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Insurance Data Mining: Sound Business Practice or Unfair Discrimination?

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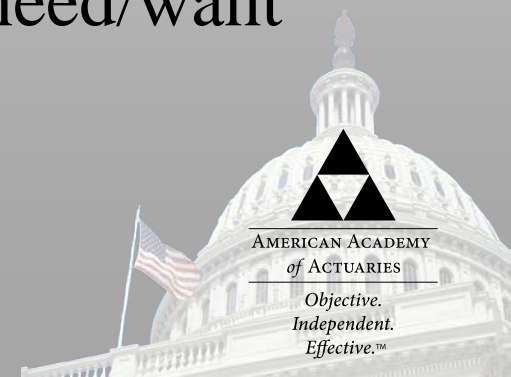
Insurance Data Mining: Sound Business Practice or Unfair Discrimination?

- Data mining techniques can be useful for:
 - Establishing rating plans
 - Adjusting claims
 - Marketing
 - Fraud prevention
 - Other
- Focus today is price optimization in personal lines insurance
- Price optimization incorporates the results of data mining to establish rating plans



Concerns

- Data – What data is acceptable to use in establishing personal lines insurance premiums?
- Unfair Discrimination – Is there a point at which a deviation from cost-based rates results in unfairly discriminatory rates?
- Complexity – Is there a point at which a rating plan is too complex/granular?
- Transparency – What does the regulator need/want to see?



Data

- Insurance-related consumer data
 - Loss/claims experience
 - Competitor experience
 - Percentage of existing insureds renewing given a premium change (retention analysis based on insurer's own data)
 - Percentage of potential new insureds purchasing given premium levels (conversion analysis based on insurer's own data or insurance quoting/shopping database)



Data

- Non-insurance consumer data
 - Credit-related data
 - Used to develop cost-based rating plans
 - Regulated as to what data can be used and how it is used
- Is there other data whose use could or should be regulated?
 - Either insurance related, e.g., claims inquiries or
 - Non-insurance related, e.g., magazine subscriptions



Unfair Discrimination

- Most states require that “rates shall not be excessive, inadequate or unfairly discriminatory”
- What is unfairly discriminatory?
 - Using rating characteristics that are not allowed, e.g., race, religion
 - Using rating characteristics that are not filed/approved
 - Charging two risks with the same risk profile at two different prices
 - Using rating characteristics that are not cost-based
 - Selecting rating factors that deviate too far from the cost-based indication



Complexity/Granularity

- Personal lines rating plans have become increasingly complex
 - More sophisticated modeling techniques, e.g., generalized linear modeling
 - More refined rating classifications
- Complexity/granularity is independent of price optimization
- Is there a point at which a rating plan is too granular?



Transparency

- All rating characteristics that are used are filed
 - How do the indicated rating factors and selected rating factors compare?
 - Models employed can be reviewed, e.g., credit-scoring models
- Distributions of rate changes
 - Did the business considerations achieve the goal of limiting changes?
- Comparison to loss experience
 - Are the final rates reasonably consistent with cost-based indications?
- What other information would be helpful?
 - Rate Filing Opinion/Attestation?

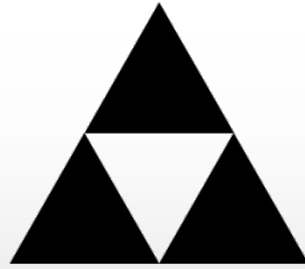


Glossary of Terms

- Rating characteristic – a measurable or observable characteristic, e.g., age, gender, marital status
- Rating factor – the numeric value assigned to a rating characteristic
- Rating plan – the schedule of rating characteristics and corresponding rating factors along with the manner/order in which they are applied to determine the final premium
- Risk profile – the combination of rating characteristics of a particular risk



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