



# RATING AUTOMOBILE INSURANCE

Testimony before U.S. House of Representatives Financial Services  
Committee/Subcommittee on Oversight & Investigations

May 1, 2019



James Lynch  
Chief Actuary and Senior Vice President of Research and Education  
Insurance Information Institute  
[jamesl@iii.org](mailto:jamesl@iii.org) (212) 346-5533

First, I would like to take a moment to thank Rep. Green and the entire committee for giving me the opportunity to speak today.

My name is James Lynch. I am chief actuary and senior vice president of research and education at the Insurance Information Institute in New York. Founded in 1960, we are the trusted source of unique, data-driven insights to inform and empower consumers. We want people to have the information they need to make educated decisions, manage risk, and appreciate the essential value of insurance. Our membership includes eight of the 10 largest personal auto insurance writers in the United States. Unlike other sources, our sole focus is disseminating information; we neither lobby nor sell insurance. We provide objective, fact-based information about insurance – information that is rooted in economic and actuarial soundness.

I am a Fellow of the Casualty Actuarial Society, the leading property/casualty actuarial organization in the world, and I serve on the society's board of directors. I have more than a quarter-century of experience in property/casualty insurance and reinsurance and have held senior actuarial positions at QBE the Americas and White Mountains Reinsurance of America.

Today I would like to discuss how companies set rates for automobile insurance.

Because of court cases and federal legislation that stretch back decades, insurance companies are primarily regulated at the state level. Every insurance company must satisfy the laws and regulations of every state it operates in, plus the District of Columbia. So most large insurers, have 51 sets of laws to follow and 51 sets of regulators to satisfy.

Every state regulates what insurers can charge for personal auto insurance.

State laws ensure that rates:

- Aren't too high, because no state wants its consumers overcharged.
- Aren't too low, because if rates are too low, an insurance company might lack the funds to pay all the claims it has said it will pay.
- Are lower for drivers who are less likely to be in a crash and higher for drivers who are more likely to be in a crash.

The company can only offer a discount if it can show that the customer is less likely than the average customer to suffer an insured loss. It can only surcharge if it can show the customer is more likely than the average customer to suffer a loss.

Insurers can't change rates daily or weekly, the way a grocery store can change the price of a gallon of milk. They must notify the state, usually beforehand, what they intend to charge. In some states the Department of Insurance must explicitly approve changes in advance.

The result: Auto insurance is not priced according to the law of supply and demand. It is a cost-plus product. Insurers estimate what they will pay out in claims, then add in expenses and a reasonable profit (which generally works out to be less than what the average Fortune 500 company earns).

In addition to state regulators, auto insurers operate in an extremely competitive environment, and an important part of that competition is to develop the most perfect set of rates possible. Insurance companies develop sophisticated plans that consider the likelihood of being in a crash.

A company with an inferior rating plan quite accidentally charges some customers too much and some too little. None of the people they overcharge will stay with them long – there are better deals to be had. All the customers they undercharge will stay indefinitely, because they are getting a great deal. Unfortunately for the insurance company, it will lose money until it fixes its problem.

Insurers use teams of actuaries to figure out how to set rates – how much to charge the average risk; who deserves a discount; and who does not. They look for characteristics that successfully predict the accident rate. The most famous, perhaps, is driving record. Drivers who have avoided accidents for several years are less likely to be in an accident in the future. But driving record is not the only rating factor. The strongest by most accounts is location, which tells a lot about the number of vehicles per square mile. The more cars there are in an area, the more likely they are to crash into each other.

There are certain things it is important to know about rating variables:

- First: They work. They are effective at gauging the likelihood that a customer will be in an accident.
- Second: They are selected after rigorous actuarial analysis. Every rating variable has been proved effective through analysis of actual data.
- Third: They are filed in advance with state regulators, along with statistical proof of their effectiveness. In some states, they must be approved in advance. And they can't be changed without going through the same regulatory process. Any federal effort to oversee rating variables will overlap rigorous efforts that states already undertake.

- Fourth: Companies constantly review how effective these factors are. If they don't work in the real world, they are adjusted or abandoned.
- Fifth: Factors can change over time, and actuaries adjust those factors as a result. For example, gender is a well-known, commonly used variable, and part of the reason it has been effective is that men drive more miles than women. That is changing. From 1963 to 2013, the number of miles the average man drove increased by about a third, but the number of miles the average woman drove increased nearly 90 percent. (Sivan, 2015) The predictive power of gender as a rating variable has changed because the more miles you drive, the more likely you are to be in a crash, and women are approaching men in that respect.

- Sixth: The variables interact with each other, often in subtle ways. Actuaries incorporate the interaction into rates.

Interaction is a bit difficult to describe, though I think you will recognize it from this example in the world of health. Smoking increases the chance of throat cancer. Drinking does as well. However, a person who smokes and drinks has a greater chance of throat cancer than you would expect if you just added together the effect from each behavior. They interact. Each behavior strengthens the effect of the other, like two evil bullies, egging each other on.

Actuaries have gotten better at analyzing this in recent years, thanks to better data and faster computers. This increasing sophistication also means that a simple one-way analysis – changing, say, the gender of a

hypothetical driver while holding all other information constant – does not give a complete picture of how insurers treat that rating variable. There may be interactions between gender and one of the variables held constant, and that information is lost in this sort of simplistic analysis.

- Seventh: Insurers are constantly looking for new variables. When they find one, the new one can change how much emphasis is placed on the old ones.
- Last but certainly not least: The setting of private-passenger auto insurance rates is a color-blind process. U.S. auto insurers do not gather information based on race or income, nor do they discriminate against anyone on the basis of race or income. U.S. auto insurers do not adjust their rates based on any proxy for race or income.

Thank you for your time. I would be happy to respond to any questions you might have.