

Using DEA Approach to Measure the Retention Efficiency of Cross-Strait Non-Life Insurance Companies

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Abstract

This study uses the traditional one-stage data envelopment analysis (DEA) method and a two-stage DEA method to measure the retention efficiency of 36 cross-strait (i.e., those operating in Taiwan and Mainland China) non-life insurance companies in the 2008–2013 period. The one-stage DEA results show that the average retention efficiency of companies in Taiwan is better than that of companies in Mainland China, under the traditional one-stage DEA method. By contrast, under the two-stage DEA method, we find that in the second stage, the average retention efficiency of companies in Mainland China is better than that of companies in Taiwan. However, in the first stage, the average marketing efficiency of companies in Taiwan is also better than that of companies in Mainland China. This study uses a Tobit regression model to examine the factors that significantly influence the retention and marketing efficiencies. Results reveal that the retention efficiency is significantly influenced by written premiums and the ratio of retained premiums and marketing efficiency is significantly influenced by time since establishment and the ratio of non-automobile insurance.

Keywords: DEA, efficiency, marketing, retention, Tobit regression

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運用 DEA 法評估兩岸產險業之自留業務效率

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摘 要

本論文運用傳統一階段及兩階段資料包絡分析法，衡量兩岸 36 家產險公司 2008 年至 2013 年期間之自留業務效率。研究結果發現在傳統一階段資料包絡分析法中，臺灣整體的自留業務效率值高於大陸。惟若改用兩階段資料包絡分析法進行評估時，則顯示第一階段的行銷效率值臺灣雖然高於大陸，但在第二階段的自留業務效率值，則大陸優於臺灣。此外，本論文亦運用 Tobit 迴歸方法探討影響上述效率值之關鍵因素，採用的變數包括公司成立時間長短、簽單保費收入、教育程度大學以上比率、專業人員比率、非車險業務比率、金控與否及自留比率等七項自變數。結果發現，顯著影響行銷效率之因素為成立時間長短及非車險比重；顯著影響自留業務效率之因素則為簽單保費和自留保費比率。

關鍵字：產險業、自留業務、經營績效、資料包絡分析法、Tobit 迴歸

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