Overview of US P&C and Marine Market

Marine Insurance Issues Seminar
American Institute of Marine Underwriters, New York, NY
May 7, 2019

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What is the Insurance Information Institute?

Improving public understanding of insurance...

...what it does and how it works
Renewed 2019 Focus

While some priorities have shifted over the past year, resilience has become a central theme across numerous issue areas.

- Inform
  - High: Insurance As Economic Capital
  - Low: Life, Political Risk

- Own
  - High: Nat Cat Resilience
  - Low: Cyber Risk, Auto

- Manage
  - High: Home/Rental
  - Low: Terror, Fraud

- Elevate
  - High: InsurTech
  - Low: Industry Talent

Audiences
- B2B
- B2C
- B2G
- Strategic Initiative

2019 Adjustment:
- Political Risk
- Auto
- Economic Capital
- Cyber
- Terror
Data transformed to show the power of resilience.
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
Financial Results Q4 2018
Policyholder Surplus By Quarter

**Amount of Surplus**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Amount of Surplus ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:Q4</td>
<td>400</td>
</tr>
<tr>
<td>10:Q4</td>
<td>500</td>
</tr>
<tr>
<td>11:Q4</td>
<td>600</td>
</tr>
<tr>
<td>12:Q4</td>
<td>700</td>
</tr>
<tr>
<td>13:Q4</td>
<td>800</td>
</tr>
<tr>
<td>14:Q4</td>
<td>900</td>
</tr>
<tr>
<td>15:Q4</td>
<td>782</td>
</tr>
<tr>
<td>16:Q4</td>
<td>742</td>
</tr>
<tr>
<td>17:Q4</td>
<td>800</td>
</tr>
<tr>
<td>18:Q4</td>
<td>850</td>
</tr>
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</table>

**Change from Prior Quarter**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Change from Prior Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:Q4</td>
<td>3%</td>
</tr>
<tr>
<td>16:Q1</td>
<td>-5%</td>
</tr>
<tr>
<td>16:Q2</td>
<td>-4%</td>
</tr>
<tr>
<td>16:Q3</td>
<td>-2%</td>
</tr>
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<td>16:Q4</td>
<td>0%</td>
</tr>
<tr>
<td>17:Q1</td>
<td>2%</td>
</tr>
<tr>
<td>17:Q2</td>
<td>3%</td>
</tr>
<tr>
<td>17:Q3</td>
<td>4%</td>
</tr>
<tr>
<td>17:Q4</td>
<td>5%</td>
</tr>
<tr>
<td>18:Q1</td>
<td>6%</td>
</tr>
<tr>
<td>18:Q2</td>
<td>7%</td>
</tr>
<tr>
<td>18:Q3</td>
<td>8%</td>
</tr>
<tr>
<td>18:Q4</td>
<td>9%</td>
</tr>
</tbody>
</table>

Tax Law Increased Surplus at Year-End 2017 and Makes Surplus Growth a Bit More Volatile. $0.83 Premium per $1 Surplus.

Sources: ISO, A.M. Best.
Direct Premium Growth, Annual Change

Direct Premiums Continue to Track Economic Growth

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 fourth 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.

Catastrophes Let Up After Awful ‘17; Auto Turned a Corner.
P/C Insurance Industry Combined Ratio, 2000-2018*

2018 – Third worst year for U.S. Insured Catastrophe Losses. Average Insured Loss per Year for 1980-2018 is $19.3 B.

*2018: Estimate, subject to change. 2010s is average of 2010 to 2018.
Key sources of P/C insurer profits, 2008-2018

Data are before taxes and exclude extraordinary items.
Source: NAIC data, sourced from S&P Global Market Intelligence.
P/C Insurer Portfolio Yields

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.
Marine Results
Underwriting is Historically Volatile; Has the Market Turned?
U.S. Ocean Marine Direct Written Premiums

Ocean Marine Premium Volume Fell During the Global Financial Crisis.

Source: NAIC data, sourced from S&P Global Market Intelligence.
Note: U.S. and territories
Has the Market Bottomed Out?

(U.S. Ocean Marine DWP as % of GDP)

Economy Grows Faster Than Premium – Sign of Soft Market (30% Decline Since 2006 Peak)

Sources: Federal Reserve Economic Data; NAIC data, sourced from S&P Global Market Intelligence
Total losses by type of vessel 2008 vs. 2017

While Exposures Grow, the Number of Vessels Lost Has Declined.

Source: Lloyd’s List Intelligence Casualty Statistics; Allianz Global Safety & Shipping Review 2018
Major Energy Losses

<table>
<thead>
<tr>
<th>Year of Loss</th>
<th>Type</th>
<th>Cause</th>
<th>Region</th>
<th>PDI US$</th>
<th>OEE US$</th>
<th>BII US$</th>
<th>Total US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>MOPU</td>
<td>Mechanical failure</td>
<td>Africa</td>
<td>820,000,000</td>
<td>0</td>
<td>900,000,000</td>
<td>1,720,000,000</td>
</tr>
<tr>
<td>2018</td>
<td>Rig</td>
<td>Mechanical failure</td>
<td>North America</td>
<td>83,000,000</td>
<td>0</td>
<td>65,000,000</td>
<td>178,000,000</td>
</tr>
<tr>
<td>2016</td>
<td>Pipeline</td>
<td>Anchor/jacking/travel</td>
<td>Africa</td>
<td>100,000,000</td>
<td>0</td>
<td>100,000,000</td>
<td>200,000,000</td>
</tr>
<tr>
<td>2018</td>
<td>Platform</td>
<td>Fire + explosion/VCE</td>
<td>Latin America</td>
<td>95,367,316</td>
<td>0</td>
<td>0</td>
<td>95,367,316</td>
</tr>
<tr>
<td>2018</td>
<td>Well</td>
<td>Blowout + fire</td>
<td>Australia</td>
<td>70,000,000</td>
<td>0</td>
<td>70,000,000</td>
<td>70,000,000</td>
</tr>
<tr>
<td>2016</td>
<td>Pipeline</td>
<td>Terrorism</td>
<td>Africa</td>
<td>65,000,000</td>
<td>0</td>
<td>0</td>
<td>65,000,000</td>
</tr>
<tr>
<td>2018</td>
<td>Platform</td>
<td>Piling operations</td>
<td>Asia</td>
<td>51,000,000</td>
<td>0</td>
<td>0</td>
<td>51,000,000</td>
</tr>
<tr>
<td>2016</td>
<td>SSIGS</td>
<td>Anchor/jacking/travel</td>
<td>Middle East</td>
<td>50,000,000</td>
<td>0</td>
<td>0</td>
<td>50,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Well</td>
<td>Collapse</td>
<td>Europe</td>
<td>42,000,000</td>
<td>151,757,600</td>
<td>35,453,000</td>
<td>229,188,600</td>
</tr>
<tr>
<td>2017</td>
<td>MOPU</td>
<td>Faulty work/ops error</td>
<td>Africa</td>
<td>135,000,000</td>
<td>0</td>
<td>0</td>
<td>135,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>MOPU</td>
<td>Faulty work/ops error</td>
<td>Asia Pacific</td>
<td>132,000,000</td>
<td>0</td>
<td>0</td>
<td>132,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Vessal</td>
<td>Pipelaying/trenching</td>
<td>Latin America</td>
<td>128,500,000</td>
<td>0</td>
<td>0</td>
<td>128,500,000</td>
</tr>
<tr>
<td>2017</td>
<td>Well</td>
<td>Unknown</td>
<td>Europe</td>
<td>72,000,000</td>
<td>0</td>
<td>24,000,000</td>
<td>96,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Well</td>
<td>Blowout + fire</td>
<td>Europe</td>
<td>0</td>
<td>80,000,000</td>
<td>0</td>
<td>80,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Pipeline</td>
<td>Impact</td>
<td>Africa</td>
<td>70,500,000</td>
<td>0</td>
<td>0</td>
<td>70,500,000</td>
</tr>
<tr>
<td>2017</td>
<td>Pipeline</td>
<td>Corrosion</td>
<td>North America</td>
<td>60,000,000</td>
<td>0</td>
<td>0</td>
<td>60,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Platform</td>
<td>Fire no explosion</td>
<td>Africa</td>
<td>52,000,000</td>
<td>0</td>
<td>0</td>
<td>52,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>Well</td>
<td>Blowout + fire</td>
<td>Africa</td>
<td>0</td>
<td>50,000,000</td>
<td>0</td>
<td>50,000,000</td>
</tr>
<tr>
<td>2018</td>
<td>Plant</td>
<td>Earthquake</td>
<td>Asia Pacific</td>
<td>270,000,000</td>
<td>0</td>
<td>0</td>
<td>270,000,000</td>
</tr>
<tr>
<td>2018</td>
<td>Pipeline</td>
<td>Heavy weather</td>
<td>North America</td>
<td>51,000,000</td>
<td>0</td>
<td>0</td>
<td>51,000,000</td>
</tr>
</tbody>
</table>

Heaviest Upstream 2018 Losses Were Outside USA.

U.S. Marine Results, 2007-2017

Combined Ratio After Dividends

Results Deteriorated in 2018.

Source: Ocean and Inland Marine combined. A.M. Best's Aggregates and Averages, 2017
Economic Factors
Global Premium Growth, 2017

- Life Sector’s Growth Cooled
- P/C Looking Good
- Watch China, India
Economies by size of merchandise trade, 2017

Merchandise exports of WTO members totaled US$ 17.43 trillion in 2017

Source: World Trade Statistical Review 2018
World Trade and the Economy

Source: Clarksons Research / IMF, January 2019
Global trade growth has slowed sharply.

World Trade Volume Growth* 2012-2020P

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>7.3%</td>
</tr>
<tr>
<td>2012</td>
<td>3.1%</td>
</tr>
<tr>
<td>2013</td>
<td>3.6%</td>
</tr>
<tr>
<td>2014</td>
<td>3.9%</td>
</tr>
<tr>
<td>2015</td>
<td>2.8%</td>
</tr>
<tr>
<td>2016</td>
<td>2.2%</td>
</tr>
<tr>
<td>2017</td>
<td>5.4%</td>
</tr>
<tr>
<td>2018</td>
<td>3.8%</td>
</tr>
<tr>
<td>2019P</td>
<td>3.4%</td>
</tr>
<tr>
<td>2020P</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Sources: International Monetary Fund, World Economic Outlook, April 2019 Statistical Appendix
* Goods and services
Total value of recreational boats sold in the U.S.

($ Millions in Sales)

Global Risk

Concerns Shift Considerably Over Short Spans of Time.


<table>
<thead>
<tr>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water crises</td>
<td>Failure of climate-change mitigation and adaptation</td>
<td>Weapons of mass destruction</td>
<td>Weapons of mass destruction</td>
<td>Weapons of mass destruction</td>
</tr>
<tr>
<td>Rapid and massive spread of infectious diseases</td>
<td>Weapons of mass destruction</td>
<td>Extreme weather events</td>
<td>Extreme weather events</td>
<td>Extreme weather events</td>
</tr>
<tr>
<td>Weapons of mass destruction</td>
<td>Water crises</td>
<td>Water crises</td>
<td>Natural disasters</td>
<td>Water crises</td>
</tr>
<tr>
<td>Interstate conflict with regional consequences</td>
<td>Large-scale involuntary migration</td>
<td>Major natural disasters</td>
<td>Failure of climate-change mitigation and adaptation</td>
<td>Natural disasters</td>
</tr>
<tr>
<td>Failure of climate-change mitigation and adaptation</td>
<td>Severe energy price shock</td>
<td>Failure of climate-change mitigation and adaptation</td>
<td>Water crises</td>
<td></td>
</tr>
</tbody>
</table>

Marine Underwriters Have a Lot to Worry About.

Piracy 2019 (so far)

Gulf of Guinea remains a hotspot: 22 kidnappings in Q1

The Risk Report

The Latest in the World of Property/Casualty

The Economy

- How Long Can It Last?
- The Jobs Engine Powers Along
- Trade Wars

The World of Insurance

- Mondelez/NotPetya: It’s War!
- Rating Variables
- Product Liability
  - Roundup - $158M
  - J&J talc - $142M
- Burger King’s $9,026 claim

Marine Issues

- Lloyd’s: 10th Decile
- Psst . . . Rates are Rising
Wind Power
New U.S. electricity generation by source

Coal is Out. Solar, Gas and Wind Are In.

Upside of wind energy

Wind energy provides over 20% of the electricity produced in 6 states.

The wind industry is present in 69% of all U.S. Congressional districts.

Wind energy avoided 201 million metric tons of CO2 emissions in 2018.

The U.S. wind industry has invested over $142 billion in new wind projects over the last decade.

Wind energy generated 6.5% of the nation’s electricity in 2018, enough to power 26 million homes.

Source: American Wind Energy Association, all figures are as of 2018
Growth of Wind Power Capacity in the U.S.

By 2050 total wind power capacity across 48 states will be 404.25 gigawatts, an increase of 180.15 gigawatts from 2030.

Source: Energy.gov
Offshore wind farms pros and cons

**Pros**
- Offshore wind speeds are faster and steadier than on land
- Meet energy needs of high-density coastal areas
- Renewable energy with no pollution
- Domestic energy source
- Jobs

**Cons**
- Expensive and difficult to build and maintain
- Effects on marine animals and birds are not fully understood
- May be unpopular with residents

Source: American Geosciences Institute
Key risks faced by wind farms

- Natural disasters
- Underperformance aka “wind drought”
- Mechanical issues
- Cable issues
- Start-up delays
- Lightning damage
- Prototype technology
- Substations and power delivery

Source: Willis Towers Watson, WindPower
Thank You!