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Analysis of Operational Efficiency in Indian Banks: A Comparative Study

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Abstract

Many firms in the service industry face the problem of disparate results in terms of efficiency. This problem is a cause of concern for many big organizations such as banks, hotels, courier companies, and so on. In particular, the last decade has witnessed continuous changes in regulation, technology and competition in the global financial services industry, and Indian banks are no exception. Rising cost-income ratios and declining profitability reflect increased competitive pressure. To assess the stability of the banking system, it is therefore crucial to benchmark the performance of banks operating in India. An efficient banking system contributes in an extensive way to higher economic growth in any country. Thus, studies of banking efficiency are very important for policy makers, industry leaders and many others who are reliant on the banking sector. The present study investigates the technical efficiency of Indian banks, segmented in terms of ownership. For this purpose, the data envelopment analysis (DEA) model was used with five input variables (viz. borrowings, deposits, fixed assets, net worth, and operating expenses) and four output variables (advances & loans, investments, net interest income, and non-interest income), and the efficiency scores were calculated for a sample of forty-nine major banks operating in India. Key Words: financial services, banking efficiency, data envelopment analysis (DEA), technical efficiency, Borrowings, Deposits.

1. INTRODUCTION

Wide-ranging reforms covering industry, trade, taxation, external sector, banking and financial markets have been carried out in the Indian economy since mid-1991. A decade and a half of economic and financial sector reforms has strengthened the fundamentals of the Indian economy and transformed the operating environment for banks and financial institutions in the country. The sustained and gradual pace of reforms has helped avoid any crisis and has actually fuelled growth. The most significant achievement of the financial sector reforms has been the marked improvement in the financial health of commercial banks in terms of capital adequacy, profitability and asset quality as also greater attention to risk management. Further, deregulation has opened up new opportunities for banks to increase revenues by diversifying into investment banking, insurance, credit cards, depository services, mortgage financing, securitization, and so on. At the same time, liberalization has brought greater competition among banks, both domestic and foreign, as well as competition from mutual funds, NBFC's, and other financial institutions. Increasing competition is squeezing profitability and forcing banks to work efficiently on shrinking spreads. Because banks still play an important role in the financial market, it is important to evaluate whether banks

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operate efficiently. In order to compete with other financial institutions, banks must increase their levels of efficiency.

Many emerging economies that adopted financial deregulation policies are now experiencing competitive banking practices. India is no exception, and as an emerging market is becoming a competitive and important market not only for financial products but also for other products. Indian banking is a considerable component in Asian financial affairs and has not been subjected to substantial research compared to the countries in the developed world. The Indian banking system is still dominated by the public sector banks, and the issues of performance and efficiency have emerged to be the touchstone for the success of such banks. There is an emerging need to develop a comprehensive framework for measuring their efficiency in transforming their resources for better performance. Such type of performance benchmarking has become extremely relevant for their success.

2. LITERATURE REVIEW

Several studies have addressed the question of bank efficiency, especially in developed economies; in contrast, studies analysing the efficiency of banks in emerging economies such as India are far fewer. However, the literature on the restructuring and development of the financial sector in the transitional economies and emerging markets are abundant. Ownership issues, especially the impact of the entry of foreign banks in transitional economies, are most documented. These studies generally find evidence that ownership matters. Buch (1997) asserts that foreign-owned banks use modern technology from and rely on the human capital of their parent banks, so that they would be expected to perform better than government-owned or domestic private banks in transitional economies. On similar lines, private banks would be expected to perform better than government-owned banks.

Some recent studies focus on the relationship between ownership and bank performance in some Eastern European economies. Kraft and Tirtiroglu (1998) used stochastic frontier analysis (SFA) to examine the bank efficiency in Croatia in the mid-1990's and found that the newlyorganized private banks were more efficient relative to older state institutions. Jemric and Vujcic (2002) used data envelopment analysis (DEA) to analyze bank efficiency in Croatia in the late 1990's and found that foreign banks and new banks are more efficient. Nikiel and Opiela (2002) used distribution-free efficiency estimation for Polish banks in the late 1990's and found that foreign banks servicing foreigners and business customers are more cost-efficient but less profitefficient than other banks in Poland. Isik and Hassan (2003) examined the Turkish commercial banks during the deregulation period and found that the Turkish private banks began to close their gap with those public banks in the new environment. These studies suggest a positive relationship between foreign ownership and bank performance. Further, several studies on banking in transitional economies suggest relatively strong competitive effects of foreign bank entry. Claessens et al. (2001) investigated performance differences between domestic and foreign banks in eighty countries, both developed and developing, from late-1990's to mid 2000's and found that foreign bank entry was generally followed by a reduction in both profitability and the overhead expenses of domestic banks, suggesting that foreign participation improves the efficiency of domestic banking.

There have been several studies analyzing bank efficiency in India. In some studies, bank efficiency was measured by a number of financial indicators and compared over various categories of banks. Sarkar et al. (1998) compared public, private and foreign banks in India to find the effect of ownership type on different efficiency measures. Rammohan (2002, 2003) also used financial measures for comparing operational performance of different categories of banks over a period of time. However, most of the studies which look at the efficiency of Indian commercial banks concentrate on cost, profit, income or revenue efficiencies, using DEA as a technique of analysis. While few studies concentrate on the efficiency of only public sector banks, others look at the relationship between ownership and efficiency.

Bhattacharya et al (1997) used DEA to measure the productive efficiency of Indian commercial banks in the late 1980's to early 1990's and to study the impact of policy of liberalizing measures taken in 1980's on the performance of various categories of banks. They found that the Indian public sector banks were the best performing banks, as the banking sector was overwhelmingly dominated by the Indian public sector banks, while the new private sector banks were yet to emerge fully in the Indian banking scenario.

Kumbhakar and Sarkar (2003) found evidence on Indian banks that while private sector banks have improved their performance mainly due to the freedom to expand output, public sector banks have not responded well to the deregulation measures.

Shanmugam and Das (2004) studied banking efficiency using stochastic frontier production function model during the reform period, 1992-1999. The study considers four input variables (viz. deposits, borrowings, labor and fixed assets) and four output variables (viz. net interest income, non interest income, credits and investments). They found that deposits are dominant in producing all outputs and the technical efficiency of raising interest margin is varied across the banks. In particular, they found that the reform measures that had been introduced since 1992 have not helped the banks in raising their interest margin. Also, in general, they found that private/foreign banks performed better than public banks.

The present study was undertaken to compare the efficiency of public, private, and foreign banks operating in India, from the viewpoint of control systems, to identify the critical factors affecting the efficiency of banks, and to analyze the gap between efficient and inefficient banks. The study has employed the data envelopment analysis (DEA) model to analyze the efficiency of banks, and to identify critical factors affecting the efficiency of banks.

3. DATA & METHODOLOGY

The data for the study pertained to a sample of forty-nine banks operating in India, of which twenty were public sector banks, nineteen were private banks, and ten were foreign banks. The sample was a convenience sample, containing most of the major banks operating throughout India. The data was obtained from the financial statements of the sample banks for a five-year period 2003-08 from the Capitaline database.

Various researchers have used data envelopment analysis (DEA) to evaluate bank performance. DEA is a technique to assess the efficiency of production units (in this case, the banks) relative to a set of similar units operating in the same business environment (here, the banking industry). It can identify the benchmark units in comparison to the peers to determine the best practice. A bank is said to be technically efficient if it produces more outputs using less input resources. In particular, there are several different approaches of measuring output, usually classified into two broad approaches: the production approach and the intermediation approach. The production approach, initiated by the contribution of Benston (1964) and Bell and Murphy (1968), describes banking activities as the production of services to depositors and borrowers, wherein output is measured by the number and type of transactions or accounts (both deposit and loan) and inputs used are only physical units (such as labor and capital), since only physical inputs are needed to provide financial services. Under the intermediation approach, financial institutions are thought of as primarily intermediating funds between savers and investors, wherein the inputs of the bank are essentially financial capital (i.e. the deposits collected and the funds borrowed from financial markets and their interest cost), and outputs are measured by the volume of loans and investments outstanding. It has been generally suggested by a number of writers that a researcher can adopt any measure of output for the financial firm as long as the measure is consistent with the researcher's goals (Sealey and Lindley, 1977).

Along with an efficiency index, the results of the DEA indicate which inputs and output constraints are tight, and which are not. In the context of an efficient bank, a tight input constraint indicates an input which is properly utilized for a given level of

outputs, i.e. any reduction in the input would not allow the bank to maintain its present level of outputs; while an input constraint that is not tight indicates an input which is underutilized or improperly utilized (or underproductive). In the context of an inefficient bank, a tight input constraint indicates a "best-utilized" input, though not properly utilized; in fact, in the case of an inefficient bank, all inputs are underutilized. On the other hand, in the context of an efficient bank, a tight output constraint indicates an output which is "just-sufficiently" produced for a given level of inputs; while an output constraint that is not tight indicates an output that is over-produced for the given level of inputs. In the context of an inefficient bank, a tight output constraint indicates an output that is under-produced for the given level of inputs; while an output constraint that is not tight is generally difficult to interpret (may or may not be over-produced for the given level of inputs). Of particular interest are the properly-utilized and under-utilized inputs of efficient banks, and the under-produced outputs of inefficient banks.

The present study adopts an intermediation approach. Five input variables are considered, viz. borrowings, deposits, fixed assets, net worth, and operating expenses, while four outputs are considered, viz. advances and loans, investments, net interest income, and non-interest income. The objectives of the study are to measure the efficiency of banks using data envelopment analysis, to determine the tight inputs and outputs for the banks, and to analyze differences in efficiency and tight inputs and outputs between public, private and foreign banks.

4. ANALYSIS & INTERPRETATION

Efficiency Analysis for the year 2003-04 : It was found that 89.8% of the sample banks were efficient, and 10.2% of the sample banks were inefficient. The sample banks that were found to be inefficient were: Axis Bank, Development Credit Bank, IndusInd Bank, Kotak Mahindra Bank Ltd., and BNP Paribas. Also, 100.0% of public banks, 78.9% of private banks, and 90.0% of the foreign banks were efficient.

For the efficient foreign banks, it was found that deposits were the only properly-utilized inputs, while net worth and operating expenses were under-productive inputs. For the efficient private banks, borrowings and deposits were properly-utilized, while fixed assets and operating expenses were under-productive inputs. Finally, for the efficient public banks, borrowings were properly-utilized, while none of the inputs were under-productive.

For the inefficient foreign banks, advances & loans, investments, and non-interest income were under-produced outputs. For the inefficient private banks, advances & loans were the only under-produced outputs.

Table-1
Efficiency Analysis for the year 2003-04

	Foreign	private	public
%age efficient banks	90.00%	78.90%	100.00%
Efficient Banks			
Borrowings	55.60%	**86.70%**	**75.00%**
Deposits	**66.70%**	**80.00%**	45.00%
Fixed assets	55.60%	33.30%	45.00%
Net worth	22.20%	46.70%	55.00%
Operating expenses	11.10%	33.30%	40.00%
Inefficient Banks			
Advances & loans	**100.00%**	**100.00%**	NA
Investments	**100.00%**	50.00%	NA
Net interest income	0.00%	25.00%	NA
Non-interest income	**100.00%**	50.00%	NA

Efficiency Analysis for the year 2004-05 : It was found that 79.60% of the sample banks were efficient, and 20.4% of the sample banks were inefficient. The sample banks that were found to be inefficient were: Bank of Baroda, Bank of Maharashtra, Dena Bank, Oriental Bank of Commerce, Vijaya Bank, Axis Bank, Federal Bank, Jammu & Kashmir Bank, Karnataka Bank, and Bank of Rajasthan. Also, 75.0% of public banks, 73.7% of private banks, and 100.0% of foreign banks were efficient.

For the efficient foreign banks, it was found that deposits were the only properly-utilized inputs, while net worth was an under-productive input. For the efficient private banks, borrowings and deposits were properly-utilized, while fixed assets and

operating expenses were under-productive. Finally, for the efficient public banks, borrowings, deposits, and net worth were properly-utilized, while fixed assets were an under-productive input.

For the inefficient private banks, advances & loans and investments were under-produced outputs. For the inefficient public banks, investments were the only under-produced outputs.

Table-2
Efficiency Analysis for the year 2004-05

	Foreign	private	public
%age efficient banks	100.00%	73.70%	75.00%
Efficient Banks			
Borrowings	60.00%	**85.70%**	**80.00%**
Deposits	**80.00%**	**85.70%**	66.70%
Fixed assets	40.00%	21.40%	26.70%
Net worth	30.00%	57.10%	**66.70%**
Operating expenses	40.00%	14.30%	46.70%
Inefficient Banks			
Advances & loans	NA	**100.00%**	60.00%
Investments	NA	**80.00%**	**100.00%**
Net interest income	NA	0.00%	60.00%
Non-interest income	NA	60.00%	20.00%

Efficiency Analysis for the year 2005-06 : It was found that 83.7% of the sample banks were efficient, and 16.3% of the sample banks were inefficient. The sample banks that were found to be inefficient were: Bank of Baroda, Corporation Bank, Oriental Bank of Commerce, Federal Bank, IndusInd Bank, Karnataka Bank,

DBS Bank Ltd, and Standard Chartered Bank. Also, 85.0% of public banks, 84.2% of private banks, and 80.0% of foreign banks were efficient.

For the efficient foreign banks, it was found that borrowings and deposits were properly utilized inputs, while net worth and operating expenses were under-productive inputs. For the efficient private banks, borrowings were the only properly-utilized inputs, while fixed assets and operating expenses were under-productive inputs. Finally, for the efficient public banks, borrowings were properly-utilized, while none of the inputs were under-productive.

For the inefficient foreign banks, net interest income was the only under-produced output. For the inefficient private banks, advances & loans and investments were the under-produced outputs. For inefficient public banks, advances & loans and net interest income were the under produced outputs.

Table--3
Efficiency Analysis for the year 2005-06

	Foreign	private	public
%age efficient banks	**80.00%**	**84.20%**	**85.00%**
Efficient Banks			
Borrowings	**62**.50%	**87.50%**	**82.40%**
Deposits	**75.00%**	56.30%	41.20%
Fixed assets	50.00%	25.00%	41.20%
Net worth	37.50%	50.00%	47.10%
Operating expenses	25.00%	37.50%	52.90%
Inefficient Banks			
Advances & loans	50.00%	**100.00%**	**100.00%**
Investments	50.00%	**100.00%**	33.30%
Net interest income	**100.00%**	0.00%	**66.70%**
Non-interest income	50.00%	33.30%	33.30%

Efficiency Analysis for the year 2006-07 : It was found that 93.9% of the sample banks were efficient, and 6.1% of the sample banks were inefficient. The sample banks that were found to be inefficient were: Corporation Bank, Federal Bank and Karnataka Bank. Also, 95% of public banks, 89.5% of private banks, and 100.0% of foreign banks were efficient.

For the efficient foreign banks, it was found that deposits and fixed assets were properly utilized inputs, while borrowings and net worth was under-productive inputs. For the efficient private banks, borrowings, deposits, and net worth were properly-utilized, while fixed assets and operating expenses were under-productive. Finally, for the efficient public banks, borrowings were the only properly-utilized input, while fixed assets and operating expenses were underproductive inputs.

For the inefficient private banks and inefficient public banks, advances & loans and investments were under-produced outputs.

Efficiency Analysis for the year 2007-08 : It was found that 89.8% of the sample banks were efficient, and 10.2% of the sample banks were inefficient. The

Table--4

Efficiency Analysis for the year 2006-07

	Foreign	private	public
%age efficient banks	**100.00%**	**89.50%**	**95.00%**
Efficient Banks			
Borrowings	30.00%	**82.40%**	**84.20%**
Deposits	**80.00%**	**64.70%**	31.60%
Fixed assets	**60.00%**	23.50%	47.40%
Net worth	20.00%	**64.70%**	52.60%
Operating expenses	25.00%	29.40%	36.80%
Inefficient Banks			
Advances & loans	NA	**100.00%**	**100.00%**
Investments	NA	**100.00%**	**100.00%**
Net interest income	NA	0.00%	0.00%
Non-interest income	NA	50.00%	0.00%

sample banks that were found to be inefficient were: Allahabad Bank, Punjab & Sind Bank, Vijaya Bank, Axis Bank, ING Vysya Bank. Also, 85.0% of public banks, 89.5% of private banks, and 100.0% of foreign banks were efficient.

For the efficient foreign banks, it was found that deposits and fixed assets were the properly-utilized inputs, while borrowings and net worth were under-productive inputs. For the efficient private banks, borrowings, deposits, and net worth were properly-utilized, while fixed assets and operating expenses were under-productive. Finally, for the efficient public banks, borrowings were properly-utilized, while deposits and operating expenses were under-productive inputs.

Table--5

Efficiency Analysis for the year 2007-08

	Foreign	private	public
%age efficient banks	**100.00%**	**89.50%**	**85.00%**
Efficient Banks			
Borrowings	30.00%	**82.40%**	**84.20%**
Deposits	**80.00%**	**64.70%**	31.60%
Fixed assets	**60.00%**	23.50%	47.40%
Net worth	20.00%	**64.70%**	52.60%
Operating expenses	50.00%	29.40%	36.80%
Inefficient Banks			
Advances & loans	NA	**100.00%**	**100.00%**
Investments	NA	50.00%	**100.00%**
Net interest income	NA	0.00%	**66.70%**
Non-interest income	NA	**100.00%**	**66.70%**

For the inefficient private banks, advances & loans and non-interest income were under-produced outputs. For the inefficient public banks, advances & loans, investments, net interest income, and non-interest income were the under-produced outputs.

Overall Efficiency Analysis : It was found that 59.2% of the sample banks were efficient, and 40.8% of the sample banks were inefficient. Also, 60.0% of the public banks, 52.6% of the private banks, and 70.0% of the foreign banks were efficient.

For the efficient foreign banks, it was found that deposits were the only properly-utilized inputs, while net worth and operating expenses were under-productive inputs. For the efficient private banks, borrowings and deposits were properly-utilized, while fixed assets, net worth, and operating expenses were under-productive. Finally, for the efficient public banks, borrowings and net worth were properly-utilized, while deposits and fixed assets were under-productive inputs.

For the inefficient private banks, advances & loans, investments, and non-interest income were under-produced outputs. For the inefficient public banks, advances & loans and investments were the under-produced outputs.

Table-- 6

OverallEfficiency Analysis

	Foreign	private	public
%age efficient banks	**60.00%**	**52.60%**	**70.00%**
Efficient Banks			
Borrowings	45.71%	**90.00%**	**76.67%**
Deposits	**74.29%**	**68.00%**	38.33%
Fixed assets	**57.14%**	24.00%	38.33%
Net worth	20.00%	38.00%	53.33%
Operating expenses	28.57%	28.00%	51.67%
Inefficient Banks			
Advances & loans	NA	**68.89%**	55.00%
Investments	NA	53.33%	55.00%
Net interest income	NA	33.33%	37.50%
Non-interest income	NA	**68.89%**	40.00%

3. DISCUSSION

The results of the study show that foreign banks were slightly more efficient than public and

private banks, and that there was not much of a difference in the efficiency of public and private banks. This concurs with the results of Shanmugam and Das (2004). There were, however, some significant differences in terms of utilization/ underutilization of inputs and under-production of outputs. Net worth was found to be under-productive for efficient private and foreign banks, while it was properly utilized by public banks. Thus, profitability of private and foreign banks is expected to be lower than that of public banks, especially in terms of return on net worth. This is partly because private and foreign banks are relatively new entrants in the Indian banking scene. The banks may need to streamline funds to optimize their return on net worth.

Fixed assets were found to be under-productive for efficient public and private banks. This may be due to capacity considerations. Both public and private banks have expanded their market base considerably in recent years, and would continue to do so in the immediate future. Excess capacity would thus be expected. Operating expenses were found to be very under-productive for efficient private and foreign banks. Thus, great reduction in expenses would be desirable. The banks may have to rationalize the number of staff. In continuation to the trend that began a few years back, more VRS schemes are envisaged. Cheaper rental options for the branch offices should be explored. Upgrading banking technology can also reduce operational costs. Advances and loans and investments were found to be under-produced in inefficient public and private banks. Further, not much of a difference was found in this aspect between public and private banks. Thus, public and private banks may need to pursue more aggressive loans and investment policies. Of course, the global credit crisis is a warning that such policies should be undertaken cautiously, within the statutory regulatory framework.

The study suffers from some mild limitations. The sample size considered for the study is limited, and the study period considered is a five-year period only. Also, the study used data envelopment analysis (assuming constant returns to scale) to compute the bank efficiency scores, using only five input variables and four output variables. In general, the efficiency scores computed using data envelopment analysis could be very sensitive to changes in the data, and depend heavily on the number and type of inputs and output factors considered.

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Table -7
Efficiency indices of banks by ownership type (2003-2008)

Bank	Ownership Type	2003-04	2004-05	2005-06	2006-07	2007-08
Allahabad Bank	public	100.00%	100.00%	100.00%	100.00%	98.76%
Andhra Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Bank of Baroda	public	100.00%	95.14%	93.03%	100.00%	100.00%
Bank of India	public	100.00%	100.00%	100.00%	100.00%	100.00%
Bank of Maharashtra	public	100.00%	95.06%	100.00%	100.00%	100.00%
Canara Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Corporation Bank	public	100.00%	100.00%	99.67%	96.59%	100.00%
Dena Bank	public	100.00%	98.06%	100.00%	100.00%	100.00%
IDBI Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Indian Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Indian Overseas Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Oriental Bank of Commerce	public	100.00%	88.61%	97.88%	100.00%	100.00%
Punjab National Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Punjab & Sind Bank	public	100.00%	100.00%	100.00%	100.00%	97.28%
State Bank of India	public	100.00%	100.00%	100.00%	100.00%	100.00%
Syndicate Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
UCO Bank	public	100.00%	100.00%	100.00%	100.00%	100.00%
Union Bank of India	public	100.00%	100.00%	100.00%	100.00%	100.00%
United Bank of India	public	100.00%	100.00%	100.00%	100.00%	100.00%
Vijaya Bank	public	100.00%	98.53%	100.00%	100.00%	99.62%
Axis Bank	private	81.73%	87.90%	100.00%	100.00%	96.54%
Catholic Syrian Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
City Union Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
Development Credit Bank	private	93.79%	100.00%	100.00%	100.00%	100.00%
Dhanalakshmi Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
Federal Bank	private	100.00%	99.19%	92.90%	96.88%	100.00%
HDFC Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
ICICI Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
Indus Ind Bank	private	95.68%	100.00%	93.03%	100.00%	100.00%
ING Vysya Bank	private	100.00%	100.00%	100.00%	100.00%	99.82%
Jammu & Kashmir Bank	private	100.00%	94.16%	100.00%	100.00%	100.00%
Karnataka Bank	private	100.00%	96.85%	97.67%	99.16%	100.00%
Karur Vysya Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
Kotak Mahindra Bank Ltd	private	89.80%	100.00%	100.00%	100.00%	100.00%
Lakshmi Vilas Bank Ltd	private	100.00%	100.00%	100.00%	100.00%	100.00%
Bank of Rajasthan	private	100.00%	81.12%	100.00%	100.00%	100.00%
Ratnakar Bank Ltd	private	100.00%	100.00%	100.00%	100.00%	100.00%
South Indian Bank	private	100.00%	100.00%	100.00%	100.00%	100.00%
Tamilnad Mercantile Bank Ltd	private	100.00%	100.00%	100.00%	100.00%	100.00%
ABN Amro Bank	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
Abu Dhabi Commercial Bank	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
Barclays Bank Plc.	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
Bank of Ceylon	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
BNP Paribas	foreign	87.75%	100.00%	100.00%	100.00%	100.00%
Citibank	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
Deutsche Bank	foreign	100.00%	100.00%	100.00%	100.00%	100.00%
DBS Bank Ltd	foreign	100.00%	100.00%	97.01%	100.00%	100.00%
Standard Chartered Bank	foreign	100.00%	100.00%	98.67%	100.00%	100.00%
State Bank of Mauritius Ltd	foreign	100.00%	100.00%	100.00%	100.00%	100.00%

Table - 8- Utilization of inputs for efficient banks

Bank	Ownership Type	Borrowings	Deposits	Fixed Assets	Net worth	Operating Expenses
Andhra Bank	public	**80.00%**	40.00%	**100.00%**	40.00%	20.00%
Bank of India	public	40.00%	20.00%	40.00%	**100.00%**	**60.00%**
Canara Bank	public	**100.00%**	0.00%	0.00%	0.00%	0.00%
IDBI Bank	public	0.00%	**100.00%**	0.00%	20.00%	**80.00%**
Indian Bank	public	**100.00%**	**80.00%**	40.00%	**80.00%**	20.00%
Indian Overseas Bank	public	**60.00%**	40.00%	**60.00%**	**60.00%**	40.00%
Punjab National Bank	public	**100.00%**	0.00%	0.00%	20.00%	**60.00%**
State Bank of India	public	**60.00%**	40.00%	**100.00%**	**80.00%**	40.00%
Syndicate Bank	public	**100.00%**	0.00%	**60.00%**	**80.00%**	40.00%
UCO Bank	public	**80.00%**	20.00%	0.00%	**80.00%**	**80.00%**
Union Bank of India	public	**100.00%**	**100.00%**	40.00%	**80.00%**	**100.00%**
United Bank of India	public	**100.00%**	20.00%	20.00%	0.00%	**80.00%**
Catholic Syrian Bank	private	**100.00%**	40.00%	40.00%	**60.00%**	20.00%
City Union Bank	private	**100.00%**	**60.00%**	20.00%	**80.00%**	**60.00%**
Dhanalakshmi Bank	private	**100.00%**	40.00%	0.00%	**100.00%**	0.00%
HDFC Bank	private	**100.00%**	**80.00%**	**60.00%**	0.00%	0.00%
ICICI Bank	private	0.00%	**100.00%**	0.00%	0.00%	0.00%
Karur Vysya Bank	private	**100.00%**	**100.00%**	0.00%	0.00%	**80.00%**
Lakshmi Vilas Bank Ltd	private	**100.00%**	**100.00%**	40.00%	**60.00%**	**80.00%**
Ratnakar Bank Ltd	private	**100.00%**	20.00%	0.00%	20.00%	20.00%
South Indian Bank	private	**100.00%**	**60.00%**	**80.00%**	**60.00%**	20.00%
Tamilnad Mercantile Bank Ltd	private	**100.00%**	**80.00%**	0.00%	0.00%	0.00%
ABN Amro Bank	foreign	20.00%	**100.00%**	**100.00%**	20.00%	20.00%
Abu Dhabi Commercial Bank	foreign	20.00%	**60.00%**	40.00%	**80.00%**	40.00%
Barclays Bank Plc.	foreign	**80.00%**	**100.00%**	40.00%	20.00%	20.00%
Bank of Ceylon	foreign	40.00%	0.00%	**100.00%**	0.00%	0.00%
Citibank	foreign	**60.00%**	**100.00%**	40.00%	0.00%	0.00%
Deutsche Bank	foreign	40.00%	**80.00%**	**80.00%**	0.00%	20.00%
State Bank of Mauritius Ltd	foreign	**60.00%**	**80.00%**	0.00%	20.00%	**100.00%**

Table -9 - Under-production of outputs for inefficient banks

Bank	Ownership	Advances Type	Investments & Loans	Net Interest Income	Non Interest Income
Allahabad Bank	public	40.00%	**60.00%**	20.00%	20.00%
Bank of Baroda	public	40.00%	**60.00%**	40.00%	40.00%
Bank of Maharashtra	public	20.00%	**80.00%**	40.00%	0.00%
Corporation Bank	public	**100.00%**	40.00%	40.00%	**60.00%**
Dena Bank	public	**60.00%**	40.00%	20.00%	**60.00%**
Oriental Bank of Commerce	public	**60.00%**	20.00%	40.00%	40.00%
Punjab & Sind Bank	public	40.00%	**60.00%**	40.00%	40.00%
Vijaya Bank	public	**80.00%**	**80.00%**	**60.00%**	**60.00%**
Axis Bank	private	**60.00%**	**80.00%**	40.00%	**60.00%**
Development Credit Bank	private	**60.00%**	**60.00%**	20.00%	**80.00%**
Federal Bank	private	**100.00%**	**60.00%**	0.00%	**80.00%**
Indus Ind Bank	private	**100.00%**	40.00%	40.00%	**100.00%**
ING Vysya Bank	private	**100.00%**	0.00%	**60.00%**	40.00%
Jammu & Kashmir Bank	private	**60.00%**	20.00%	**60.00%**	**80.00%**
Karnataka Bank	private	**60.00%**	**80.00%**	20.00%	40.00%
Kotak Mahindra Bank Ltd	private	**60.00%**	**60.00%**	40.00%	**60.00%**
Bank of Rajasthan	private	20.00%	**80.00%**	20.00%	**80.00%**
BNP Paribas	foreign	**100.00%**	**80.00%**	0.00%	**80.00%**
DBS Bank Ltd	foreign	**80.00%**	**100.00%**	40.00%	20.00%
Standard Chartered Bank	foreign	20.00%	20.00%	**60.00%**	**60.00%**