

**TECHNICAL AND ALLOCATIVE EFFICIENCY OF
INDIAN BANKS**



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भा. प्र. सं. इन्दौर
IIM INDORE

By

Piyush Kumar Singh

A Doctoral Dissertation Submitted in Partial Fulfillment of the
Requirements for the

Fellow Programme in Management

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Thesis Advisory Committee:

Prof. V.K. Gupta

(Chair)

Prof. Keyur Thaker

(Member)

Prof. Arun Kumar

(Member)

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Abstract

In India, dynamic and competitive banking environment, coupled with sectorial reforms, provides an interesting setting to examine the efficiency of banks. This study attempts to analyse the technical and allocative efficiency of Indian banks during 2008-2012 to offer an understanding of the operational efficiency and trends during the period. The extant literature suggests that conventional ratio-based performance measures are inadequate to address the different issues related to the scope of activities of modern banking, viz. resource allocation, optimal strategy selection, inefficiencies associated with cost and the revenue side of banking operations. Sophisticated performance measurement techniques would be required to provide useful insights about the effectiveness, efficiency and stability of the banks. Hence, to examine the importance of these aspects for Indian banks, this study employs frontier approach to estimate different efficiencies.

We use Data Envelopment Analysis (DEA), a non-parametric, mathematical programming technique, to estimate technical and profit efficiency (PE) of 66 Indian banks (26 public, 19 private and 21 foreign banks). A two-stage approach is applied to estimate and validate the results of technical efficiency under different scales of economics i.e. Constant Returns of Scale (CRS) and Variable Returns of Scale (VRS). In the first stage, DEA is employed to estimate overall technical efficiency (OTE), pure technical efficiency (PTE) and scale efficiency (SE), under both scales of economics. In the second stage, cross validation and value judgment analysis are conducted to examine the importance of different operational variables in banking efficiency. Finally, profit efficiency is estimated by employing DEA at VRS. The study reinforces the use of DEA for measurement of the operational efficiency of Indian banks to investigate the contribution of various input and output variables. Results

indicate that small public sector banks reported higher OTE scores than larger public sector banks, while large and small private sector banks reported improvement on OTE scores over the study period. On the contrary, small and large foreign banks reported decreasing OTE scores after 2008 and 2009. No significant change is observed in PTE scores of small and large public sector banks. Unlike public sector banks, private banks yield heterogeneity in PTE scores and small foreign banks reported a trend of decreasing PTE scores. Further results show that large public sector banks had better scale efficiency as compared to small public sector banks. SE scores of large and small foreign bank decreased during the study period. Finally the study reports that large public, private and foreign sector banks were more profit efficient than small and medium banks in their respective groups. This study provides a better understanding of different operational efficiencies, ie. OTE, PTE, SE and PE, of Indian banks during 2008-2012. The value judgement and cross validation analysis provide different perspectives in banking operations. The outcomes point towards different ways of managing bank resources for improving efficiency of operations in terms of both input (cost) and output (revenue). Further, it stresses the importance of different variables in banking operations and their impact on operational efficiency.

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