A presentation by
Richard Gibson, MAAA, FCAS
Senior Property and Casualty Fellow
American Academy of Actuaries

National Council of Insurance Legislators
Property and Casualty Insurance Committee

July 12, 2019—Newport Beach, California

Copyright 2019

AMERICAN ACADEMY *of* ACTUARIES
Objective. Independent. Effective.™

FACTORS INFLUENCING AUTO INSURANCE RATES

The Academy

□ The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

AMERICAN ACADEMY *of* ACTUARIES

Objective. Independent. Effective.™

Auto Insurance Rates—Overview

- Rates are a function of costs in the insurance system

- Data/information is the basis for measuring the cost components

- Estimating relative risk of loss across a classification structure is important to a well-functioning insurance system

3

Auto Insurance Rates—Claim Costs

- Auto insurance system pays for:
  - Personal injuries, medical costs, lost wages
  - Car damage repair, other property damage
  - Vehicle theft
  - Legal costs
  - Fraud

Auto Insurance Rates—Claim Costs

- Basic causes of loss (expense) in the insurance system:
  - Auto accidents resulting in personal injury
  - Auto accidents resulting in property damage
  - Weather-related claims, flood or hail for example
  - Theft of vehicles or vehicle components

5

Auto Insurance Rates—Linked to Costs

- Rates are a function of costs in the auto insurance system

- Rate analysis process considers claim cost data to test the rates currently in effect

- Typical data elements used
  - Claim frequency, claim severity, loss ratios

- Do rates need to change—increase or decrease?

6

Auto Insurance Rates—Linked to Costs

- Ratemaking is a prospective process

- Rates are being set for a future period using historical data

- Because rates must be set prior to knowing the actual incurred costs, this is by nature an estimation process

- Historical data is used to derive indications of how/if the rates need to change

7

Auto Insurance Rates—Process

- Two main elements to the rate-setting process
  - Determination of the overall, or average, indicated rate need
  - Distribution of the overall rate change throughout the classification structure
- Important distinction
  - With most rate changes, customers will see varying levels of rate change
  - Some increases, some decreases

Auto Insurance Rates—Process

- Predictive modeling in ratemaking
  - Can be used to help identify how the overall rate change is distributed throughout the classification structure
  - Can also be used to enhance the classification structure through consideration of additional data aimed at improving the measurement of relative risk of loss
  - Continues to evolve with new data sources and new analysis methods

Auto Insurance Rates—Regulatory

☐ Typical state insurance rating laws require that rates not be excessive, inadequate, or unfairly discriminatory

☐ Usually applies at the overall and class levels

☐ Prohibited rating characteristics as a matter of public policy

10

Auto Ins. Rates—Claim Cost Trends

- Fast Track Monitoring System
  - Compiled by ISO Data Inc., Independent Statistical Service Inc. (ISS), National Independent Statistical Service (NISS)
  - Provides claim frequency and claim severity data in time series format, nationally and by state, by coverage
  - Recent update shows data from 2014 to 2018
  - Large number of insurance companies submit data

Auto Ins. Rates—Claim Cost Trends

- Table below shows the national claim frequency and claim severity ranges from Fast Track (2014–2018)

	Annual Percentage Change Estimates		
	Frequency Range	**Severity Range**	**Combined Range**
Bodily Injury (BI)	-3% to +4%	+3% to +8%	+1% to +8%
Property Damage (PD)	-4% to +2%	+4% to +7%	+1% to +8%
Collision	-1% to +2%	0% to +6%	0% to +7%

- Will vary by state

- Short answer: Claim costs are increasing

12

AMERICAN ACADEMY *of* ACTUARIES

Objective. Independent. Effective.™

Auto Ins. Rates—Other Considerations

☐ Fraud

- ☐ North Dakota Insurance Commissioner, Jon Godfread, recently stated that on average North Dakotans pay an additional $950 per year in premiums, thanks to insurance fraud. (Fargo, N.D.; *Valley News Live*)

- ☐ The North Carolina Department of Insurance says up to 20% of what you pay for insurance is going to fraudulent claims. (Asheville, N.C.; *WLOS-TV*)

13

AMERICAN ACADEMY *of* ACTUARIES

Objective. Independent. Effective.™

Auto Ins. Rates—Other Considerations

- Fraud
  - Conservatively, fraud steals $80 billion a year across all lines of insurance. (Coalition Against Insurance Fraud estimate)
  - Property-casualty fraud is about 10% of insurance losses each year, amounting to $34 billion. (Insurance Information Institute)
  - Excess payments (due to fraud) represented 13%-17% of auto insurance payments. (Insurance Research Council)

14

Auto Ins. Rates—Other Considerations

- Distracted driving
  - Attention diverters: Talking or texting on cell phone, eating/drinking, talking to others in car, stereo, navigation system, etc.
  - 3,166 traffic deaths in 2017 attributed to distracted driving (NHTSA)

15

Auto Ins. Rates—Other Considerations

□ Distracted driving

  ◘ National Safety Council (NSC) estimates 25% of crashes involve cell phone use (21% talking, 4% texting)

  ◘ NSC also estimates that drivers using handheld or hands-free cell phones are four times as likely to crash

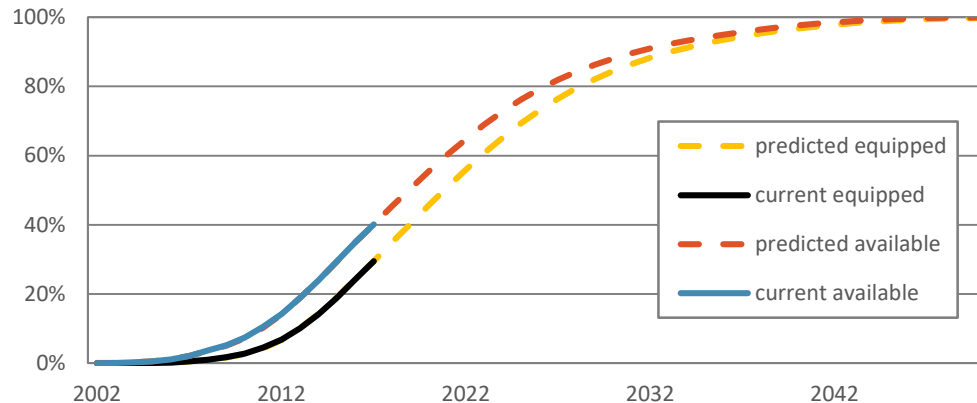# Auto Ins. Rates—Other Considerations

- Vehicle safety
  - Estimated registered vehicles by feature (Source: IIHS HLDI)
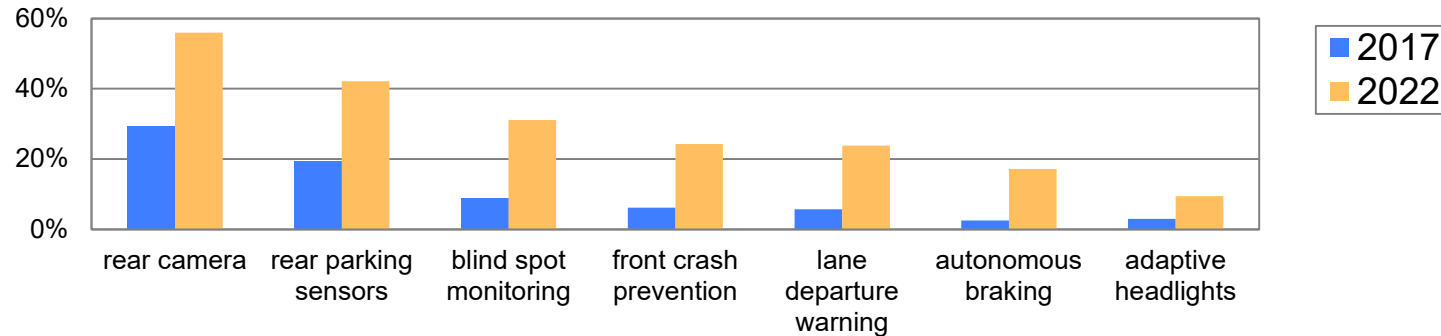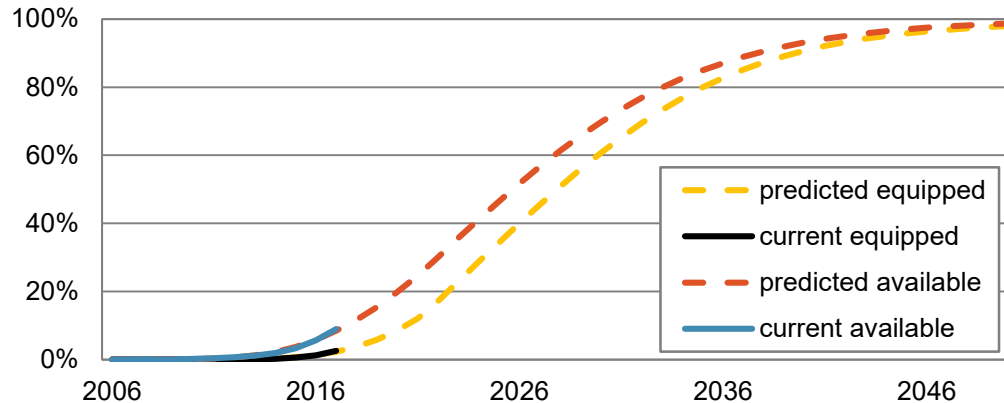
Auto Ins. Rates—Other Considerations

☐ Vehicle safety

   ▣ Rear camera estimated adoption (Source: IIHS HLDI)

Auto Ins. Rates—Other Considerations

□ Vehicle safety

    ▣ Autonomous emergency braking adoption (Source: IIHS HLDI)

Auto Ins. Rates—Other Considerations

- Vehicle safety
  - Expected claim frequency benefits are muted by the registered vehicle adoption rate
  - Claim severity under upward pressure due to higher cost of repairing safety technology after an accident

Auto Ins. Rates—Other Considerations

- Big Data
  - Garnering a large amount of attention across most industries
  - Helps improve the accuracy of insurance rates by developing new data to measure the relative risk of loss
  - Creates public policy challenge around regulating rates
  - Data quality and reliability of the new data sources, well tested?
  - Benefits for claim settlement, fraud detection?

NCOIL—Auto Insurance Rates

For more information, contact

Marc Rosenberg
Academy senior casualty policy analyst

rosenberg@actuary.org or 202-785-7865

AMERICAN ACADEMY *of* ACTUARIES

Objective. Independent. Effective.™