PERFORMANCE EVALUATION OF LIFE INSURANCE COMPANIES IN INDIA: AN APPLICATION OF DEA MODEL

Sumninder Kaur Bawa[1] and Nidhi Bhagat[2]

Last few years have seen insurance re-evaluating their operating models, modifying products to bring them in line with new regulations, increasing their focus on customer needs and being more efficient. The issue of efficiency is the key concern in the insurance sector. Efficiency measurement helps to identify the inefficient and efficient insurers in the market to improve competition, profitability and confidence of the policyholders and the way to improve the performance of the life insurers. For this reason, an attempt has been made to measure the performance efficiency of life insurance companies in India with the help of Data Envelopment Analysis. The efficiency of twelve life insurance companies in India has been measured during the period of 2008-09 to 2012-13. Variables taken for the study include equity capital and labor (Commission Expenses) as inputs and net premium as output.

Key words: Data Envelopment Analysis, Efficiency, Life Insurance

INTRODUCTION

Insurance is a risk transfer mechanism whereby the individuals or the business enterprise can shift some of the uncertainties of life on the shoulder of the other. All the people will desire to live a cleaner, healthier and comfortable life. A small error or lapse may cause many side effects and cause death or disability.

To meet this requirement different enterprises(especially insurance companies) produce and provide goods and services, make innovations and inventions, while assuming far greater risk.In India, insurers in general and LIC in particular act as a major financial intermediary and contribute to the development of savings and capital market. Life insurance is a long-term and capital intensive business with a long break-even period, about a decade or so. Most private players have accumulated losses, not due to

---

[1] Assistant Professor, University Business School, Guru Nanak Dev University, Amritsar, Punjab.
[2] Research Fellow, University Business School, Guru Nanak Dev University, Amritsar, Punjab.

inefficiency but due to the nature of this business. Over the past few years the Indian life insurance industry has undergone de-growth and market consolidation despite being one of the top 10 insurance markets in the world. India, given its demography, has always been an attractive market for global insurers who have always been keen to expand their business in the country. The FDI limit for insurance in India is among the lowest globally. China, Indonesia and Malaysia have an FDI limit of 50, 80 and 51 per cent respectively. Japan, South Korea, Vietnam, Hong Kong and Taiwan allow 100 per cent FDI. Insurance education helps a consumer to understand their needs and risks, ascertain availability of insurance for managing risks, appreciate their value of possessing an insurance product and to know about the do's & don'ts before and after purchase of an insurance policy (IRDA Annual Report 2012-13)[i]. IRDA, as insurance sector regulator, has been playing a pro-active role in promoting insurance education since its inception and has adopted multi-pronged approach to enhance consumer awareness on various tenets of insurance. IRDA's strategy of publicity and consumer education has been encompassing both in-house programmes and supporting/sponsoring external programmes and encouraging all stakeholders to promote insurance awareness among the public by stepping up its efforts for insurance education.

REVIEW OF LITERATURE

Aleng (2013) measured the relative efficiency of 13 life insurance companies in Malaysia from 2007 to 2009. Study used SFA to panel data which includes variable like total profits of the company, net investment income, total liabilities and assets of the company, management expenses, annual premium, net claims paid by the company. The positive improvement show that the insurance industry has been in high demand among the people. According to the rank of efficiency included in the study will help people in selecting and evaluating life insurance companies that have good performance and also help management and administration of insurance firms involved in marketing and improves the weaknesses such as formulating business strategy to attract customers who can benefit the firm. **Barros & Obijaku** (2007) analyzed the technical efficiency of ten Nigerian insurance companies with aid of four DEA models DEA-CCR, DEA-BCC, Cross efficiency DEA model, super efficiency DEA model. The DEA-CCR and BCC model were strong in identifying efficient units but they could not discriminate between the inefficient units, so to overcome this deficiency cross efficiency DEA model was used. Insurance production was measured according to generalized Cobb-Douglas production function. Outputs were net premium, settled claims, outstanding claims, investment income. Inputs were total capital, total operative costs, total number of employees, total investment. Results found that Nigerian companies were managed with pure technical efficiency and for technically inefficient insurance companies; there is room to upgrade their efficiency level by means of reference to the frontier of best practice. **Bikker and Leuvenstey** (2008) investigated efficiency and competitive behavior of the Dutch Life insurance market by using Translog Cost Function (TCF). To measure the competition, they have used four different empirical aggregate indicators i.e. average profit margins, scale economies, X-inefficiencies, and the boon indicator. The results proved that supplier power is limited due to large number of insurance firms and consumer power is limited due to opaque nature of many life insurance products. Secondly, competitive pressure in the insurance market has so far been insufficient to force insurance firms to exploit these existing scale economies. **Chen, Power and Qiu** (2009) evaluated the efficiency of life insurers operating in china and compared foreign firms with domestic firms. The basic idea of DEA is to construct a frontier that reflects optimal production. Output indicators used in the study were annuity; savings related life and health and invested assets. Inputs were equity capital, number of employees and agents, material and other related costs. Results concluded that foreign insurers tend to manifest greater efficiency than domestic insurers and therefore must increase their efficiency in Chinese market. Foreign insurers should focus on scale economy for future development. Controlling inputs, as opposed to outputs is more important for inefficient insurers. In short greater competition caused mainly by the entry of foreign insurers likely caused both increased and decreased in firm efficiency. **Nandi (**2014) evaluated relative efficiency of 13 life insurance companies with the help of DEA for the period of 2002-03 to 2011-12. Two basic DEA models namely CCR- for constant returns to scale and BCC for Variable returns to scale have been applied to estimate the relative efficiency. Results showed that life insurers carrying life business at an average technical efficiency of 82.6 %, pure technical efficiency 87.5 % and scale efficiency of 94.7%. Moreover they have found diverse trends of improvement direction and space over a period of time. **Rahman** (2013) analyzed the sources of efficiency and technical changes in both life and non-life Takaful companies in Bangladesh by using Non-Parametric approach of DEA together with Malmquist Index. Study isolate the contributions of technical change, efficiency change the pure and the scale changes to total factor productivity growth of different life and non life Takaful operators in Bangladesh. The data of 17 companies 3 Takaful life operators and 10 life insurers has been considered for efficiency analysis in this study. Inputs taken for the study was commission expenses and outputs were premium and net