Insurance Pricing and Capitalization in Imperfect Markets

Shaun Yow*
School of Actuarial Studies
Faculty of Commerce & Economics
University of New South Wales
Sydney, Australia
e-mail: shaunyow@people.net.au

and

Michael Sherris
School of Actuarial Studies
Faculty of Commerce & Economics
University of New South Wales
Sydney, Australia
e-mail: m.sherris@unsw.edu.au

For insurers, frictional costs of capital create an important trade-off between the benefits from maintaining financial quality and the costs of holding capital. This thesis develops a single-period economic model of a multiple-line insurer with frictional costs, imperfect insurance markets, and policyholder preferences for financial quality. This model is applied to a large diversified general insurer in order to quantify optimal pricing and capital strategies consistent with the objective of value maximisation. The results of this study demonstrate that frictional costs significantly affect optimal risk management strategies and firm-wide insolvency risk. In particular, increases in taxes and agency costs can lead to an in insurer credit quality, equivalent to a ratings downgrade from AAA to BBB. A comparison with pricing under a typical VaR risk measure and proportional spread method for capital allocation reveals that applications of VaR-based risk measures are inadequate for pricing insurance and not consistent with value maximisation. Finally, the agency costs between shareholders and policyholder are quantified. Results indicate that mutual insurers are socially optimal and shareholder-owned insurers reduce the economic value of policyholder wealth.

* Presenter.