REVIEW: INSURANCE PROFITABILITY: AN ECONOMIC PERSPECTIVE

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INTRODUCTION

Mr. Smith's paper provides a useful basic approach to the entire question of measuring insurer profitability, the premise that insurance profitability must be viewed in the context of optimal resource allocation. Consequently, economic theory provides certain underlying principles which need to be observed when measuring or regulating insurance profitability in order to assure that optimal resource allocation takes place.

In the development of his premise, Mr. Smith reviews the basic economic concepts which allow a determination as to whether or not resource allocation is optimal. Essential to the economic analysis is that under a pure competitive environment, marginal cost, marginal revenue and price are equal in the longrun. The extent to which the concept of marginal cost pricing can apply to insurance pricing is not fully explored, however. Later in this review, I will present some thoughts on how the concept of marginal cost pricing might be applied to insurance pricing and some indications that this concept is being implicitly used currently.

An underlying assumption of Mr. Smith's paper is that profit regulation of insurers might be required in order to simulate true competition since the insurance industry is not characterized by competitive behavior. The comparison of a non-competitive regulated industry which Mr. Smith uses is the utility industry. The comparability of the two industries

and the type of regulation required for each based on analysis of the historical structure and performance of each industry is not developed. This review will therefore briefly address some of the historical bases for regulation of each industry.

Mr. Smith also reviews the various methods of determining a rate of return given that some form of profitability regulation is required. His caveats regarding the difficulty of applying any one of these concepts to insurance pricing are very well taken. I wholeheartedly agree with him that the complexities of the profitability issue are so great that caution in using any single approach of measuring profitability is called for.

PRICE AND MARGINAL COST ANALYSIS FOR INSURANCE PRODUCTS

The economic concept that price equals marginal cost in the longrun under conditions of perfect or reasonable competition is a long established one. The concept has been developed primarily on the basis of manufacturing or trade enterprises. The extent to which this concept can be applied to insurance pricing seems not to have been very widely discussed.

In order to determine the extent to which pricing may in fact be based implicitly upon marginal cost analysis requires that we take a closer look at the three components of the final premium. These three components are loss cost, expense cost and profit, alternatively surplus cost. In order

to ascertain whether the insurance industry is competitive, the extent to which any of these costs vary at the margin should be reflected in the price.

It has generally been assumed that the expected loss cost underlying the premium rate is not subject to a great deal of variation as to a given unit of insurance. Once the loss cost has been adequately estimated, such cost will most likely be the same whether one, a hundered or thousands of that unit of insurance are sold. In contrast, for a manufacturing or trade organization, quantity purchases tend to lead to a reduction in average price, i.e., the purchase of additional units is at a lower marginal cost. On the surface, it appears that such decreasing marginal cost is not true for the loss cost underlying an insurance premium. Consequently, the average pricing that the insurance industry has engaged in for the loss cost component of the premium appears to be based upon the assumption that average loss cost is equivalent to marginal loss cost.

Let us explore the validity of the assumption that average and marginal loss cost are equal under the conditions that anti-selection exists. If anti-selection is prevalent, then the loss cost may in fact be decreasing at the margin since a greater spread of exposure may lead to less anti-selection by the insureds. Underwriting programs of various types recognize this principle by attempting to minimize the adverse impact of anti-selection. Furthermore, the last policyholder issued insurance voluntarily can be expected to have a marginal loss cost equal to the loss cost under-

lying the rate. As soon as that threshhold is exceeded, policyholders will be declined or placed in the involuntary market.

The expense cost associated with a given product also appears to be based only upon the analysis of the overall expense needs of the company for that product. This appearance is probably incorrect. The setting of the expense portion of the premium may very well be based upon an analysis of average cost. However, the behavior of many insurers in attempting to gain market share provides at least an implicit recognition that average expenses will decrease within some range as the volume of insurance sold increases. Consequently, there exists a dynamic interaction between setting the expense portion of the individual premium unit and recognizing that such expense cost will decrease, if more units are sold. As a result, vigorous pursuit of growth in market share leads to a marginal decrease in expense cost. The determination of the average cost actually used is probably influenced by this consideration. Parenthetically, it should be noted that any growth in market share of a substantial magnitude probably implies some lessening of the underwriting standards upon which the loss cost is based. The marginal decrease in expense cost therefore also could be deemed to offset the marginal increase in loss cost.

The profit margin or surplus cost is, except in rare instances, an average % increase over the loss and expense cost. A significant incentive for companies to increase their market share exists because greater potential predictability and consequent lessening of total risk to the company result

from writing more units of insurance (the operation of the law of large numbers). Again, such increase in market share and marginal reduction in surplus cost is generally only accomplished by a relaxation of some other standards. The net result is that the marginal revenue to the company will be less than the average price ostensibly contemplated in the rate structure, but will probably closely approximate the marginal cost of writing the additional unit of insurance considering all elements of the cost.

The existance of the famous underwriting cycle tends to confirm that such implicit analyses do take place in the insurance industry. It must be noted, however, that only when company managers have confidence in the validity of the underlying average loss and expense costs and in the margins for adverse deviation of those costs will they engage in the types of competitive behavior that leads to an underwriting cycle. If the average cost has alreday been set so low that the marginal cost under virtually all conditions will be higher than the average cost, there will be a consequent market restriction and an increase in the various forms of residual market mechanisms. In the context of the foregoing analysis, such a situation indicates that the marginal cost is significantly greater than the price, consequently companies are better off if they reject some risks. Such rejection, of course, is designed to remove indirectly those risks from the companies totals which have a greater perceived marginal cost vis-á-vis the actual price set (average cost). The result is to bring into balance the marginal cost, price relationship of the remaining voluntarily insured risks.

One of the implications of this analysis is that in order for insurance markets to function efficiently, it is more desirable to set a so called quoted price (average cost) that might be higher than otherwise indicated. Such higher price will allow companies to use competitive behavior effectively in clearing the insurance market. The effective price will be driven down to the marginal cost by the depopulation of assigned risk pools and the provision of greater service to policyholders. Alternatively, if the price is set too low, marginal cost higher than price, then the market mechanism cannot function very well because companies can only compete in a negative way by assigning policyholders to the residual market. Furthermore, erring on the low side reduces the companies' capacity for issuing new or more risky types of insurance due to the impairment of surplus. The end result is a further reduction in the potential for true competitive behavior.

The foregoing qualitative analysis indicates that despite appearances to the contrary, insurance pricing probably is based on a recognition of the equality between marginal cost and price. This conclusion suggests that the insurance industry is competitive in its price setting and therefore does not require the type of profit regulation necessary to simulate competitive behavior. Quantitative studies demonstrating the degree to which competitive price setting behavior actually exists would make an interesting topic for another paper.

INSURANCE REGULATION VS. UTILITY REGULATION

Mr. Smith traces some of the history of utility regulation, the types of rates of return allowed and the basis on which those rates are calculated. Prior to contrasting a form of regulation that is appropriate for an acknowledged monopolistic industry with the form of regulation that might be appropriate to the insurance industry, it is instructive to consider the differences in industry structure and in the historical development of the type of regulation that currently exists.

Utilities are regulated because by their very nature, they are a monopoly. The economies of scale are so large that services can best be provided by a monopoly. Consequently, the thrust of utility regulation has been the prevention of monopoly profits. Concurrently, it has been recognized that a sound utility rate base must provide an assurance of adequate performance, i.e., it is catastrophic if services are discontinued or cut back due to lack of funds for adequate maintenance or for construction of sufficient facilities to meet demand.

Insurance industry regulation, in contrast, was principally based on the need to prevent unfettered competition from reducing the price below economic levels and thereby jeopardizing the solvency of the companies. Only in more recent times has insurance regulation attempted to force a lower price than would otherwise be set in some lines that were deemed to be subject to non-competitive behavior. The growth in the various

assigned risk pools of the regulated lines indicates that such an endeavor has generally been misguided.

The underlying premise for profit regulation is that a monopoly does exist, or if not a monopoly, then severe concentration of the market. Alternatively, competition is non-existent because of the promulgation of uniform rates. In examining the insurance industry today, however, it soon becomes evident that previous monopolistic tendencies are being reduced rather than increased.

For instance, many of the major companies no longer adhere to Bureau rates and develop their own rates for most lines of insurance. The entry and exist from the insurance business is relatively easy, as shown by the number of large life insurance companies which have formed property - casualty subsidiaries. Utility companies in contrast do not display any such ease of entry, nor do they vigorously compete against each other.

Even in those lines where theoretically uniform rates are promulgated, competition exists. The major regulated line as to the initial rate quoted a policyholder is Workers' Compensation. The competitive behavior of insurers in this highly rate regulated line consists in part of:

a) the setting and paying of dividends.
b) the amount of service that is provided the policyholder.
c) the extent to which risks are voluntarily written.

d) the extent to which any state funds that exist serve only as an insurer of last resort.

e) the variety of deferred payment plans available to the insured.

In assessing the competitive situation regarding dividends, it is striking how many of the stock companies have formed participating subsidiaries that pay dividends and thereby compete directly against the mutual companies. Furthermore, some of the direct writing companies are currently expanding and offering insurance to the smaller commercial enterprise and directly competing against the established companies.

Given these evidences of competitiveness within the market structure of the insurance industry, a prospective profitability regulation appears unnecessary. To the extent such regulation discourages new entrants to the industry it is counterproductive.

HISTORICAL PROFITABILITY

The various measures of profitability can be used to compare the relative competitiveness of the insurance industry to other industries and can also be used to compare companies in the insurance industry. Due to the ease of entry into the industry, if historical profit levels have been higher for insurance companies than for either other regulated industries or other competitive industries, such difference suggests that insurance is a riskier enterprise. Whether such extra risk is due to the inherent

nature of the insurance product or to the lack of knowledge of the insurance product is immaterial. Furthermore, if such historical profits are truly too high for current conditions, then one could expect the formation of new companies to enter this lucrative market. The competition for the existing business engendered thereby would reduce the future profitability to an economically justifiable level.

Recent studies by the State Rating Bureau of the Massachusetts Insurance Department have indicated that historically, profit levels in automobile insurance have been approximately equal to those the theory developed by Rating Bureau members would suggest were appropriate. Although many problems exist with those Rating Bureau studies, it is difficult to conceive of a better argument than that if an industry achieves profit levels that a theory suggests are appropriate while using pricing concepts which ostensibly do not consider total profitability that any regulation regarding profitability is required.

CONCLUSION

Mr. Smith, in his paper has directed us to examine economic fundamentals before analyzing insurance profitability. This review uses some of the economic fundamentals outlined in the paper and applies them to several areas of insurance operations. The qualitative inference is that application of economic fundamentals demonstrates that by several measures the insurance industry is a competitive industry. Consequently, analysis

of profitability is a useful and instructive exercise, however, profitability regulation is not a required regulatory tool since economic principles require such regulation only in the absence of competition.

Future papers perhaps will address quantitatively some of the economic issues discussed qualitatively in this review. This review could only consider a few of the ramifications of applying economic fundamentals to the issues raised by profitability regulation. Other readers may wish to discuss additional points raised in the paper. In any case, Mr. Smith is to be thanked for reminding us that the debate on insurance profitability needs to rest on a solid foundation of economic principles, for its validity.