



AMERICAN ACADEMY *of* ACTUARIES

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Price Optimization

Casualty Actuarial & Statistical Task Force
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Ratemaking Process – Step Back

- Regulatory Requirement – rates should be adequate, not excessive, or unfairly discriminatory
- Process (per EPIC Consulting)
 - Actuaries determine expected losses, expenses, and profit loading
 - Management makes adjustments to reflect business considerations, marketing, underwriting, and competitive conditions
 - Regulators permit insurers to reflect judgment and competitive environment in rates
 - Rate Filer (Insurer) must ensure that filed rates are adequate, not excessive, or unfairly discriminatory
 - Actuaries can opine that the filed rates meet statutory standard if reasonably close to actuarial estimate
 - Similar to reserving actuaries opining on held reserves



Price Optimization – defined by Earnix

- Systematic and statistical method to help an insurer estimate a rating plan factoring in a competitive environment
- Informs an insurer's judgment when setting rates by producing suggested competitive adjustments to the actuarial indicated loss costs
- Utilizes a variety of applied mathematical techniques (linear, non-linear, integer programming) to analyze insurer's data and other considerations
- Enables exhaustive search across thousands of pricing alternatives in multiple scenarios to assist insurers in comparative rate analysis
 - Improves efficiency of rate setting process;
 - Enables companies to more accurately predict the outcome of their rate decisions



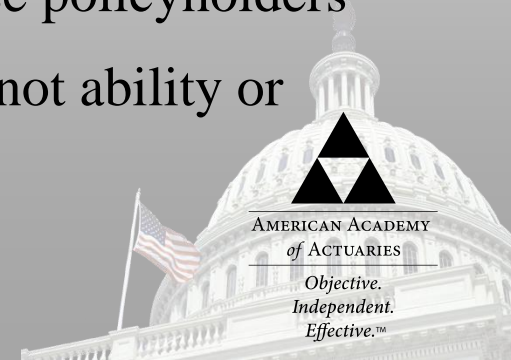
Price Optimization – Proponents

- Compare price optimization to traditional rating approach
 - Traditional approach: Base rate (loss cost) x adjustment factors
 - Adjustment factors based on age, gender, territory, make, and model year
 - Adjustments to rate based on market, regulatory, and other considerations
 - Filed rates may have been below actuarially derived loss cost
 - Price Optimization: Base rate (loss cost) x adjustments
 - Adjustments based on price optimization methodology
- Loss costs remain the foundation of the rate setting process
 - Price optimization factors typically are designed to stay within certain constraints and may increase or decrease the indicated loss cost
 - Actuarial standards still apply to the loss cost and potentially to the constraints
- Personal lines is a very competitive market as evidenced by advertising spent by large insurers
 - Multi channel advertising though: Internet, television, radio, etc.
 - Competition has decreased the size of the assigned risk markets



Price Optimization – Issues

- Price Optimization has generated controversy among some regulators and consumer advocates
 - Do the resulting rates from price optimization models violate the requirement of: “not excessive nor unfairly discriminatory”?
- Relies on an analysis of the elasticity of demand of customers to raise prices above the cost-based estimate on some policyholders who are known to be less likely to change insurers when price increases are below a certain threshold
 - Great inertia in the personal lines market (people tend not to shop much), as evidenced by recent survey
 - Concern is that price optimization tries to find these policyholders
- Rates should be based on the cost of transferring risk, not ability or willingness to pay



Price Optimization – Questions

- How does price optimization fit within the actuarial profession?
 - Cost-based resides with actuaries
 - Where does the demand and competitive analysis reside?
 - Should actuaries be involved in price optimization at all?
- Is price optimization ratemaking or NOT ratemaking?
 - Actuarial Code of Conduct (Precept 1?)
- Should the actuary consider outcomes other than cost when making rates?
- Is price optimization consistent with:
 - Statement of principles on ratemaking?
 - Actuarial Standards of Practice?
 - Actuarial practice notes (ratemaking practice note does not exist!)?



Price Optimization – Questions

- Does price optimization cross the lines into not excessive nor unfairly discriminatory?
 - Has it already or is there a threshold?
 - Is the threshold or constraint across the entire book or vary by class?
- What can and should be reviewed to ensure this line has not been crossed?
 - Complexity of the rating model and variables
 - Constraint utilized in price optimization five percent of indicated loss cost or 25 percent?
 - Dispersion of final rates relative to indicated loss costs
 - Are some coverages more affected than others?
 - Analysis of dispersion of final rates by geographic region
 - Differential between retention and new business rates
- Should the actuary be involved in price optimization with regard to final rates?



Price Optimization



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