Trends and Topics in the Property/Casualty Industry

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The P/C Insurance Industry:  
Financial Update & Outlook

Higher Cats Create Slight U/W Loss
Rising Rates May Help A Little

Sources: A.M. Best; ISO, a Verisk Analytics company; Insurance Information Institute.
P/C Insurer Portfolio Yields, 2002-2016
(Yield on Invested Assets)

P/C Carrier Yields Have Been Falling for Over a Decade, Reflecting the Long Downtrend in Prevailing Interest Rates.

Sources: NAIC data, sourced from S&P Global Market Intelligence; ISO, a Verisk Analytics company; Insurance Information Institute.
Virtually all of the 53 forecasts in the Blue Chip survey expect continual increases in the yield of long-term bonds in 2017-18.

Sources: Blue Chip Economic Indicators (2/17); Insurance Information Institute

Falling yields means less investment income, putting upward pressure on rates.

As long as new money rates are below the rates of maturing bonds, the portfolio yield will continue to sink.

p: Preliminary
Sources: NCCI, ISO, a Verisk Analytics company, U.S. Treasury (5-year note as proxy for new money yield); Insurance Information Institute.
Underwriting Performance

Except for the three “hard markets” in this 45-year period, Net Written Premiums track Nominal GDP—not year by year but fairly well.

Net Written Premium Growth (All P/C Lines): First Three Quarters, 2006-2016

Total Net Written Premiums for the first nine months rose more slowly in 2016 than in any year since 2010.

Commercial & Personal Lines NPW Growth: 1996-2016E

Commercial Lines is Prone to Much More Cyclical Volatility Than Personal Lines.

Note: Data include state funds beginning in 1998. 16E is first three quarters.
Sources: A.M. Best; Insurance Information Institute.
P/C Insurance Industry Combined Ratio, 2001-2016*

*Excludes Mortgage & Financial Guaranty insurers 2008-2014. 2016 is first nine months


Sources: A.M. Best; ISO, a Verisk Analytics company; 2010-2015E is from A.M. Best P&C Review and Preview, February 16, 2016.
U.S. Insured Catastrophe Losses, 1989-2016

($ billions, 2016 dollars)

2013/14/15 Were Welcome Respites from 2011/12, Which Were Among the Costliest Years for Insured Disaster Losses in U.S. History. Longer-term Trend is for More – Not Fewer – Costly Events.

*2016 estimate is subject to change

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, a Verisk Analytics business; Insurance Information Institute.
# P/C Direct Written Premium by Line

(Billions of Dollars)

<table>
<thead>
<tr>
<th>LOB</th>
<th>2015</th>
<th>2016</th>
<th>% Chg From Year Earlier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Auto Liab</td>
<td>89.5</td>
<td>95.8</td>
<td>7.0%</td>
</tr>
<tr>
<td>Homeowners</td>
<td>70.5</td>
<td>72.4</td>
<td>2.6%</td>
</tr>
<tr>
<td>Auto PhysDam*</td>
<td>65.8</td>
<td>70.9</td>
<td>7.8%</td>
</tr>
<tr>
<td>GL (incl Products)</td>
<td>47.8</td>
<td>49.6</td>
<td>3.6%</td>
</tr>
<tr>
<td>WC</td>
<td>42.5</td>
<td>43.6</td>
<td>2.4%</td>
</tr>
<tr>
<td>Fire &amp; Allied Lines</td>
<td>30.7</td>
<td>30.1</td>
<td>-2.2%</td>
</tr>
<tr>
<td>CMP</td>
<td>29.9</td>
<td>30.1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Comm Auto Liab</td>
<td>18.0</td>
<td>19.0</td>
<td>5.2%</td>
</tr>
<tr>
<td>Other</td>
<td>47.5</td>
<td>50.3</td>
<td>5.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>442.4</strong></td>
<td><strong>461.7</strong></td>
<td><strong>4.4%</strong></td>
</tr>
</tbody>
</table>

* Personal (~90+) and Commercial (~10%) combined.

Data through Q3.

Sources: NAIC Data, sourced from S&P Global Market Intelligence, Insurance Information Institute.

Commercial/Personal Premiums Are Rising...
# P/C Direct Incurred LR by Line

## (Billions of Dollars)

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<th>2016</th>
<th>Pt Chg From Year Earlier</th>
</tr>
</thead>
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<tr>
<td>Personal Auto Liab</td>
<td>69%</td>
<td>73%</td>
<td>4</td>
</tr>
<tr>
<td>Homeowners</td>
<td>53%</td>
<td>55%</td>
<td>2</td>
</tr>
<tr>
<td>Auto PhysDam*</td>
<td>63%</td>
<td>68%</td>
<td>5</td>
</tr>
<tr>
<td>GL (incl Products)</td>
<td>52%</td>
<td>53%</td>
<td>1</td>
</tr>
<tr>
<td>WC</td>
<td>58%</td>
<td>55%</td>
<td>(3)</td>
</tr>
<tr>
<td>Fire &amp; Allied Lines</td>
<td>57%</td>
<td>64%</td>
<td>7</td>
</tr>
<tr>
<td>CMP</td>
<td>47%</td>
<td>50%</td>
<td>3</td>
</tr>
<tr>
<td>Comm Auto Liab</td>
<td>65%</td>
<td>67%</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>42%</td>
<td>45%</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57%</strong></td>
<td><strong>60%</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

* Personal (~90+) and Commercial (~10%) combined.

Data through Q3.

Sources: NAIC Data, sourced from S&P Global Market Intelligence, Insurance Information Institute.
Personal Auto
Rising Frequency, Severity Pinching the Largest P/C Line
Loss Ratios Have Been Rising for a Decade. 2015 Return on Net Worth is Likely Close to Zero or Negative.

Source: National Association of Insurance Commissioners data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Rising Personal Auto Costs

Auto Insurance

Increase in Loss Costs, 2014:Q3–2016:Q3

- Bodily Injury: 11.7%
- Property Damage: 15.1%
- Personal Injury Protection: 15.1%
- Collision: 13.6%
- Comprehensive: 21.0%

From 2014 to 2016, the cost of accidents has risen dramatically. By contrast, consumer prices overall rose 1.7 percent during 2014 and 2015.

Source: Fast Track Monitoring System.
Claim Trends by Coverage

Focus on Collision
Collision Claims: Frequency Trending Higher in 2010s

For a Long Time, Claim Frequency Was Falling, But Since 2010 This Trend Seems to Have Reversed.

*Four Quarters Ending in September.
Source: ISO, a Verisk Analytics company; Insurance Information Institute.
Collision Claims: Severity Trending Higher in 2009-2016

The Great Recession and High Fuel Prices Helped to Temper Claim Severity, But These forces Have Clearly Reversed, Consistent with Experience from Past Recoveries.

*Four Quarters Ended in September.
Source: ISO, a Verisk Analytics company; Insurance Information Institute.
What’s Driving These Trends?

Frequency; Severity; Distraction?
America is Driving More Again: 2000-2016

Percent Change, Miles Driven*

Tremendous Growth In Miles Driven. The More People Drive, The More Frequently They Get Into Accidents.

*Moving 12-month total vs. prior year. Sources: Federal Highway Administration; Insurance Information Institute.
More Miles Driven => More Collisions, 2006-2016

The More Miles People Drive, the More Likely They are to Get in an Accident, Helping Drive Claim Frequency Higher.

Sources: Federal Highway Administration; Rolling four-quarter average frequency from ISO, a Verisk Analytics company; Insurance Institute for Highway Safety; Insurance Information Institute.
Why Are People Driving More Miles?
Cheap Gas?

Billions of Miles Driven in Prior Year

Sources:
Federal Highway Administration; Energy Information Administration (All Grades All Formulations Retail Gas Prices); Insurance Institute for Highway Safety; Insurance Information Institute.

Gas Prices Don’t Seem Correlated With Miles Driven.
Why Are People Driving More Miles? Jobs?

People Drive to and from Work and Drive to Entertainment. Out of Work, They Curtail Their Movement.

Sources: Federal Highway Administration; Seasonally Adjusted Employed from Bureau of Labor Statistics via FRED; Insurance Institute for Highway Safety; Insurance Information Institute.

When People are Out of Work, They Drive Less. When They Get Jobs, They Drive to Work, Helping Drive Claim Frequency Higher.

Sources: Seasonally Adjusted Employed from Bureau of Labor Statistics; Rolling four-quarter average frequency from ISO, a Verisk Analytics company; Insurance Information Institute.
Comparing Gas Prices, Employment on Collision Frequency Through 2015

Gas Price vs. Collision Frequency

Number Employed vs. Collision Frequency

Sources: Seasonally Adjusted Employed from Bureau of Labor Statistics; Energy Information Administration; Rolling Four-Qtr Avg. Frequency from Insurance Services Office; Insurance Information Institute.
Severity: Driving Fatalities are Rising

Annual Change in Motor Vehicle Deaths

Driving Has Been Getting Safer for Decades, But Recent Trend is Discouraging—38,300 Deaths in 2015.

Sources: National Safety Council, Insurance Information Institute.
Does Spending on Vehicles Affect Claim Severity?

Annual Change, 2005 through 2016

As the Economy Has Gotten Better, People Are Spending More on Vehicles – When Those Cars Wreck, Severity Increases.

* Claim Frequency Through Third Quarter.
Fixing a Bumper

. . . On an Entry-Level Luxury Car (~$35K)

2014 Cost vs. 2016 Cost

<table>
<thead>
<tr>
<th>Parts</th>
<th>2014</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grille: Distance Sensor</td>
<td>$0</td>
<td>$2,818</td>
</tr>
<tr>
<td>Headlamp Assembly</td>
<td>394</td>
<td>918</td>
</tr>
<tr>
<td>Mechanical Labor</td>
<td>0</td>
<td>108</td>
</tr>
</tbody>
</table>

What Has Changed?

- Parts: 130% Higher
- Labor: 18% Higher
- Total cost: $1,705 higher

2016 vehicle has LED headlights and adaptive cruise control. SOURCE: Liberty Mutual Insurance.
What About Distractions?  
It’s A Problem. Is It Growing?

What We Do Behind The Wheel

<table>
<thead>
<tr>
<th>Activity</th>
<th>2009</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk on Phone</td>
<td>65%</td>
<td>51%</td>
</tr>
<tr>
<td>Text</td>
<td>31%</td>
<td>36%</td>
</tr>
<tr>
<td>Surf the Net</td>
<td>13%</td>
<td>29%</td>
</tr>
</tbody>
</table>

But Impact Is Not Clear

Percentage of Crashes Involving Distraction

- **Total Crash**
  - 2010: [Graph Data]
  - 2011: [Graph Data]
  - 2012: [Graph Data]
  - 2013: [Graph Data]
  - 2014: [Graph Data]
- **Fatal Crash**
  - 2010: [Graph Data]
  - 2011: [Graph Data]
  - 2012: [Graph Data]
  - 2013: [Graph Data]
  - 2014: [Graph Data]
- **Injury Crash**
  - 2010: [Graph Data]
  - 2011: [Graph Data]
  - 2012: [Graph Data]
  - 2013: [Graph Data]
  - 2014: [Graph Data]
- **PDO* Crash**
  - 2010: [Graph Data]
  - 2011: [Graph Data]
  - 2012: [Graph Data]
  - 2013: [Graph Data]
  - 2014: [Graph Data]

* Property Damage Only.  
SOURCES: State Farm, National Highway Transportation Safety Administration (distraction.gov)
Loss Ratios Have Been Rising for a Decade. 2015 Return on Net Worth is Likely Close to Zero or Negative.

Source: National Association of Insurance Commissioners data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Soft Market: 2006 to 2008

Rate Decreases from 10% to 30% for Three Years

Insurers Have Struggled to Estimate Loss Reserves.

Source: National Association of Insurance Commissioners data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
Commercial Auto Rates Since Late 2008

(Rate Index: December 2008 = 100)


Sources: MarketScout, Insurance Information Institute.
Vehicles in Crashes Per 100 Registered Vehicles (Government Data)

(% Change From Year Earlier)

- Property Damage Only (PDO) claims involving passenger vehicles and large trucks, respectively. Large trucks: GVW > 10,000 lbs.


- Commercial Auto Claim Frequency Began Growing Before Personal Auto.

- Fast Track Data Lag Government Data.

- Signs Frequency May Have Peaked
Trucking Trends

△ Driver Shortage
  • Laid-off Drivers Aren’t Returning
  • Older, Inexperienced Drivers Entering Force
  • High Turnover Exacerbates Problem

△ ‘Super Lawyers’
  • “Insured Indifference to Safety”
  • Lots of Data
  • Cases Settle Faster
Disruption
Challenges to the Value Chain
The (Re)Insurance Value Chain

Where Could Disruption Lie?

Protecting People & Organizations

Most Links in the Value Chain Have the Potential to Be Disrupted in Next 10 Years.

- Brains + Bank Account
- Create Policy/Treaty
- Market Policy/Treaty
- Write Risk
- Price Risk
- Perform Loss Control
- Settle Claims
- Improve World
Insurance Technology Financing – Change Is Coming

Investment In Insurance Tech Is Rising. Number of Deals Set A Record Last Year.

SOURCES: CB Insights, Insurance Information Institute.
Collateralized Reinsurance and Catastrophe Bonds Currently Dominate the Alternative Capital Market.

Source: Aon Benfield Analytics; Insurance Information Institute.
Pricing Disruptor: The Fragmented Risk
Loss Control Disruptor
The Internet of Things

Telematics Today

Telematics Tomorrow

[Image of a car with a wireless signal, and a Fitbit watch with a Fitbit logo, and an Apple iWatch with an iWatch logo]
Claims Disruptor
Artificial Intelligence + Behavioral Economics

"IT'S NOT OUR MONEY!"

Subject to Giveback 40%
Expenses 20%
Reinsurance 20%
'Rainy Day Fund' 20%
Summary

- The industry has posted a modest underwriting loss through Q3.
- Interest rates may be climbing a bit, but investment income will continue to lag prior years.
- Personal auto costs are rising (both frequency and severity), linked closely to the improving economy.
- Commercial auto results continue to vex the industry.
- Disruption provides opportunities and challenges throughout the value chain.
Thank you for your time and your attention!

Read our auto White Paper on Rising Personal Auto Costs at www.iii.org