University of Zurich[UZH]

The interdependence among capital requirements, reinsurance usage and performance for property and casualty insurers

Master Thesis

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Abstract

Reinsurance has traditionally been one of the major risk management tools primary insurers use to manage their exposure to underwriting and solvency risks (Shiu (2020)), effectively acting as contingent capital. As such, reinsurance purchase is a capital structure decision and helps insurers to keep an optimal level of underwriting risk relative to their capitalisation level (Cummins, Dionne, and Gagné (2021)), especially in the presence of regulatory risk-based capital requirements. At the same time, the optimal level of underwriting risk reflects the cost of reinsurance, which contributes to determining the insurer's profitability. This thesis aims to understand better and empirically analyse the interdependence between reinsurance, capital and performance measures for U.S. property and casualty insurers. The empirical results of a simultaneous equation model confirm the mutual interactions among capital, reinsurance, and performance. Reinsurance purchase is positively related to capitalisation and vice versa, which is inconsistent with the capital buffer hypothesis. Confirming the pecking order theory, Return on Assets has a statistically significant and positive effect on capital, and a higher Return on Assets reduces the reinsurance usage. The analyses shed some light on the relationship between performance, reinsurance usage and capital.