Re-Visiting the Principles of Insurance Pricing
Using Modern Economic Valuation Methods

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Abstract

In this paper we re-visit the principles of insurance pricing, using a modern economic valuation framework. We do not seek to explain all asset purchasing decisions; rather we start from the observable fact that individuals hold concentrations of wealth in particular assets, such as their family home, and engage in activities, such as driving cars, that produce concentrations of liability. We then seek to understand what economic valuation models imply about the prices of insurance policies that are designed to mitigate the risks associated with such assets and liabilities.

Our primary conclusion is that for typical insured risks, there will be a range of feasible insurance premiums — where a premium is defined as feasible if it makes entering into the insurance contract value-creating for both policyholders and shareholders. Where in the feasible range premiums will be, or should be, set, will be determined by the level of competition and regulation in the market for insurance policies (the “consumer insurance market”). The existence of this feasible range requires the existence of a positive insurance surplus, the latter being defined here as the difference between the sum of the values placed by consumers upon the policies in a portfolio and the market value of this portfolio. The existence of this surplus relies on two assumptions — firstly, that the risks being insured cannot be offset by securities traded on capital markets (implying that capital markets are incomplete); secondly, that consumers are averse to these risks (in fact to the non-traded components of them).

The existence of this surplus opens the possibility that insurance enterprises could be set up in a manner that improves the lot of both
policyholders and those who provide capital to the insurance enterprise. In the latter part of this paper we investigate the corporate form of the insurance enterprise, showing how to determine the feasible combinations of shareholders’ funds and premium, in the presence of taxes, expenses, and limited liability. The difference between the valuation perspectives of shareholders and policyholders induces a preference for strong levels of capitalisation, in that the surplus attains its highest values at high probabilities of sufficiency. We show that expenses and taxes, which can be viewed as “frictional costs” of this form of risk financing, induce upper and lower bounds on the feasible levels of capitalisation for an insurance company.

We finish with an illustration of how our approach could be applied in practice.