Neural Networks
One Regulator's Perspective

Thomas G. Hess, FCAS, MAAA, ARM
Ohio Department of Insurance

Antitrust Notice

- The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.

- Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.

- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.

CAS

Disclaimer

The views expressed in this presentation are those of the speaker at this point in time. These views are not necessarily identical to those of the CAS, the speaker's employer, or the speaker's prior views.

When Chris asked me to participate in this talk he said

"Conventional wisdom says "We could never use a Neural Network for a rating algorithm."

> I said, "Oh?"
>
> and then I proceeded to think about the issue. I researched the issue. What am I missing?

Insurance Law & Regulation

- Generally, State Regulations don't tell you how to create a rating plan.
  - California is an exception.
  - State Insurance Departments will tell you what forms & exhibits you need to file.
  - State's laws, regulations, and DOI staff will tell you what the plan can & can not do.
    - For example, Ohio's regulations used to say you could not have different PPA rates within a municipality.

Chapter 3937 Casualty Insurance; Motor Vehicle Insurance

&

Chapter 3935: Rating Bureaus

- Above are the relevant chapters from the Ohio Revised Code, ORC, for our discussion today

Insurers must support everything.

"When … the superintendent does not have sufficient information to determine whether such filing complies with sections 3937.01 to 3739.17 of the Revised Code, he may require such insurer to furnish the information upon which it supports such filing."

- Ohio Revised Code § 3937.03 (A)

Standards For Rates

"Rates shall not be excessive, inadequate, or unfairly discriminatory."

- Ohio Revised Code § 3937.02 (D)

In Practice

- DOI staff would be looking at your filing not the Superintendent
- If your filing is new or original you will need to explain what you are doing.
- If you don't explain to the staff's satisfaction, they will ask again.
- It is better to be partners rather than antagonists in this process.

I don't see why it should be any more difficult than any other filing of equivalent complexity.

Caveats

- One regulator's opinion
- Considering the regulations in one state
- At this point in time
- Haven't seen the filing