Insurance: Vanguard of the Resilient

Elevate Conference
Salt Lake City, Utah
February 12, 2019

James Lynch, Chief Actuary and Vice President of Research and Education
Insurance Information Institute • Washington, DC • New York, NY
212.346.5533 • jamesl@iii.org • www.iii.org
I.I.I. Mission Statement

Improving public understanding of insurance...

...what it does and how it works.
How Insurance Drives Economic Growth

Safety/Security
1. Insurers are financial first responders
2. Insurers are risk mitigators

Economic/Financial Stability
3. Insurers are capital protectors
4. Insurance is a partner in social policy
5. Insurance sustains the supply chain
6. Insurers are capital infusers

Development
7. Insurers are community builders
8. Insurance enables infrastructure improvements
9. Insurers are innovation catalysts
10. Insurers are credit facilitators
An Age of Disruption
Economics

Strengthening Fundamentals:
All OECD economies growing – 1st in 10 yrs.

Tepid monetary policies; keeping interest rates at historical lows — moving slow...

Fiscal policies, i.e. tax reform and deregulation surfacing.
Geopolitical


Political gridlock in Congress, with 2018 election lurking.

“Major conflict threat greatest since WWII” – US Intelligence Report to Congress

* Source: Harvard University, Tony Blair Institute
Technology

Robotics
Artificial Intelligence

“The Fourth Industrial Revolution”
Cyber meets Physical

Big Data
Internet of Things
Social Economy
Catastrophes

Extreme Weather Threatens Union
1982 Union, Missouri, Flood

A Storm for the Ages

Bourbeuse River
Record Crest
33.8 feet
12/5/1982

Source: Fox2News.com, @BoxxRadio.
2015 Union, Missouri, Flood

A Storm for the Ages

Sources: CBSnews.com; fox2news.com
2017 Union, Missouri, Flood

“Unfortunately, it’s a river and Mother Nature. And we can’t control her.”

Bourbeuse River
Crest
30.1 feet
May 2-3, 2017

Source: eMissourian.com
## Extreme Events: A Troubling Trend

<table>
<thead>
<tr>
<th>Rank</th>
<th>Date</th>
<th>Event</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 2005</td>
<td>Hurricane Katrina</td>
<td>Hurricane</td>
</tr>
<tr>
<td>2</td>
<td>Sep. 2017</td>
<td>Hurricane Maria</td>
<td>Hurricane</td>
</tr>
<tr>
<td>3</td>
<td>Sep. 2017</td>
<td>Hurricane Irma</td>
<td>Hurricane</td>
</tr>
<tr>
<td>4</td>
<td>Sep. 2001</td>
<td>September 11 Events</td>
<td>Terrorism</td>
</tr>
<tr>
<td>5</td>
<td>Oct. 2012</td>
<td>Hurricane Sandy</td>
<td>Hurricane</td>
</tr>
<tr>
<td>6</td>
<td>Aug. 2017</td>
<td>Hurricane Harvey</td>
<td>Hurricane</td>
</tr>
<tr>
<td>7</td>
<td>Aug. 1992</td>
<td>Hurricane Andrew</td>
<td>Hurricane</td>
</tr>
<tr>
<td>8</td>
<td>Jan. 1994</td>
<td>Northridge, CA earthquake</td>
<td>Earthquake</td>
</tr>
<tr>
<td>9</td>
<td>Sep. 2008</td>
<td>Hurricane Ike</td>
<td>Hurricane</td>
</tr>
<tr>
<td>10</td>
<td>Oct. 2005</td>
<td>Hurricane Wilma</td>
<td>Hurricane</td>
</tr>
</tbody>
</table>

**Three of 10 Worst US Catastrophes Occurred in 2017.**

Source: The Property Claim Services® (PCS®) unit of ISO®, a Verisk Analytics® company.
2018 – Second worst year for U.S. Insured Catastrophe Losses. Average Insured Loss per Year for 1980-2018 is $18.5 B.

*2018: Inflation-adjusted PCS estimate, subject to change. 2010s is average of 2010 to 2018.
Sources: Property Claims Service, a Verisk Analytics business; Swiss Re; Insurance Information Institute.
Disruptive Forces in the World – The New Norm

Catastrophes  Economics

Geopolitical  Technology
Insurance Leading Throughout History

- 1648
- 1784
- 1870
- 1969
- ???

Cyber-Physical Systems
Insurance: Leading the Way
Education & Analysis

Closing the Coverage Gap

- 2005-2015: $1.3 Trillion in Uninsured Losses
- 70 Percent of Catastrophe Losses Are Uninsured

Source: Swiss Re; Wikimedia Commons; DOD
Extreme weather
Insurance industry initiatives

I.I.I. white paper
The Actuaries Climate Index: USA and Canada by Region, 2018 Winter
IBHS resources

Source: Insurance Information Institute, Actuaries Climate Index, Insurance Institute for Business & Home Safety.
Actuaries Climate Index – Measuring Weather Extremes

Seasonal Five-Year Moving Average, United States

Index Measures Frequency of Extreme Events (Heat, Cold, Drought, Wind, Rain, Sea Level) Vs. 1961-1990 Average

Source: Actuaries Climate Index, http://actuariesclimateindex.org/home/
Future Cities

Lloyd’s Initiative

To Improve Resilience

- Prevent Failure
- Expedite Recovery
- Transform Performance

Source: Lloyd’s/Arup, “Future Cities: Building Infrastructure Resilience”
(Re)insurance Products

<table>
<thead>
<tr>
<th>Private Industry</th>
<th>Case Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEMA Reinsurance</td>
<td>Through a $150 million purchase of private reinsurance products, FEMA was able to recover approximately $1 billion, or an eighth of its total 2017 loses.</td>
</tr>
<tr>
<td>NFIP NatCat Bonds</td>
<td>By issuing new natural catastrophe bonds geared towards institutional investors, the NFIP can bring an estimated $500 million of additional reinsurance coverage.</td>
</tr>
<tr>
<td>Private Market Flood Products</td>
<td>During 2017, the private flood insurance market added 50 new carriers. Direct private flood insurance premiums written reached $630 million, an increase of $217 million over 2016.</td>
</tr>
</tbody>
</table>

Insurance Industry Economic Trends
Direct Premium Growth, Annual Change

Direct Premiums Continue to Track Economic Growth

All data through second quarter.

SOURCES: NAIC data sourced through S&P Global Intelligence, Bureau of Economic Affairs, Insurance Information Institute.
P/C industry net income after taxes

Billions, 2018 dollars


Through third quarter. Adjusted for inflation using the BLS CPI calculator, to 2018 dollars.
Sources: NAIC data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
P/C Insurance Industry
Combined Ratio, 2000-2018*

Key sources of P/C insurer profits

Data are before taxes and exclude extraordinary items.
Sources: NAIC data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Yields Have Been Falling for Over a Decade, Reflecting the Long Downward Trend in Prevailing Interest Rates.

Sources: NAIC data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Insurance: Disruption or Transformation?
The (Re)Insurance Value Chain

Where Could Disruption/Transformation Lie?

Protecting People & Organizations

Brains + Bank Account
Create Policy/Treaty
Market Policy/Treaty
Write Risk
Price Risk
Perform Loss Control
Settle Claims
Improve World

These Disruptions Usually Start in Personal Insurance, Will Move to Commercial Insurance.
Alternative Capital
Potentially Disrupting the Bank Account

Alternative Capacity Has Grown 480% Since 2006. It Has More Than Quadrupled in the Past Six Years.

Source: Aon Benfield Analytics; Insurance Information Institute.
The Internet

Will It Disrupt Marketing?

- **Lead Generators**
  - InsWeb, NetQuote, Insurance.com
  - Site allows comparison shopping, sells lead to insurer

- **Call Center Agencies**
  - SelectQuote, Goji
  - Call center employs agents

- **Digital agencies**
  - Esurance, Policy Genius
  - Quote and buy online

**But Customers Still Like Agents**

**Did You Compare Prices When Your Auto Policy Was Up for Renewal?**

- Don't Know: 1%
- None of These: 29%
- Any Method: 69%
- By Phone: 37%
- Online: 39%
- Talk to Agent: 50%

**Sources:**
Pricing Disruptor: The Fragmented Risk
Loss Control Disruptor

The Internet of Things

Telematics Today

Telematics Tomorrow

fitbit

iWatch
Claims Disruptor

Artificial Intelligence + Behavioral Economics

Lemonade
### InsurTech Startups Have Broad Range…BUT…

<table>
<thead>
<tr>
<th>Risk</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insurance Marketplace</strong></td>
<td><strong>Digital Brokers</strong></td>
</tr>
<tr>
<td>CoverHound</td>
<td>turtlemint</td>
</tr>
<tr>
<td>policybazaar</td>
<td>Coverfox</td>
</tr>
<tr>
<td><strong>Peer to Peer</strong></td>
<td><strong>Health Navigators</strong></td>
</tr>
<tr>
<td>friendsurance</td>
<td>Lemonade</td>
</tr>
<tr>
<td>GUEVARA</td>
<td>YYY PEERCOVER</td>
</tr>
<tr>
<td><strong>Micro-duration Coverage</strong></td>
<td><strong>Telematics</strong></td>
</tr>
<tr>
<td>trov</td>
<td>Slice</td>
</tr>
<tr>
<td>TrueMotion</td>
<td>Metromile</td>
</tr>
</tbody>
</table>

Source: Aon.
With Broad Incumbent Support

<table>
<thead>
<tr>
<th>Company</th>
<th>Funding</th>
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</thead>
<tbody>
<tr>
<td>Metromile</td>
<td>$205M</td>
</tr>
<tr>
<td>intact insurance</td>
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<tr>
<td>China Pacific Insurance</td>
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<tr>
<td>CoverHound</td>
<td>$57M</td>
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<tr>
<td>CHUBB</td>
<td></td>
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<tr>
<td>AMERICAN FAMILY VENTURES</td>
<td></td>
</tr>
<tr>
<td>ONE, INC.</td>
<td>$37M</td>
</tr>
<tr>
<td>MassMutual VENTURES</td>
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<tr>
<td>AXA Strategic Ventures</td>
<td></td>
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<tr>
<td>policygenius</td>
<td>$21M</td>
</tr>
<tr>
<td>MassMutual VENTURES</td>
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<tr>
<td>Transamerica</td>
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<td>AXA Strategic Ventures</td>
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<tr>
<td>Slice</td>
<td>$4M</td>
</tr>
<tr>
<td>XL CATLIN</td>
<td></td>
</tr>
<tr>
<td>Munich RE</td>
<td></td>
</tr>
</tbody>
</table>

Note: Total funding. Source: Aon.
Thank you!

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