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**March 25, 2019 Public Hearing**

**In Regard to Private Passenger Auto Insurance in the  
District of Columbia**

**Department of Insurance, Securities and Banking**

Commissioner Taylor, distinguished members of the panel. My name is Richard Gibson. I am the senior property/casualty fellow at the American Academy of Actuaries (Academy). The Academy is a 19,500-member professional association whose mission is to serve the public on behalf of 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. I appreciate this opportunity to testify at this Public Hearing: The State of Private Passenger Automobile Insurance in the District of Columbia.

My comments will be confined to the use of predictive models as used in setting insurance rates. This is an area wherein actuaries have played a significant role and have had a significant impact. As one would expect, it is a topic on which the American Academy of Actuaries has placed important emphasis through two of its active committees. The first is our Automobile Insurance Committee. The second is our Data Science and Analytics Committee under the Risk Management and Financial Reporting Council.

The Academy has also been active in providing analysis to regulators and practicing actuaries on this topic area. In 2017, our Casualty Practice Council conducted a daylong seminar at the National Association of Insurance Commissioners' Insurance Summit to help familiarize regulators with predictive modeling, including how it relates to public policy issues. A similar session is planned for the 2019 Insurance Summit. In 2018, the Academy's Big Data Task Force produced a monograph, *Big Data and the Role of the Actuary*, which includes extensive sections on regulatory and professionalism considerations, which has been presented at multiple forums, including the International Congress of Actuaries. Recently, I have provided comments to the NAIC's Casualty Actuarial and Statistical Task Force, or CASTF, on its draft white paper titled *Regulatory Review of Predictive Models*.

The insurance underwriting process has always been concerned with effecting risk transfer between insurance consumers and insurance companies. Critical considerations in the risk transfer process are the acceptability (in some cases insurability) of the insurance customers, the financial strength of the insurers to underwrite the insurable risks, the relative risk of each insured exposure, and the proper assignment of price reflecting this relative risk. There is little doubt that the underwriting process has evolved over many years. Owing to increased computing power and the emergence of new and

abundant data sources, the pace of that evolution has accelerated in the most recent decade. As noted above, actuaries have played a key role in bringing these two developments together via new and more sophisticated models—or, what has come to be known as predictive models. The main thrust of these models has been in the areas of risk classification and more accurate price assignment. Without a doubt, they have yielded improvements. The CASTF draft paper noted above opens with the following:

Insurers' use of predictive analytics along with big data has significant potential benefits to both consumers and insurers by transforming the insurer-consumer experience into a more meaningful relationship. Predictive analytics can reveal insights into consumer behavior, lower the cost of insurance for many, and provide tools for the consumer to better control and mitigate loss. However, predictive analytic techniques are evolving rapidly and leaving many regulators without the necessary tools to effectively review insurers' use of predictive models in insurance applications.

This excerpt is in keeping with many of the points I have made above. To emphasize some of the specific benefits, I would say that many insurance consumers have realized price decreases as a result of the improved segmentation that results when predictive models are used. Further, broader availability of coverage can occur when insurers have clearer and more quantifiable understanding of the relative riskiness of their customers. However, the quoted passage also alludes to the new challenges that come with effectively reviewing the models and the rates that result from them. As stated in our *Big Data and the Role of the Actuary*:

Reviewing predictive analytics can be a challenge to regulators given the amount of data used to develop a model, the complexity of the techniques, and limited regulatory resources. Regulators also may have difficulty explaining complex models to consumers and other interested parties who are trying to understand the impact of the models on insurance rates.

Public policy is served by a well-functioning regulatory review process and can help to facilitate a well-functioning insurance industry. I am confident that actuaries can contribute meaningfully to this discussion. Another excerpt from *Big Data and the Role of the Actuary* highlights this point:

As the utilization of Big Data becomes a potential disruptor for the insurance industry, the need for professionals who are bound by a code of conduct, adhere to standards of practice and qualification, and subject to counseling and discipline if they fail to do so, will become more apparent.

To reiterate key points, rate setting has evolved in recent years to be more sophisticated via the use of predictive models. This trend is likely to continue as more industry participants adopt new models and as early adopters continue to refine their existing models. All of this creates new challenges for regulatory agencies like the District of Columbia Department of Insurance, Securities and Banking. Though these predictive models may be newer, there are existing regulations and actuarial standards of practice that still apply and form a basis for an effective process going forward. Delineating some of the more important resources is worthwhile.

## **Existing Regulatory Guidance**

Let me start with the language found in Section 31-2703 (a) of the Code of the District of Columbia. It states that rates shall not be *excessive, inadequate, or unfairly discriminatory*. Later in Section 31-2703, (f)(1) and (f)(2) expand upon this as follows:

(f)(1) Every classification plan fixed, established, and promulgated by the Commissioner shall be so structured as to produce rates or premium charges which are adequate, not excessive, and not unfairly discriminatory.

(2) Every final rate or premium charge proposed to be used by any motor vehicle insurer shall be filed with the Commissioner and shall be adequate, not excessive, and not unfairly discriminatory. A motor vehicle insurance rate may be held by the Commissioner to be excessive if the rate is unreasonably high for the insurance provided and is not actuarially justified based on the commonly accepted actuarial principles. In determining whether rates comply with standards under this subsection, due consideration shall be given for past and prospective loss experience within and outside the District, a reasonable margin for underwriting profit and contingencies, dividends, savings, or unabsorbed premium deposits allowed or returned by insurers to their policyholders or members or subscribers, past and prospective expenses, both countrywide and in the District, and investment income earned or realized by insurers both from their unearned premiums and from their loss reserve funds. If the Commissioner finds after a hearing that a rate is not in compliance with this subsection, he shall order that its use be discontinued for any policy issued or renewed after a date specified in the order and the order may prospectively provide for premium adjustment of any policy then in force.

## **Actuarial Standards of Practice**

The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of actuarial standards of practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services. The complete list of standards applies to many different situations and across various practice areas. What follows is a brief synopsis of ASOPs (the full content of each can be found at <http://www.actuarialstandardsboard.org>) that are germane to our discussion today:

- ASOP No.12, *Risk Classification (for all Practice Areas)*—This ASOP provides guidance to actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems. In part, it states:

The actuary should select risk characteristics that are related to expected outcomes. A relationship between a risk characteristic and an expected outcome, such as cost, is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic. In demonstrating a relationship, the actuary may use relevant information from any reliable source, including statistical or other mathematical analysis of available data. The actuary may also use clinical experience and expert opinion. Rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics. In the context of rates, the word fair is often used in place of the word equitable. The actuary should consider the interdependence of risk characteristics. To the extent the actuary expects the interdependence to have a material impact on the operation of the risk classification system, the actuary should make appropriate adjustments.

The standard goes on to discuss other key considerations such as causality, objectivity, practicality, applicable law, industry practices, business practices, the intended use of the risk classification system, credibility, the impact or potential for adverse selection, and the long-term viability of the risk classification system.

Also, of note, reference is made to ASOP No. 23 when data supplied by others is relied upon. Further, ASOP No. 41 is referenced regarding documentation of assumptions and methodologies.

- ASOP No.23, *Data Quality*—The purpose of this actuarial standard of practice is to provide guidance to the actuary when performing actuarial services involving data. In part, it states:

Appropriate data that are accurate and complete may not be available. The actuary should use available data that, in the actuary’s professional judgment, allow the actuary to perform the desired analysis. However, if significant data limitations are known to the actuary, the actuary should disclose those limitations and their implications. In undertaking an analysis, the actuary should determine what data to use. The actuary should take into account the scope of the assignment and the intended use of the analysis being performed to determine the nature of the data needed and the number of alternative data sets or data sources. In so doing, consideration is given to timeliness, internal consistency, relevant external information available, sufficiency, and limitations.

- ASOP No. 41, *Actuarial Communications*—This ASOP provides guidance to actuaries with respect to actuarial communications pertaining to an actuarial opinion or other actuarial findings. In part, it states:

The performance of a specific actuarial engagement or assignment typically requires significant and ongoing communications between the actuary and the intended users regarding the following: the scope of the requested work; the methods, procedures, assumptions, data, and other information required to complete the work; and the development of the communication of the actuarial findings. The actuary should take appropriate steps to ensure that each actuarial communication is clear and uses language appropriate to the particular circumstances, taking into account the intended users.

## **Conclusion**

Predictive modeling is prevalent in insurance ratemaking in the District of Columbia and across the country. It is likely to continue to progress in its use as new tools and models allow for even better matching of price to risk. Clearly, modeling is already common in private passenger auto insurance, and we see it used with increasing frequency in other lines as well. In many ways, predictive modeling is merely an extension of decades-long movement toward more accurate underwriting and pricing of insured risks. This greater accuracy provides for broader insurance availability. In short, benefits have been realized, and it is reasonable to expect that this can continue.

That said, these changes have come with some challenges. Reaching an informed level of understanding is difficult. Fortunately, there are existing constructs in place that will help to mitigate this knowledge gap. Specifically, existing rate regulation and existing actuarial standards of practice provide a framework to advance toward an acceptable outcome. We should not abandon this framework, and in fact relying more heavily upon it makes sense. Collaboration and communication between regulators and actuaries is the linchpin to success in this area. Further, if the insurer-consumer relationship is to be more meaningful, insurers need to be prepared to explain the results of the models to their customers. Actuaries can be helpful in this regard as well.

To close, I will reiterate my thanks for the opportunity to provide this testimony. Should subsequent questions occur, please contact Marc Rosenberg, the Academy’s senior casualty policy analyst, at [rosenberg@actuary.org](mailto:rosenberg@actuary.org) or 202-785-7865.