Chapter 21
Performance Benchmarking of the Indian Life Insurance Industry: A Unified Approach

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ABSTRACT
In the last decade, the life insurance companies operating in India have made significant progress in terms of business consolidation. In view of the same, it is of interest to make an enquiry about the operating performance of these companies. This chapter compares 15 life insurance companies operating in India from the period 2005-06 to 2008-09 using the Hybrid Efficiency Model (Tone, 2004). The Hybrid Model provides a unified framework for the estimation of technical efficiency integrating the radial and non-radial characterisation of inputs and outputs. Out of the 15 in-sample life insurance companies, the number of technically efficient life insurers declined from 9 in 2005-06 to 4 in 2006-07 and further to 3 in 2007-08 and 2008-09. The mean technical efficiency scores of the in-sample life insurers declined sharply between 2005-06 and 2006-07 and improved somewhat thereafter.

INTRODUCTION
Since 1956, life insurance business in India was a state monopoly as the state owned Life Insurance Corporation of India had the sole right providing insurance coverage. However, economic reforms in India initiated in the early 1990s saw the liberalisation of insurance business become an integral part of the government’s policy agenda. In 1993, the Central Government constituted a Committee under the Chairmanship of Shri R.N. Malhotra to suggest the roadmap for insurance sector reform. The Committee submitted its report in 1994 in which it favoured a gradual liberalisation of insurance business in India,

DOI: 10.4018/978-1-4666-4474-8.ch021
segregation of non-life and life business and the introduction of prudential solvency based regulation of
the insurance sector. In 1999 an Insurance Regulatory Authority Act was promulgated for creating the
necessary regulatory framework. The new regulator, Insurance Regulatory and Development Authority
(IRDA) took office at the same time to oversee and regulate the market. Following the opening up of
the insurance sector, the sector has had significant expansion which is evidenced by the fact that the
total premium collected by the sector grew from Rs 1058760 million in 2005-06 to Rs 2217910 million
in 2008-09.

Against this backdrop, the present paper compares fifteen life insurance companies operating in India
for the period 2005-06 to 2008-09 using a non-parametric approach that applies a unified framework for
the estimation of technical efficiency of the life insurance companies operating in India.

ORGANISATION OF THE CHAPTER

The paper proceeds as follows. Section 1 discusses the methodological issues relating to the measure-
ment of efficiency. Section 2 discusses the received literature on the efficiency studies relating to the
life insurance sector. Section 3 discusses the approach of the paper and states the results available from
the present study. Finally, section 4 provides the summary of the findings.

SECTION 1: COMPARISON OF PERFORMANCE:
THE METHODOLOGICAL ISSUES

Productive efficiency of a productive unit can be measured by comparing its performance with the best
practice unit in the industry following the same technology. Technical efficiency is typically measured
in terms of technical efficiency. There are, however, two major alternative approaches towards defining
technical efficiency: the Pareto-Koopmans approach and the Debreu-Farrell approach:

- **The Pareto-Koopmans Approach:** As per Koopmans (1951), a producing firm is technically ef-
cient if an increase in any output necessitates a reduction in at least one other output or a increase
in at least one input, and if a reduction in any input necessitates an increase in at least one other
input or a reduction in at least one output. This approach is called Pareto-Koopmans approach
because of its Paretian implication.

- **The Debreu-Farrell Approach:** This approach provides a radial measure of efficiency. This ap-
proach has developed due to two seminal papers by by Debreu (1951) and Farrell(1957) For out-
put maximisation, the Debreu-Farrell measure is defined as 1-q, where q is the maximum equi-pro-
portionate expansion in all outputs with given input. For input minimisation, the Debreu-Farrell
measure is 1-c where c is the maximum equi-proportionate reduction in all inputs. A score less
than unity (i.e. 1-q<1 or 1-c<1) implies that the firm is technically inefficient.

Estimation of Technical Efficiency

Estimation of technical efficiency (in the production approach) requires construction of production fron-
tier because efficiency is computed by measuring the distance of an observed point from an idealized
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