CHANGING TRENDS IN AUTO INSURANCE

James Lynch, Chief Actuary
Insurance Information Institute
WHO IS THE I.I.I.? 

Improving public understanding of insurance...

...what it does and how it works
INSURANCE: BY THE NUMBERS

2.8 million
People in the U.S. employed, in a wide variety of careers, from IT experts, to human resource administrators to public relations managers to financial analysts (and agents and claims adjusters)

$5.8 trillion
Assets under management at year-end 2016, including $1.5 trillion for the property/casualty sector and $3.7 trillion for the life sector

$508 billion
Contributed to the U.S. gross domestic product in 2016, roughly 2.7% of the whole

$40.0 billion
Federal and foreign income taxes paid in 2016, plus U.S. premium taxes paid

Source: https://www.bls.gov/cps/cpsaat18.htm (Employment)
INSURANCE: BY THE NUMBERS

(Value Added As % of GDP)

- Motor Vehicle/Parts Retail: 1.1%
- Other services (ex Govt)*: 2.3%
- Insurance: 2.7%
- Banks and Credit Intermediaries: 2.9%

* Includes Automotive Repair and Maintenance.

Sources: US Bureau of Economic Analysis; Insurance Information Institute.
FINANCIAL FIRST RESPONDERS

Insurers annually pay over a trillion dollars in claims to rebuild lives, property and businesses.

In 2016 alone, the industry paid

- $386.4 billion P/C incurred claims (L + LAE)
- 554.7 Life/Annuity benefits
- 560.9 Health Insurance benefits

= $1.502 trillion

• This is equivalent to $125 billion per month.
TOUGH TIMES IN AUTO

- Source: National Association of Insurance Commissioners data, sourced from S&P Global Market Intelligence; Insurance Information Institute.
INCREASING COSTS

Auto Insurance
Increase in Claim Costs, 2015:Q1–2017:Q1

- Bodily Injury: 15.3%
- Property Damage: 15.0%
- Personal Injury Protection: 14.1%
- Collision: 13.2%
- Comprehensive: 22.5%

By contrast, consumer prices overall rose 3.3 percent during the same period.

SOURCE: Fast Track Monitoring System.
DRIVING FATALITIES ARE RISING

Annual Change in Motor Vehicle Deaths

- Seatbelt Use Rose to 62% of Drivers, From 49% in '90
- Big Drop-off Due to the Great Recession

Sources: National Safety Council, Insurance Information Institute.
WHAT IS HAPPENING?

Better Economy = More Drivers = More Accidents

Economic well-being

Distracted driving

18 Percent of Injury Crashes

Speed Still Kills

Faster driving

Expensive auto parts

Expensive devices can be expensive

Why rates go up

Legalized marijuana

Driving While High

Source: Insurance Information Institute research.
THE DRIVER WILL GO AWAY . . .

. . . SOMEDAY
# STEP 1: SELF-DRIVING

**In Theory**

<table>
<thead>
<tr>
<th>Crashes Avoided Per Year</th>
<th>All</th>
<th>Injury</th>
<th>Fatal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Collision Warning</td>
<td>1,165,000</td>
<td>66,000</td>
<td>879</td>
</tr>
<tr>
<td>Lane Departure Warning</td>
<td>179,000</td>
<td>37,000</td>
<td>7,529</td>
</tr>
<tr>
<td>Side Assist View (Blind Spots)</td>
<td>395,000</td>
<td>20,000</td>
<td>393</td>
</tr>
<tr>
<td>Adaptive Headlights</td>
<td>142,000</td>
<td>29,000</td>
<td>2,484</td>
</tr>
<tr>
<td>Total Unique Crashes</td>
<td>1,866,000</td>
<td>149,000</td>
<td>10,238</td>
</tr>
</tbody>
</table>

**In Practice**

- Forward Collision Warning Working
- Adaptive Headlights Working
- Others: Benefits ‘Less Clear’

- 6% of Injuries
- 30% of Fatalities
STEP 2: DRIVERLESS

Delphi prototype “Roadrunner”

SF to NYC in Nine Days (4/2015)

3,400 Miles – All but 50 Autonomous

Issues: ‘Unmarked Lanes, Heavy Roadworks,’ When Sun Was Low in Sky

**HOW SOON?**

**Percent of Vehicle Fleet**

- 2020s: 1%
- 2030s: 2%
- 2040s: 20%
- 2050s: 60%

**Percent of Miles Driven**

- 2020s: 1%
- 2030s: 4%
- 2040s: 30%
- 2050s: 80%

**SOURCE:** Autonomous Vehicle Implementation Predictions, Victoria Transport Policy Institute, 2015.
ISSUE 1: TECH

New vehicle series with forward collision warning
By model year

Source: Highway Loss Data Institute, Insurance Institute for Highway Safety.
Calendar year features reach 95% of registered vehicle fleet with and without mandate

Source: Highway Loss Data Institute, Insurance Institute for Highway Safety.
ISSUE 1: TECH

Average Vehicle Age (Years)

Would You Be Willing to Ride in a Driverless Car?

- Yes: 40%
- No: 59%
- Don’t Know: 1%


Do You Consider Yourself a Better-Than-Average Driver?

- Much Better Than Avg.: 34%
- Better Than Avg.: 42%
- Average: 23%
- Worse Than Average: 1%
- Don’t Know: 1%

ISSUE 3: HOW DO YOU GET THERE?
ISSUE 3: FUMBLED HANDOFFS

Anatomy of an AV Claim

What Happened?

- May 7, 2016 – Williston, FL
- Tesla Model S
  - 74 mph In A 65 Zone
  - Engaged Technology “Autopilot”
    - Traffic-Aware Cruise Control
    - Autosteer (Lane-keeping)
    - Car Had Auto Emergency Braking
- Truck Turned in Front of Car
- Autopilot Warned Driver 7 Times

SOURCES: National Transportation Safety Board; Florida Highway Patrol; New York Times.
SAFETY: AN OLD STORY

**Accident Rate**

- Property Damage: 7.92, 4.22, 3.55
- Bodily Injury: 2.61, 1.23, 0.95

- **Down 63%**!

**Claim Size**

- Property Damage: 183, 1,288, 1,143
- Bodily Injury: 15,443, 7,553, 3,231

- **UP 1,251%**
- **UP 1,666%!**

**Sources:** Insurance Institute for Highway Safety, Insurance Services Office, Insurance Information Institute.
### IMPACT ON INSURANCE

<table>
<thead>
<tr>
<th>Type of Coverage</th>
<th>Examples</th>
<th>Accident Rate</th>
<th>Claim Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage</td>
<td>PD, Collision</td>
<td>Decrease</td>
<td>Increase</td>
</tr>
<tr>
<td>Injury</td>
<td>BI, PIP, MedPay</td>
<td>Decrease</td>
<td>Unclear</td>
</tr>
<tr>
<td>Uninsured</td>
<td>UM/UIM</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Comprehensive</td>
<td>None</td>
<td>Increase</td>
</tr>
</tbody>
</table>

Coverages on 21% of premium will be unaffected for decades.

Autonomous vehicles will have different impacts on different coverages and will not all happen at once.

![Insurance Impact Chart]

- Damage: 44%
- Injury: 35%
- UM: 8%
- Miscellaneous: 13%
TWO FINAL ISSUES

• Shift to product liability
• Will people still own cars?
SUMMARY

• Radical Change is Coming.
• It Takes a Long Time for Technology to Penetrate the Marketplace.
• Technology Has Been Making Cars Safer for Decades.
• There Will Still Be Accidents.