

Evaluating traditional, dynamic and network business models: An efficiency-based study of Chinese insurance companies

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ABSTRACT

Data envelopment analysis (DEA) is extensively adopted to evaluate the relative efficiencies of a group of insurance companies from a multidimensional perspective. Selecting an appropriate DEA framework for insurance businesses, however, remains ambiguous. We use the slack-based measure (SBM) models in DEA to evaluate insurance efficiencies from four perspectives, namely, SBM, network SBM (NSBM), dynamic SBM (DSBM), and dynamic network SBM (DNSBM) frameworks. We present the applicability of DEA to 32 unique companies operating in the Chinese insurance industry over the sample period 2014–2018. Through analyses, we highlight key DEA results and related constraints in reaching the most appropriate performance benchmarks for evaluating insurance companies' efficiencies. We find that building a network structure for insurance efficiency evaluation is necessary because of the superiority of NSBM and DNSBM results over those of the conventional SBM and DSBM models. After including dynamic effects, we find consistent results in the divisional and overall efficiencies. Overall, this study provides insight for insurance companies to implement more efficient and effective ways to evaluate their performances in terms of profitability and investment in a challenging business environment.

KEYWORDS

Business model; Data envelopment analysis; Dynamic model; Efficiency; Insurance; Network model

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