4.1 Summary

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Insurance companies invest heavily in ratemaking analysis but may not always implement the indicated rates. Reasons for this include regulatory and operational constraints, as well as marketing factors like competitive position, customer demand, and the underwriting cycle. While traditional pricing strategies adjust for these factors judgmentally, advanced methods like lifetime customer value and optimized pricing provide a more systematic approach.

Regulatory Constraints

Potential U.S. regulatory constraints:

- Restricting the use of certain actuarially indicated rates
- Limiting the amount a rate can change, either the overall average rate or the rate for a single group/individual
- Requiring insurance companies to provide customers with advanced notice of a rate change
- Prohibiting the use of certain rating variables, such as credit scores in personal lines
- Prescribing specific ratemaking techniques, such as multivariate analysis

Options companies have to combat constraints:

- Take legal action to challenge the regulation
- Revise their underwriting guidelines to avoid writing policies at an inadequate rate level
- Change their marketing scheme to try to minimize the number of new policyholders whose rates are believed to be inadequate
- If a rating variable is banned, they could use a different but related variable

Operational Constraints

Potential challenges when implementing a new rate or rating variable:

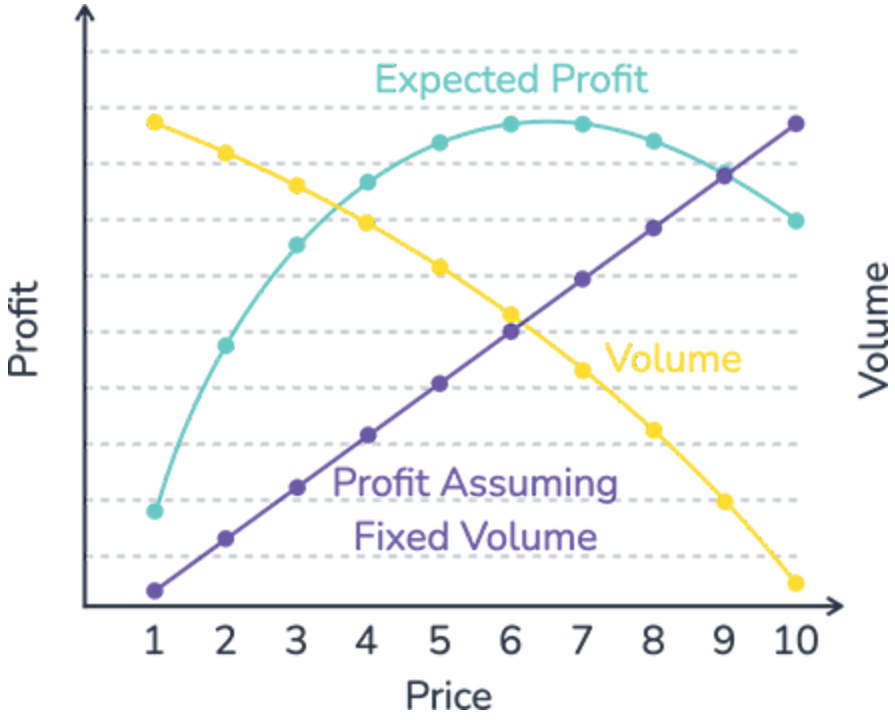
- Systems limitations
- Resource constraints

- Limited access to information (e.g. policyholder data)

A **cost-benefit analysis** can be used to evaluate a company's potential options and select an appropriate course of action. In general, this involves evaluating the costs and the benefits of taking a certain action over a specified **time horizon**.

Marketing Considerations

Relationship between insurance price, the volume of policyholder demand, and insurer profit:



Companies tend to classify insureds as either new business or renewal business and analyze them separately. Some factors that affect a policyholder's likelihood to renew are:

- Prices of competing products
- Total cost of the product
- Rate changes
- Characteristics of the insured/sensitivity to price
- Customer satisfaction and brand loyalty

Traditional Techniques for Incorporating Marketing Considerations

COMPETITIVE COMPARISONS

$$\% \text{ Competitive Position} = \frac{\text{Competitor Premium}}{\text{Company Premium}} - 1$$

$$\$ \text{ Competitive Position} = \text{Competitor Premium} - \text{Company Premium}$$

$$\% \text{ Win} = \frac{\#\text{ Risks Meeting Criteria (e.g., Premium Lower than Competitor)}}{\text{Total }\#\text{ of Risks}}$$

$$\text{Rank } = \text{Rank of Company Premium Compared to Several Competitors}$$

OTHER TECHNIQUES AND METRICS

- **Close ratio** – measures the rate at which prospective insureds accept a new quote.

$$\text{Close ratio} = \frac{\#\text{ of Accepted Quotes}}{\text{Total }\#\text{ of Quotes}}$$

- **Retention ratio** – measures the rate at which existing policyholders renew their policies upon expiration.

$$\text{Retention ratio} = \frac{\#\text{ of Policies Renewed}}{\text{Total }\#\text{ of potential renewals}}$$

- **Growth** – attracting new policyholders while retaining existing ones.

$$= \frac{\text{New Policies Written} - \text{Lost Policies}}{\text{Policies at Start of Period}}$$
$$= \frac{\text{Policies at End of Period}}{\text{Policies at Start of Period}} - 1$$

- **Distributional analysis** – studying the distributions of new and renewal business by customer segment and how those distributions change over time.
- **Dislocation analysis** – studying the way different rate changes impact policyholders' propensity to renew their policy.

Systematic Techniques for Incorporating Marketing Considerations

- **Lifetime value analysis** – attempts to understand the profitability of an insured over a longer period of time by acknowledging that not all insureds will renew and that certain actions can influence some insureds to stay.
- **Optimized pricing** – utilizes multivariate statistical modeling techniques to produce better estimates for policyholder retention, policyholder conversion, and customer demand.

Underwriting Cycles

Soft Market

- Low prices
- High growth

Hard Market

- High prices
- Low growth