RISK PRICING AND PROFIT MAXIMIZATION OF INSURANCE COMPANIES

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Abstract

Insurance companies continue to face intense pressure to improve performance, increase profitability, deliver superior customer service and increase shareholder returns. This is primarily due to the fact that operating efficiency is of particular interest for managers whose aim is to improve the performance of their firm and, therefore safeguard the stability of the financial system by generating enough profit. The research investigates the impact of pricing of risk on the profitability of Nigeria insurance market and also the relationship between operation expenses and profitability of the non-life insurance market in Nigeria. Results show that economy, competition and government regulation have effect on pricing of risk. Also, it was observed that operation expenses is strongly correlated to profitability and should be properly managed for profit maximization.

Keywords: Pricing, risk, profitability, operating expenses

Introduction

Calculating the price of insurance has been one of the central concerns of actuarial science. Traditionally the fair premium in insurance pricing is equated with the expected loss resulting from the underwritten risk. However, as the expected loss (or net premium) does not account for the variability of risks or for the aversion of economic agents, it is apparent that more sophisticated mechanisms for the calculation of insurance premium are called for. Systematic approach to premium calculation were first proposed by Markowiyz (1952) , who introduced the concept of premium calculation principles. A premium calculation principles is a function that takes as an argument the probability distribution of a risk and the premium that should be charged for it.

Insurance pricing, involves the calculation of each policy owner’s fair share of losses and expenses. The price paid for insurance, called the premium, is the rate per unit or coverage multiplied by the number of unit purchased. Unit of insurance are measured differently according to the type of coverage . The rates are established before the exposure period to which they apply so that a forecast of the future must be made. The probable number and value of claims are forecast from historical loss experience with consideration given to trends and new developments. Insurers cannot set rates arbitrarily; rates are subject to state control (Andersen, 2008)

Many insurance companies in Nigeria, after the recapitalization of the insurance companies in 2007 have embarked on undercutting the specified rate for the insurance risks they are assuming leading to the diminution of or diminishing returns in their annual cash flows and subsequently reducing their technical profit. The underwriters are now agitating that reviewing rates of these risks especially the nonlife should be revisited by the regulatory authority, while the intermediaries in the industry believe that this might not be necessary as most of the problems faced by the insurers are self inflicted.

The objective of this research is to look at the various factors affecting pricing of risk, the effect on the profitability of the industry, and to find out the effect of operational expenses on the profitability of insurance companies in Nigeria.

Methodology

The target population comprises employees in the underwriting firms and broking firms in Lagos state where we have most of the leading insurance companies and broking...
insurance firms. The data for this study were collected through audited revenue accounts of insurance companies and the administration of well-structured questionnaire using stratified random sampling.

Three hundred and twenty questionnaires were distributed while we managed to collect only three hundred back. The reliability of the questionnaire was not tested but was used only for collecting the information needed. The questions were tailored along a four-likert scale of strongly agreed, agreed, disagreed and strongly disagreed.

The revenue accounts of 30 leading insurance companies were collected for analysis to determine whether operational expenses are factors in profitability of insurance companies. (Scib Brokers 2012).

Analysis

Data was collected by directing questionnaires to three hundred respondents randomly among nonlife insurance underwriters and insurance brokers. The questionnaire was divided into two parts, part A deals with personal information related questions and part B was designed to get information on factors likely to affect pricing of risk. For the purpose of analysis, simple descriptive analysis and percentage were used. Also regression analysis was conducted on the revenue accounts of 30 insurance companies to determine the relationship between their operation expenses and profit.

On the whole 36.67% of the respondents strongly agreed that the factors have effect on pricing, 29.67% agreed with the assertion, 21% disagreed with the assertion that all the factors have effect on pricing of risks while strongly disagreed is 12.67%.

The result of the chi square at 0.05% significance level with 6 degrees freedom is 12.59 while the calculated value is 25.94. The null hypothesis that there is no significant way by which the pricing of risk is affected by the government supervision, economy and competition is therefore rejected.

External factors studied have impact on the pricing of risk and this eventually affects the profit of the companies in the market. The price of the risk must cover the claim costs and leave a surplus after deducting the necessary operational cost and others.

To confirm the relationship between profit and operating expenses, a regression analysis was carried out, with result

\[ Y = 709.45 - 4972853 \times X \]

where \( Y \) = Profit and \( X \) = Expenses

The model shows that as expenses increase, the profit goes down, a strong negative relationship.

The revenue accounts of the 30 insurance companies selected for this research show that the management expenses are on the high side. The percentage of management expenses to the total premium is on average 50% and above, which no doubt has a reducing effect on the net profit of the various companies. Also the uncollected premiums are on the high side despite the government regulation of a “no premium no cover” (insurance decree 2003).

Conclusion

Economy, competition and government regulation have effect on pricing of risk. These findings will have special significance for both the insurance industry policy makers and market competitors. Policy holders can use these findings to develop long term policy strategies for market development.

The research also shows that competition has a significant effect on pricing of risk. Where competition is so stiff, the underwriters may need to reduce or cut rates to be able to survive. They see rate cutting as a survival strategy, this will invariably reduce profit of the company. When the economy is not doing fine, the tendency is for people to stop buying insurance or reduce their patronage, which implies the possibility of insurance companies reducing rate to be able to compete.

The research shows further that the economy is very important when pricing for profitability. The state of the economy is crucial to the purchase and the demand for insurance. The insurance market has long
been subjected to pricing cycles. During the so called soft market, pricing may produce breakeven profitability results or even operating losses for some companies, this is then followed by a hard market economy where insurance prices are relatively high, then pricing falls and a soft market slowly erodes profits.

Economic theory indicates that the companies that will survive are those that have the lowest cost structure. One of the ways of having a lower cost structure is to have lower operating expenses.

Also, government regulation determines the premium to charge. Insurance regulators either encourage profitability, when concerned with solvency, or seek to curtail it, when regulating rates. If it is too low compared with the claim cost, insurers will definitely call for increase of premium from the rating authority. The profit was also regressed over the operation expenses it was observed that they are strongly negatively correlated, which shows that increase in the operation expenses will definitely reduce the profit of the insurance companies.

**Recommendation**

Considering the various factors influencing the pricing of risk to experience maximization of profit in the Nigeria insurance industry, the following recommendations are made.

a. It is crucial to understand and be able to influence consumers’ perceptions of pricing fairness. When prices seem fair, consumers often buy more and are more willing to pay a premium. Conversely, when prices seem unfair, consumers will look for alternative.

b. The insurance companies in the industry should try as much as possible to reduce their operation expenses. It is compulsory that the loss costs and expenses should be controlled as a primary key to profitability.

c. The Insurance regulators should constantly review their rating system to protect the public from incompetent and fraudulent insurers. The regulatory authority must recognize that price competition adversely affecting profit levels of less efficient insurers could lead many to offer inferior products and economize on service.

d. Insurance companies should stay with the regulated price which was arrived at through scientific rating. Undercutting of rates should be avoided as prices plummet downward, the financial soundness of insurance companies weakens. Eventually, operating losses take their toll on the capital stock of the insurance business leading to underwriting losses.

e. These findings will have special significance for both the insurance industry policy makers and market competitors. Policy holders can use these findings to develop long term policy strategies for market development. Also, it was observed that operation expenses is strongly correlated to profitability and should be properly managed.

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