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Kris DeFrain, FCAS, MAAA, CPCU
Director of Research and Actuarial Services
National Association of Insurance
      Commissioners (NAIC) Central Office
Via Email

Re: CASTF Regulatory Review of Predictive Models White Paper

Dear Kris:

As the American Academy of Actuaries'[1] senior property/casualty fellow, I appreciate this opportunity to comment on the white paper exposure draft of the Casualty Actuarial and Statistical Task Force (CASTF) discussing best practices for the Regulatory Review of Predictive Models (RRPM). To provide input, we have sought guidance from two Academy groups: the Automobile Insurance Committee of the Casualty Practice Council (CPC) and the Big Data Task Force.

I agree with the CASTF that "Insurers' use of predictive analytics along with big data has significant potential benefits to both consumers and insurers." Though predictive analytics is still in its early stages of use in insurance ratemaking, benefits are being realized. Along the way, the insurance industry has committed resources to fund and staff the development of predictive analytics projects. Actuaries have played a central role in this development.

In 2017, the CPC conducted a daylong seminar at the NAIC's Insurance Summit to help familiarize regulators with predictive modeling including how it relates to public policy issues. In 2018, the Academy produced a monograph, *Big Data and the Role of the Actuary*, which includes extensive sections on regulatory and professionalism considerations.

The RRPM white paper is comprehensive in its scope. The need for a set of best practices in the review process is well noted. Additionally, there are 92 potential information items identified in the paper for use in reviewing model submission. I offer the following for CASTF's consideration:

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[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.

- The CASTF's charge to develop best practices for reviewing predictive rating models is an important goal. However, there is potential for the process to become unmanageable for both the modelers and the reviewers. Is there opportunity to explore whether the suggested RRPM process might be unwieldy for regulators? Would insurance consumers be better served by a more collaborative framework to assess issues?
- Confidentiality is addressed in two places. In the first instance, confidentiality is cited as a key regulatory principle, where appropriate. Later in the paper, it is addressed directly in that insurers are guided to know the specifics of state regulations regarding confidentiality of rate filings. Could there be a separate discussion of this issue that would seek to come up with alternative methods of model review that are acceptable to modelers and regulators?
- On page three of the RRPM, it states "GLM (generalized linear model) output is assumed, as part of the model design, to be 100% credible no matter the size of the underlying data set." It should be noted that a GLM produces both a parameter estimate and a standard error around that parameter estimate. The standard error along with claim volume consideration is applied in the selection of proposed relativities.
- Information items A.1.a and A.1.d seem to be addressing the same concern. Could the differences between A.1.a and A.1.d be clarified?
- Information item A.5.a references the potential for submitting raw data. Could this prove problematic as to the security of insurance consumer data? Will regulators be attempting to recreate models? The sheer size of these data sets could make them difficult to provide. Would sample data set structures meet the needs of this information item? Finally, there might be issues regarding contractual relationships with third-party data providers and their resources.
- The actuarial standards of practice (ASOPs) are undoubtedly a valuable resource. The ASOPs establish standards for "appropriate" actuarial practice in the United States (ASOP No. 1, *Introductory Actuarial Standard of Practice*, Section 1). At a minimum, ASOP No. 12, *Risk Classification (For All Practice Areas),* and ASOP No. 41, *Actuarial Communications*, are applicable. Should those documents be explicitly considered in the best practices for RRPM?
- Item B.3.c addresses the intuitiveness of the predictor variables. Is it the intent of this item to prohibit variables that are not explicitly intuitive? Actuarial principles state that an intuitive argument is desirable, but not required.
- Item C.2.a appears to be addressing causal effect of the predictor variables. Could you please clarify this?
- In the introduction, there is a statement that "the insurer must anticipate … the reviewers' interests because the reviewers will respond with unanticipated questions." Anticipating the unanticipated can prove challenging. Likely, this comment is addressing a communication-related issue. Could you please clarify?

In closing, I wish to reiterate that the American Academy of Actuaries remains committed to working with CASTF as regulators strive to understand and monitor the growing role of predictive modeling in insurance rate development. We look forward to participating in the ongoing dialogue on the RRPM to help to achieve a thoughtful and effective review process.

If you have any questions about these comments, contact me (gibson@actuary.org) or Marc Rosenberg, senior casualty policy analyst, at 202-785-7865 or rosenberg@actuary.org.

Sincerely,

Richard Gibson, MAAA, FCAS
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American Academy of Actuaries