



AMERICAN ACADEMY of ACTUARIES

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March 29, 2021

Honorable Janet Buckner
Colorado State Capitol
200 E. Colfax Ave., Rm. 346
Denver, CO 80203

Dear Senator Buckner:

The Casualty Practice Council (CPC) of the American Academy of Actuaries (Academy)¹ is committed to identifying and exploring issues pertaining to race, diversity, and inclusion and ways to address practices that could create barriers to, or conversely provide incentives for inclusion to, insurance products. For that reason, we appreciate the opportunity to provide comments on the proposed Colorado Senate Bill 21-169.

We recognize that policymakers must balance different considerations when making public policy decisions. The purpose of our letter is to highlight certain actuarial concepts and actuarial resources that may be useful when considering important topics that come into focus as a result of the bill. Specifically, we would like to address a few key aspects of the bill related to:

- Unfair Discrimination
- Direct Causal Relationships
- Use of External Data

Unfair Discrimination

The Academy's CPC notes that in order to fully discuss "unfair discrimination," it is important to have a clear definition of "fairness." Fairness is defined many different ways, and what may seem "fair" to some will seem "unfair" to others. For U.S. actuaries, when we focus on the question of "fair" insurance rates, we are guided by actuarial standards of practice (ASOPs); guidance on this topic is included in ASOP No. 12, *Risk Classification*. Actuarial standards of practice provide guidance on the techniques, applications, procedures, and methods that reflect the appropriate actuarial practices with which credentialed actuaries must comply in the United States. The Code of Professional Conduct requires actuaries to satisfy applicable standards of

¹ 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.

practice whenever providing actuarial services, and in the U.S. those practice standards are ASOPs.

Using ASOP No. 12 as guidance, rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics. This is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic. For example, it would be expected that miles driven in a particular policy period would be correlated to automobile insurance losses within the next policy period, while it would not be expected that the color of the vehicle on a policy would have any significant correlation to insurance losses.

Direct Causal Relationships

For the purposes of rate setting guided by risk classification, it is important to note that it is not necessary for an actuary to establish a cause-and-effect relationship between the risk characteristic and expected outcome. In fact, it is unlikely that a cause-and-effect relationship could be established in most of the risk characteristics used in property and casualty lines of insurance. Nonetheless, intuitive relationships do exist between rating characteristics and the risk of loss.

For example, miles driven in a prior policy period does not *cause* a higher frequency in insurance losses in a subsequent period. Yet a significant relationship between the variable and expected outcome exists.

The bill, as currently written, would impose restrictions on the use of data that has no direct causal relationship. If adopted, this could prohibit the use of data that has been demonstrated to have significant relationships with expected outcomes, like miles driven in a prior policy period (and many other rating variables used to differentiate risk).

Use of External Data

We note that the bill states that “the accuracy and reliability of external consumer data and information sources can vary greatly.”

The insurance industry has been data-driven almost from its inception. In recent years, the availability of vast amounts of data and the rapid increase in computing power has led to dramatic increases in the amount of data analytics that is used in setting insurance rates, with this trend especially notable in personal lines such as private passenger auto. As the industry has moved from relatively broad rating classifications to an increasingly segmented classification approach, some questions have arisen regarding the appropriate use of external data and potential for bias in certain data elements.

This bill apparently arises, at least in part, out of concern for whether some external data sets that are being used in predictive models might contain hidden biases or serve as proxies for prohibited characteristics. We note that there are other solutions that could be considered to address these concerns.

In 2017 and again in 2019, the Automobile Insurance Committee of the Academy’s CPC responded to requests from the National Association of Insurance Commissioners (NAIC) and conducted forums on predictive modeling at the NAIC’s annual Insurance Summit. In both instances, the question of data quality was discussed. One of the ideas that arose from these discussions was the concept of one or more independent third-party organization(s) that could verify and certify the various external databases that might be used by insurers in their predictive models or other data analyses.

Racial biases would be one of the things that such a third-party organization could look for. For example, if a database is accurately reporting all traffic violations, does it end up inadvertently reflecting discriminatory law enforcement patterns in some jurisdictions? Or does a database of arrests take into account that some cases were dropped or that some defendants were acquitted?

There are questions about accuracy and relevance of data as well. How old is the data? When an insurer pulls data from multiple sources related to an insured named, for instance, “John Smith,” how certain are we that all the reports are for the same John Smith? Does an individual have the right to access his or her file in a database and to correct errors? This is mandated by federal law in the case of consumer credit reports, but not necessarily for other databases.

While in our general observation both individual insurance carriers and third-party data providers do take several important steps to assess quality of data, there may be room for improvement in assuring the quality of all the external data being used in risk classification systems—not just to guard against hidden biases, but also to have greater confidence in all the information being used.

For all of these reasons, we suggest that the use of a third-party organization to aid in assessing potential bias in external data sources be considered as an alternative to the solution offered in this bill.

Other Actuarial Resources

We refer you to the [comments](#) to the NAIC Special (EX) Committee on Race and Insurance (November 12, 2020), as well as our [comments](#) to the National Council of Insurance Legislators Special Committee on Race in Insurance Underwriting (December 9, 2020) that discuss some of these topics in more detail.

Furthermore, we refer you to other actuarial resources that relate to these topics:

- [ASOP No. 56, Modeling](#)
- [ASOP No. 23, Data Quality](#)
- [ASOP No. 36, Statements of Actuarial Opinion Regarding P/C Loss and Loss Adjustment Expense Reserves](#)
- [Big Data and the Role of the Actuary monograph](#)

All the resources that we have suggested herein aim to provide information or guidance to actuaries, regulators, and legislators on emerging issues with regard to using data in insurance rating and solvency.

The CPC welcomes the opportunity to support efforts to address diversity, equity and inclusion in insurance practices as they relate to property and casualty insurance and to that end, we have recently formed a Property/Casualty Racial Equity Task Force to further discussions on many of the issues of concern.

If you have any questions or would like further dialogue on these property/casualty topics, please contact Devin Boerm (boerm@actuary.org), the Academy's deputy director of public policy. If you would like to discuss the Academy's input more generally across practice areas, please feel free to contact Craig Hanna (hanna@actuary.org), director of public policy.

Sincerely,

Lauren J. Cavanaugh, MAAA, FCAS
Vice President, Casualty
American Academy of Actuaries

CC:
Michael Conway, Colorado Insurance Commissioner