

# Actuarial pricing– theory and deviation due to practical experience.

Dr. Asha Joshi

# My approach

The title of my paper is **Actuarial pricing–theory and deviation due to practical experience.**

An actuary follows a model and arrives at premium rate.

Consequently some events takes place and she has to deviate from the original presentation. At the same time has to take care that Actuarial principles are not compromised.

What I have to say will become clearer as the presentation progresses.

# Tariff and non tariff markets

- ▶ In India general insurance companies were required to follow standard Tariff except marine, liability, aviation, health, and miscellaneous till 2007. All companies followed same tariff and policy conditions. In 2007 market was detariffed and companies were allowed free pricing (except Motor third party). Tariffs were well understood by the market and marketing persons.
- ▶ UK motor market until 1967 premiums were controlled by a cartel of large companies. Lot to learn from their experience.

Actuarial science is a practical subject and we have to quantify the uncertainty in exact numbers reflecting it in the premium to be charged.

- ▶ Premium is the “price” of benefits
- ▶ It can be described as the amount that can be charged under a particular set of market conditions and may be more or less than the “cost”.

# Pricing process after a Product has been designed

- ▶ Understand the product
- ▶ Examine the data available within the company/ outside the company.
- ▶ Modifications necessary in view of target population
- ▶ Construct model
- ▶ Arrive at Risk premium
- ▶ Reinsurance required
- ▶ Margins and other costs involved
- ▶ Arrive at office premium

## Further checks

- ▶ Check the robustness of the pricing.
- ▶ Compare with Insurer's own other product and that of competitors.
- ▶ Get approval from the Regulator.
- ▶ Keep information system in place for review of product.
- ▶ Find a suitable time to launch the product

# Review of product may reveal

The product offered may not appeal to their potential customers because–

- ▶ Price they need to charge for their product in order to achieve a satisfactory financial result may be too high to be competitive
- ▶ as a consequence of losing business to competitors, their unit costs rise so that it is found even harder to price their products competitively
- ▶ their administrative structures and channels for obtaining business may become obsolete, for example because of technological developments exploited by their competitors

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- ▶ failure of marketing strategy, if certain risk groups appeared to be more attractive risks than they actually were.
- ▶ the assumptions underlying their pricing prove to be too optimistic
- ▶ the business (as opposed to their claims experience) may be adversely affected by changes in legislation or economic conditions

# Review of the Model

Review is necessary

Whether the product is successful or failure

Whether the reasons are internal or external

There may be

- ▶ Errors in pricing data
- ▶ Wrong parameter selection
- ▶ Assuming unreasonable distributions
- ▶ Using an inappropriate model

These errors can be corrected by reviewing the model and rectifying it.

Actuaries are thus involved in models based on past experience, possibly modified with scenarios.

But general insurance is fast changing and challenges this.

This accompanied by intense competition has made pricing and then ensuring adequate reserving a very hard task.

# Structural changes

- ❖ changes in legislations and court awards
- ❖ Legislation may not change but there is some court award affecting liability
- ❖ Change in market environment (awareness due to communications etc)
- ❖ Economic factors or litigiousness of our society
- ❖ Demographic and social changes
- ❖ Environmental changes
- ❖ Reported losses change because of claim handling

# Government/regulator's initiatives

Maintain Healthy competition for benefit of common man and Control mis-selling.

Make Insurance available to

- Low income population
- Elderly and very elderly section
- Promoting financial inclusion packages.

Public private partnership

- While making variation Actuary has
- ▶ to maintain the scientific approach
  - ▶ and has also to ensure financial viability.

# The possible way out could be

- Further segmentation
- More reliance on recent data
- Study the margins in the pricing
- Incentive to customers for providing more detailed data
- Study competitors' / reinsurer's claim experience
- And finally use **JUDGEMENT.**

# References

- ▶ IRDA regulations and circulars and Annual reports
- ▶ India Motor Tariff
- ▶ ActEd study material
- ▶ **Insurance Company Failure report by Working Party** Roger Massey (Chairman) David Hart, James Widdows, Debbie Law, Kabari Bhattacharya ,Wendy Hawes, Richard Shaw
- ▶ *Transition to Non – Tariff Regime–Issues before Indian Insurance industry* Karpagam Sankaranarayanan

▶ Thank you

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