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Evaluating cost efficiency and returns to scale in the Life Insurance Corporation of India using data envelopment analysis[☆]

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Abstract

This paper applies a new variant of data envelopment analysis model to examine the performance of Life Insurance Corporation (LIC) of India. The findings show a significant heterogeneity in the cost efficiency scores over the course of 19 years. A decline in performance after 1994–1995 can be taken as evidence of increasing allocative inefficiencies arising from the huge initial fixed cost undertaken by LIC in modernizing its operations. A significant increase in cost efficiency in 2000–2001 is, however, cause for optimism that LIC may now be realizing a benefit from such modernization. This will stand them in good stead in terms of future competition. Results from a sensitivity analysis are in broad agreement with the main findings of this study.

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Keywords: LIC; DEA; Technical efficiency; Returns to scale; Economies of scale

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1. Introduction

Life Insurance Corporation of India (LIC) was formed on September 1, 1956 with a capital contribution of 5 crore¹ of rupees² from the Government of India. Since nationalization, the life insurance business in India has been coterminous with the state-owned LIC. It has played a dominant role in the economic development of the country in two ways. First, as a life insurer, it has served to pool and distribute life-risks associated with the millions of earners (policy holders). Life insurance has thus provided the twin purpose of economic and social security umbrellas to the millions of households, especially to rural poor and senior citizens (in terms of providing saving for old age). Second, as a major savings institution, LIC has been a dominant financial intermediary, channeling funds to productive sectors of the economy; mostly financing government sponsored planned development programs [1].

Since its inception, LIC has grown in many folds. Its new business (individual) in terms of sum assured has risen from Rs. 283.07 crore in 1957 to Rs. 1,24,950.63 crore in 2000–2001, in terms of number of individual policies, it has increased from 8.16 lakh³ to 196.65 lakh, reflecting more than 15% average annual growth in the post-1980s. Another key indicator of growth, individual business in force in terms of sum assured, grew from approx. Rs. 1473 crore in 1957 to Rs. 6,45,042 crore in 2000–2001.

Notwithstanding the phenomenal growth of LIC and its efforts to diversify, the life insurance business in India falls far below that in developed countries [2]. For instance, as per estimates reported by Swiss Reinsurance Company [3], insurance penetration in India in 1997 was 1.39% compared to 9.42% in Japan, while insurance density in the same year was \$5.4 vs. \$3092 in Japan. Further, the performance of LIC has come under close scrutiny with regard to its operational efficiency [4], especially financial performance [1]. Opening up of the Indian insurance sector to both domestic private and foreign companies has been at the center of policy debate alongside financial sector reforms as part of the macroeconomic stabilization-cum-structural adjustment programs initiated in 1991.

Despite this history, insurance sector reforms in India had to wait until the end of year 2000 due to contentious and politically charged debate over the pervasive implications of privatization and foreign participation in the sector. See Rao [5] and Ranade and Ahuja [6] for a detailed discussion of the likely implications of privatization and foreign participation in the life insurance sector, including regulatory related issues. After a prolonged stalemate, following the recommendations of an official committee—Committee on Reforms in Insurance Sector, popularly known as Malhotra Committee 1996, which recommended privatization and foreign participation in the insurance sector, the Insurance Regulatory and Development Authority (IRDA) issued licenses to 11 life insurers and six non-life insurers by end of year 2000.

Against this backdrop, it is of interest to examine the performance of LIC over time. It would surely be more useful to examine its performance vis-à-vis other private insurers. But, for the fact that insurance sector deregulation started at the end of year 2000 only, the domestic private and

¹1 crore = 10 million.

²Rupee is the Indian currency, and is denoted as 'Rs.'. US\$1 Rs. 46.50.

³1 lakh = 0.1 million.

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