlantic hurricane season
- Increased flood risks at US West Coast, several regions in South America, Southeast China and Horn of Africa
- Increased risk of droughts in East and North Australia, Southeast and South (India, Pakistan, Bangladesh) Asia, Southern Africa, North/Northeast Brazil
## Weather related loss events worldwide 1980-2013

<table>
<thead>
<tr>
<th>Period</th>
<th>Overall losses US$m (normalized to 2013)*</th>
<th>Insured losses US$m (normalized to 2013)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term average (1980-2013)</td>
<td>171.1</td>
<td>33</td>
</tr>
</tbody>
</table>

(El Nino-year classification based on ENSO-ONI index (NOAA) with *moderate* El Nino if at least 3 months in any El Nino phase where between 1 and 1.5 K and *strong* El Nino if above 1.5 K.)

*normalized with national GDP, changes in insurance density not considered

Source: Munich Re, NatCatSERVICE
Market & Financial Impact of Catastrophe Losses: 
First Half 2014 Summary

Insurance Information Institute
July 9, 2014

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
WINTER STORM LOSSES: Significant Economic Impact

Losses from Snow, Ice, Freezing and Related Causes Typical Cost Insurers Between $1 Billion and $2 Billion Annually ($2.4B in 2014)
US Real GDP Growth*

The Q4:2008 decline was the steepest since the Q1:1982 drop of 6.8%.

Recession began in Dec. 2007. Economic toll of credit crunch, housing slump, labor market contraction was severe.

Q1 2014 GDP data were hit hard by this year’s “Polar Vortex” and harsh winter.

Some of the Losses from Harsh Winter Weather Are Insured, Offsetting Adverse Economic Impacts; Other Losses Were Uninsured and Some Losses Were Transient (Economic Activity Pushed to Later in 2014)

* Estimates/Forecasts from Blue Chip Economic Indicators.

Source: US Department of Commerce, Blue Economic Indicators 7/14; Insurance Information Institute.
Inflation Adjusted U.S. Catastrophe Losses by Cause of Loss, 1993–2012

Winter storms are the 3rd leading cause of insured CAT losses.

Winter storm losses totaled $27.8B or $1.4B/yr. on average from 1993-2012 accounting for 7.1% of all CAT losses; 2013 losses totaled $1.895B.

1. Catastrophes are defined as events causing direct insured losses to property of $25 million or more in 2012 dollars.
2. Excludes snow.
3. Does not include NFIP flood losses
4. Includes wildfire fires
5. Includes civil disorder, water damage, utility disruptions and non-property losses such as those covered by workers compensation.

Source: ISO's Property Claim Services Unit.
Value of New Private Construction: Residential & Nonresidential, 2003-2014*

- New private construction peak at $911.8B in 2006
- Trough in 2010 at $500.6B, after plunging 55.1% ($411.2B)
- 2014: Value of new pvt. construction hits $686.5B as of Apr. 2014, up 37% from the 2010 trough but still 25% below 2006 peak

Construction risks are a potent generator of commercial lines premium. The severe winter caused construction activity to slow. Some premium growth was pushed to Q2.

*2014 figure is a seasonally adjusted annual rate as of April.

Sources: US Department of Commerce; Insurance Information Institute.
P/C Insurance Industry: Financial Update

2013 was the industry’s best year in the post-recession era; 2014 is off to a good start
P/C Industry Net Income After Taxes
1991–2014:Q1

Net income rose strongly (+81.9%) in 2013 vs. 2012

2014 is off to a good start

1. ROE figures are GAAP. ¹Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields an 8.2% ROAS through 2014:Q1, 9.8% ROAS in 2013, 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.8% for 2010 and 7.4% for 2009.

Sources: A.M. Best, ISO, Insurance Information Institute
A 100 Combined Ratio Isn’t What It Once Was: Investment Impact on ROEs

Combined Ratio / ROE

- A combined ratio of about 100 generates an ROE of ~7.0% in 2012/13, ~7.5% ROE in 2009/10, 10% in 2005 and 16% in 1979.
- Lower CATs helped ROEs in 2013/14.

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

*2008 - 2014 figures are return on average surplus and exclude mortgage and financial guaranty insurers. 2014:Q1 combined ratio including M&FC insurers is 97.3; 2013 = 96.1; 2012 =103.2, 2011 = 108.1, ROAS = 3.5%.
Source: Insurance Information Institute from A.M. Best and ISO Verisk Analytics data.
SURPLUS/CAPITAL/CAPACITY

Industry Claims Paying Capital Stands at Record High in 2014

(Re)Insurance Industry is Well Positioned to Manage Large Scale Catastrophe Losses
The industry now has $1 of surplus for every $0.73 of NPW, the strongest claims-paying status in its history.

Low CAT losses are a driver of increased capital.

Note: 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
Investments: The New Reality

Investment Income Offsets Less Loss than in the Past, Including Losses from Catastrophes
Investment earnings are still below their 2007 pre-crisis peak.

Due to persistently low interest rates, investment income fell in 2012 and in 2013 and is falling again in 2014.

Investment gains consist primarily of interest and stock dividends.  
*2014 investment income is annualized based on Q1 actual = $11.18B.

Sources: ISO; Insurance Information Institute.
UNDERWRITING

Underwriting Results in 2014 Have Been Helped by Generally Lower Catastrophe Losses

Too Soon to Tell if 2014 Will Continue 2013’s Welcome Respite from High Catastrophe Loss Years Like 2011/2012
P/C Insurance Industry
Combined Ratio, 2001–2014:Q1

As Recently as 2001, Insurers Paid Out Nearly $1.16 for Every $1 in Earned Premiums

Heavy Use of Reinsurance Lowered Net Losses

Best Combined Ratio Since 1949 (87.6)

Relatively Low CAT Losses, Reserve Releases

Relatively Low CAT Losses, Reserve Releases

Cyclical Deterioration

Avg. CAT Losses, More Reserve Releases

Higher CAT Losses, Shrinking Reserve Releases, Toll of Soft Market

Sandy Impacts

Lower CAT Losses

115.8
110
105
100
95
90

2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014:Q1


Sources: A.M. Best, ISO.
Severe Weather Reports As of Mid-2014*

*Through July 7.
Source: NOAA Storm Prediction Center; [http://www.spc.noaa.gov/climo/online/monthly/2014_annual_summary.html](http://www.spc.noaa.gov/climo/online/monthly/2014_annual_summary.html)

Severe weather reports are concentrated east of the Rockies

There were 11,641 severe weather reports through July 7, 2014; including 784 tornadoes; 3,895 “Large Hail” reports and 6,961 high wind events
Number of Federal Major Disaster Declarations, 1953 - June 30, 2014*

There have been 2,167 federal disaster declarations since 1953. The average number of declarations per year is 35 from 1953-2013, though there few haven’t been recorded since 1995.

The number of federal disaster declarations set a new record in 2011, with 99, shattering 2010’s record 81 declarations.

27 federal disasters were declared through June 30, 2014

The Number of Federal Disaster Declarations Is Rising and Set New Records in 2010 and 2011 Before Dropping in 2012/13

*Through June 30, 2014.
Combined Ratio Points Associated with Catastrophe Losses: 1960 – 2014E

The Catastrophe Loss Component of Private Insurer Losses Has Increased Sharply in Recent Decades

*2010s represent 2010-2014E.

Notes: Private carrier losses only. Excludes loss adjustment expenses and reinsurance reinstatement premiums. Figures are adjusted for losses ultimately paid by foreign insurers and reinsurers.

Source: ISO (1960-2011); A.M. Best (2012-2013); Insurance Information Institute.
Premium Growth

Catastrophe Losses Impact Trajectory of Premium Growth

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

Net Written Premiums Fell 0.7% in 2007 (First Decline Since 1943) by 2.0% in 2008, and 4.2% in 2009, the First 3-Year Decline Since 1930-33.

2014:Q1: 3.6%
2013: 4.6%
2012: +4.3%
2014:Q1 premium written growth decelerated, but was still the marking the 16th consecutive quarter of y-o-y growth.

Sustained growth in written premiums (vs. the same quarter, prior year) should continue through 2014.

Sources: ISO, Insurance Information Institute.
Outlook for the 2014 Atlantic Hurricane Season

Somewhat Below Average Activity, Fewer Landfalls Expected
Outlook for 2014 Hurricane Season:

30% Less Active Than Typical Year

<table>
<thead>
<tr>
<th>Category</th>
<th>Median*</th>
<th>2005 (Katrina Year)</th>
<th>2014F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Named Storms</td>
<td>12.0</td>
<td>28</td>
<td>10</td>
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<tr>
<td>Named Storm Days</td>
<td>60.1</td>
<td>115.5</td>
<td>40</td>
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<tr>
<td>Hurricanes</td>
<td>6.5</td>
<td>14</td>
<td>4</td>
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<tr>
<td>Hurricane Days</td>
<td>21.3</td>
<td>47.5</td>
<td>15</td>
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<tr>
<td>Major Hurricanes</td>
<td>2.0</td>
<td>7</td>
<td>1</td>
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<tr>
<td>Major Hurricane Days</td>
<td>3.9</td>
<td>7</td>
<td>3</td>
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<tr>
<td>Accumulated Cyclone Energy</td>
<td>92.0</td>
<td>NA</td>
<td>65</td>
</tr>
<tr>
<td>Net Tropical Cyclone Activity</td>
<td>103%</td>
<td>275%</td>
<td>70%</td>
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*Over the period 1981-2010.
Source: Dr. Philip Klotzbach and Dr. William Gray, Colorado State University, June 2, 2014.
## Probability of Major Hurricane Landfall (CAT 3, 4, 5) in 2014

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<th>Average*</th>
<th>2014F</th>
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<tr>
<td>Entire US Coast</td>
<td>52%</td>
<td>40%</td>
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<tr>
<td>US East Coast Including Florida Peninsula</td>
<td>31%</td>
<td>22%</td>
</tr>
<tr>
<td>Gulf Coast from FL Panhandle to Brownsville, TX</td>
<td>30%</td>
<td>23%</td>
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*Also…Above-Average Major Hurricane Landfall Risk in Caribbean for 2011 (32% vs. 42%)*

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*Average over the past century. Source: Dr. Philip Klotzbach and Dr. William Gray, Colorado State University, June 2, 2014.*
Natural Disaster Risk and Public Opinion

Many Americans Are Unconcerned About Natural Disaster Risks

Many Support Subsidies

Virtually All Value Insurer Strength
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?

- Risk Not a Major Consideration: 28%
- Risk a Significant Influence on Purchase: 53%
- Willing to Accept Risk: 17%
- Don’t Know: 3%

Nearly Half of the Public Does Not Consider Natural Disaster Risk to Be a Concern or Is Willing to Accept the Risk When Buying a Home.

Source: Insurance Information Institute Annual Pulse Survey.
Q. Congress recently passed a law that will roll back some of the rate increases it put in place for homeowners who purchase subsidized flood insurance from the government. . . . Do you think the recent rate rollback and subsidies should remain in place for most homeowners who purchase flood insurance; or the rollbacks and subsidies should be eliminated; or don’t know?

- 62% Remain in Place
- 27% Eliminated
- 10% Don’t Know

Most Americans Support the Flood Insurance Rate Rollback (i.e. maintaining many subsidies).

Source: Insurance Information Institute Annual Pulse Survey.
Q. How important is the financial strength and stability of your insurance company to you? Is it extremely important, very important, somewhat important, not very important, not important at all or don’t know?

Almost Half the Public Things That the Strength of Their Insurance Company Is Very Important, and Another Third Think It Is Extremely Important

Source: Insurance Information Institute Annual Pulse Survey.
Insurance Information Institute Online:

www.iii.org

Thank you for your time and your attention!

Twitter: twitter.com/bob_hartwig
Press Inquiries

Sharon Cooper  
Phone: +1 (609) 243-8821  
E-mail: scooper@munichreamerica.com

Terese Rosenthal  
Phone: +1 (609) 243-4339  
E-mail: trosenthal@munichreamerica.com
NatCatSERVICE Downloadcenter for statistics and analyses on natural disasters

The downloadcenter provides **free** access:

- Annual statistics
- Long-term statistics
- Information on significant natural disasters
- Focus analyses
- NatCatSERVICE methodology, info brochure
- Publication Topics Geo

www.munichre.com/natcatservice/downloadcenter/en
Weather Resilience and Protection (WRAP)

Website

Describe the impact of severe weather and how individuals, businesses, government, and insurers can work together to prepare for and mitigate weather risks.

Will include data, publications, preparation tips and other useful information for the press.

www.munichre.us/wrap
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