TOTAL RATE OF RETURN AND THE REGULATION OF INSURANCE PROFITS

by Irving H. Plotkin

Reviewed by LeRoy J. Simon

Since that fateful day in 1967 when Irving H. Plotkin burst upon the insurance scene[1], the insurance industry has been treated to an awesome swirl of new ideas, concepts and intellectual, as well as operational, challenges. Reactions have ranged from outrage that the hallowed truths of our forefathers should even be questioned, to prompt assimilation because "that's what I've been thinking all along". In between lie the group who struggled to understand, to evaluate, and to reach considered conclusions. Noting that about 50% of the current Fellows of the Casualty Actuarial Society reached their fellowship since 1967, we are passing into the era where we have educated our people as much on "Plotkin-theory" as we have on "1921-theory". I hope this is one of the last times that I will have to read about the evils of the 1921 NAIC profit formula. Resisting the temptation to rationalize or explain, I would only ask where economic theory was in 1921 compared to modern views and in the same breath ask where actuarial theory was as well. As the author says "The pre-tax underwriting profit allowance continues as a useful and even necessary regulatory tool for rate review" but let's not either idolize it as the only measure nor deprecate it as a useful measure.

The author creates two problems for me with the close of his first paragraph. Some readers might feel that the sentence implies that the use of financial economics lies outside the scope of actuarial science. Naturally, it does not. Just as the actuary has needed tools from statistics, mathematics, and the social sciences, so too have we turned to the field of economics when necessary.

[1] Plotkin, Irving H., et al., *Prices and Profits in the Property and Liability Insurance Industry*, Arthur D. Little, Inc., Cambridge, Mass., 1967.

In the 1950's I felt that our Recommendations for Study could contain more in the way of readings in economics and suggested it at the time. Perhaps we need to go further than we are at the present time, but it is always a struggle between breadth of coverage and depth of coverage.

The second problem I have with that sentence is the footnote and the same comments apply to footnote 4. It has always seemed to me that in learned papers, footnotes should cite authoritative sources or add helpful, supporting comments for the reader. To quote an attorney's question (and I have a great deal of respect for David Irons) and an Ibsen play serves no useful purpose to my mind.

One of the greatest lessons that we all learned from the 1967 ADL Study was that a statement concerning a profit ratio is meaningless unless we are absolutely sure that we know the content of the numerator and the content of the denominator. Prior to that time there was only one profit ratio and we all knew what it meant. A parallel situation exists today in that a well-defined profit ratio cannot be proposed as being better than another well-defined profit ratio unless one establishes the purpose to which it is to be put. At one time we only thought there was one purpose (because the All-Industry Bill used a profit ratio as a rate making standard) but now we find there are many purposes to which the result may be put. Further, different purposes may better be served by different measures. For example, when we talk about the price of a given insurance policy on a large commercial risk, we can talk about underwriting profit ratioed to premium with complete understanding as we discuss the case with the client, his broker, or a reinsurer. On the other hand, if I were to discuss the need for more capital from my parent holding company in competition with other

insurance interests within our total organization who are also seeking this additional capital, I would prefer to speak of profit on the basis of all sources of income related to net worth. The paper is aimed at the measurement of insurance profits to compare with other industries' profits and using all sources of income related to the amount of capital invested seems appropriate provided we can overcome some nagging difficulties.

I will have to leave others the measurement of the true risk in other industries, but I am troubled by the measurement of risk in our industry. If the 1903 San Francisco earthquake had occurred in 1973, would our industry be any more risky than present measures imply? Unfortunately we do not have good data back to 1903 so we get a different answer because of this. Perhaps it is impossible to measure potential risk in an industry but I am concerned when a statistical calculation is put forth as the risk measurement and the discussion centers on whether it should be a standard deviation, a variance, or some related function. It would be much more relevant to solve the problem of getting at the real risk in an industry.

Nearing the end of the paper, I felt I had things rather well in hand because "the two main reserve accounts, loss and loss expense reserves and unearned premium reserves, are the equivalent of long-term debt..." and the numerator of the rate of return is "net income plus fixed charges". I also recalled that "...insurance policies are examples of conditional promises to pay (debts)...persons who in essence provide debt capital. The capital they provide contributes to the long-term permanently investable funds in the operation..." In other words, the stockholders provide some of the capital and the policyholders provide other capital. Then the numerator must contain the net income (of the stockholders)

plus the interest on the long-term debt (of the policyholders), right? Up to a point Messrs. Bailey[2] and Plotkin agree but Bailey argues for the additional inclusion of "imputed interest".[3] Mr. Plotkin rebutts by talking about its use in ratemaking rather than its validity in the rate of return measurement. If the steel industry has no "imputed interest" and the insurance industry does, how can one compare the insurance industry with the steel industry in accordance with the author's proposed denominator unless the insurance industry's profit includes this factor? I think Mr. Plotkin readily sees that including "imputed interest" could be a fatal flaw in his proposed basis because it may very well be that the regul ator would force the rate of return so calculated on insurers to the same level as other industries which do not have "imputed interest" and the insurance investor would turn his back on our industry because there would be no profit in it for him. The difficulty is that the buyer of insurance is not consciously making an investment in an insurance company and yet this total capital basis of measurement treats him as a capital supplier. I fear that more work needs to be done on resolving this dilema for I find the Plotkin rebuttal to Bailey unconvincing.

[2]Bailey, Robert A., "A Review of the Little Report on Rates of Return in the Property and Liability Insurance Industry," *Proceedings of the Casualty Actuarial Society*, Volume LVI, 1969, pp. 133-140.

[3]Imputed interest is a technical term of art in economics that goes beyond this reviewer's pre-Plotkin education and Bailey did not give us a suggestion on how to measure it.