

Measuring Efficiency of Commercial Banks in Pakistan with Data Envelopment Analysis

Munib Badar and Atiya Yasmin Javid

Shaheed Zulfiqar Ali Bhutto Institute for Science and Technology (SZABIST), Islamabad.

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ABSTRACT

This study evaluates the individual and overall performance of commercial banking industry in Pakistan consists of 20 banks contains almost 90% of the share in terms of deposits, advances, total assets, profitability and labor force divided into four group large, medium, small conventional banks and a group of Islamic banks for the period which is characterized by slow economic growth and precarious macro economic indicators started from 2006 till 2010 by using non parametric technique Data Envelopment Analysis. Technical efficiency under CRS and VRS models and scale efficiency in respect of production and intermediation approaches are evaluated. This study earmarks and reason out the most efficient and inefficient banks, overall performance which is seen under slow growth in commensurate with the economic growth. Where as, Islamic banking group is less efficient but flourishing significantly among all groups. Performance of large conventional banks is less affected with economic upheavals.

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1. Introduction

There is no doubt that banking industry is a backbone of every economy and assists central bank to regulate monetary policy and board of revenue to implement fiscal policy. Recently, because of the rapid growth of the financial markets and diversification of Financial Institutions in the form of DFI, commercial and investment banks, NBFs and money transfer agents, it has become quite significant to measure the efficiency of financial institutions. Profitability and availability of intermediate funds depends upon the efficiency of financial institutions which later emerge in a shape of quality, service, security and soundness of financial systems. (Hunter and Timme (1993). Financial institutions are not only the most important pillar of any financial system instead for the whole economy because they play an important role to transform deposits into productive investments. (Podder and Mamun 2004)

As commercial banks are the deposit and loan generating machineries of any economy and play a pivotal role to regulate monetary policy decisions to control and prop up inflationary pressures and desired level of outputs. Resultantly, Money supply Mo and M1 is also affected with effective utilization of banking channels.

In entire scenario of Pakistan's economy it is imperative that the banking system functions properly and estimation of efficient working of banking industry pose a greater importance.

The banking industry of Pakistan comprises of 40 schedule banks which further divided into public, private, foreign and specialized banks. 5 public, 25 private, 6 foreign and 4 specialized banks are functioning. The total deposits of the bank have reached to 5.4 trillion Rupees till the end of 2010 and the total value of their total assets are more than 7 trillion rupee. The total profit being generated through banking industry is revolving around 100 billion rupee for the last 5 years.

During the last 5 years, economy of Pakistan underwent with economic upheavals and constrains and it slowed down significantly GDP growth counted negatively in 2009 at -1.6%, most importantly agriculture and industrial stagnancy contributed a lot. As agriculture sector growth reached at less than 1% in 2010 from 6.3 % during 2006 like wise industrial growth went in negative figures from 4.1 % in 2006 to -10 % in 2009 where as service sector growth remain stable for three years from 2006 but reached at its lowest level at 1.7 %. On the other side, minimum capital requirement of the banks are being enhanced with 1 Billion Rupees year after year. Till the end of 2010 the capital requirement of the bank was 7 billion, Non performing loans are being augmented (176 billion at the end of 2006 to 573 billion till 2010) due to curtailment of consumers purchasing power by dint of double digit inflationary pressures where CPI is touching a record high.

1.1 Objective of the Study

The main objective of the study is to assess the efficiency of banking sector of Pakistan.

- To determine technical efficiency under CRS and VRS model, scale efficiency of 20 banks through non parametric technique data envelopment analysis.
- To earmark the efficient bank and the reason of efficiency in the last five years from 2006 till 2010.
- To enumerate the inefficient banks and reason of inefficiency in the last five years in the above period.
- To observe and describe the overall efficiency of banking industry through production and intermediation approach.
- To observe the whole industry by dividing them into four groups large, medium, small conventional and Islamic banks.

1.2 Significant of the Study

Understanding efficiency of banking sector and to mitigate and rectify the reasons of inefficiency is very imperative for all stake holders in which the shareholder's interest accumulates in larger extent whether the performance of the bank is up to the

satisfactory level and their funds are being controlled and invested in a right manner. For central bank, government and the whole economy to achieve the target of monetary and fiscal policy, to prop up all sectors of economy that they may have an adequate liquidity and for consumers that the bank can't go bankrupt and they can take assistance from the bank to fulfill their demands. The study will provide the effect on banking sector's efficiency in the recent economic downturn and the percentage margin to fill inefficiency gaps.

1.3 Organization of the Study.

After introduction the rest of the study is organized as follows. Section 2 presents literature review, section 3 methodology which further elaborates conceptual framework of efficiency, specification of inputs and outputs to determine different components of efficiency and sample size while section 4 comprises of results evaluated after analysis of data and last sections includes conclusion and citations.

2. Literature Review

Generally performance of different players in an industry is calculated on the basis of ratio analysis. Relationship between two numbers of the same kinds is called ratio which clearly demonstrate how many time the first number contains the second. Specifically in banking industry return on equity, return on assets, return on deposit, price earning and earning per share are the significant ratios used to measure the productivity of one player in comparison of others but at times comparing ratios is not appropriate unless banks are identical in respect of product mix, market conditions, size and other attributes which may change the cost of the bank. However, the most decisive limitation of the ratio analysis is that it fails to consider the effect of multiple input and outputs, likewise ratios only provide the incomplete or partial picture of organization (Chu Fen Li 2007).

Similarly we also unearthed other techniques to measure efficiency of banks one is the parametric technique called stochastic frontier approach proposed by Aigner, et al. (1977) and the other is nonparametric technique called Data Envelopment Analysis (DEA). However both of the techniques have some advantages and limitations.

Stochastic Frontier Approach based on the functional form due to the idea that a relationship exist among the variables contributed to measure efficiency but no priori ground available to make such assumption therefore non parametric technique are preferred (Button, et al 1992). Over and above, no functional form is agreed there is the likelihood of misspecification of econometric model and leaves a doubt about the reliable efficiency estimation. Last but not least, it is also difficult to use multiple inputs and outputs under this approach. In contrary, the benefit of stochastic frontier is that it incorporates noise in the model which may be segregated from inefficiencies. It can also measure allocative inefficiency if price data is available.

DEA is the Non parametric technique measuring efficiencies of all DMUs (Decision Making Units) the banks in our study. This technique has several advantages i.e. it doesn't require to assume any functional or mathematical form like in stochastic frontier technique but fails to provide the general relationship between inputs and outputs. It may handle several inputs and outputs simultaneously and produces only a single measure which later help to rank the different DMUs. It is based on the methodology to bring the best firm as benchmark in shape of a frontier which is used to compare the productivities of the rest of the firms or DMUs using the same level of input whether

producing the same level of output or not in relation of the benchmark or frontier. It doesn't only evaluate the efficiency among the DMUs exist within the organization or firm but among various firms as well, sources of inefficiency may be assessed and quantified. This technique can also be used to unfold those relationships remain hidden while using other methods with some flaws that is based on selection of inputs and outputs and most importantly it can derived efficiency score even for small sample size (Berg 2010).

Out of 122 studies conducted on measuring efficiency of financial institution, 69 used non parametric techniques for frontier estimation, moreover data envelopment analysis is used in 62 studies out of these 69 written or published during 1992 till 1997 (Berger and Humphrey 1997).

Cost Frontier approaches are given more preference in relation of any other method while calculating efficiencies. It was further noted that 116 out of 130 studies were published in 21 countries based on frontier efficiency for financial institutions during five years from 1992 till 1996 (Berger and Humphrey 1997). The basic concepts of efficiency was presented by Farrell in 1957 thereafter the main development is brought by CCR (Charnes, Cooper and Rhodes 1978). As per them efficiency is defined as weighted sum of outputs to a weighted sum of inputs where weighted sums are derived with the help of mathematical programming under assumption of constant return to scale CRS which is referred to a condition under production function when output increases with the same proportion of input increase. Later, BCC (Banker Charnes and Cooper 1984) presented another model under assumption of output increases with more than the proportional change of input is know as variable return to scale VRS.

The significant developments were made by Seiford and Thrall (1990) and they provided the facts that DEA looks for and connects the lowest unit cost point for the output given to make an efficiency frontier. Any DMU doesn't fall on frontier is considered to be inefficient.

3. Methodology and Data

3.1 Conceptual Framework

Farrell (1957) was the one who introduced the concepts of efficiency used by the technique DEA can cater multiple inputs and outputs. According to him the total efficiency is also known as economic efficiency is basically the product of two main components of efficiencies one is called Technical efficiency (TE) and the other one is called Allocative efficiency (AE). Technical efficiency is the ability of a firm which can produces the maximum output by using its given inputs. Likewise Allocative efficiency is the name of using the given inputs in respective prices in an optimal proportion.

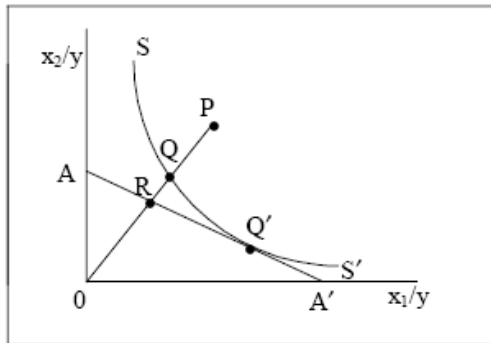
He presented his ideas with the help of very simple example. Lets assume that we have two inputs (X_1 and X_2) producing a single measure Y . This example is further illustrated in the figure 1 where the efficient firm is shown by an isoquant SS' . If the single measure produced by the above inputs is shown as P then the distance QP will show the technical inefficacy of the firm where we may assume that the inputs can be reduced without compromising on output. Hence the technical efficiency may be calculated by dividing the distance OQ with the distance OP . Similarly, in the figure 1 the line AA' represents the input price ratio where the ratio OR/OQ will give the value of Allocative efficiency. Here, the cost may be reduced is represented with the distance RQ would occur only if the

production falls on the point Q` is an allocative efficient point instead of the point Q technically efficient.

$$EE = TE \times AE = OQ / OP \text{ XOR } / OQ$$

Figure 1

Technical and Allocative Efficiencies



Technical efficiency is further divided into two parts one is called the Pure Technical and the other one is called scale efficiency. This is calculated by dividing the results derived by applying two different models constant and variable return to scale (CRS and VRS). There would be no scale efficiency if the results sought by these models are same.

In Figure 2 one input and one output is used to draw CRS and VRS frontiers. Under CRS the input oriented TE of the point P is the distance PPc where as under VRS the TE would only be PPv. The difference between these two PcPv shows scale efficiency. This can also be represented as

$$TE_{crs} = AP_c / AP \quad \text{Eq 1}$$

$$TE_{vrs} = AP_v / AP \quad \text{Eq 2}$$

$$SE = AP_c / AP_v \quad \text{Eq 3}$$

Put the value of APc form Eq 3 to eq 1

Then

$$TE_{crs} = (AP_v * SE) / AP$$

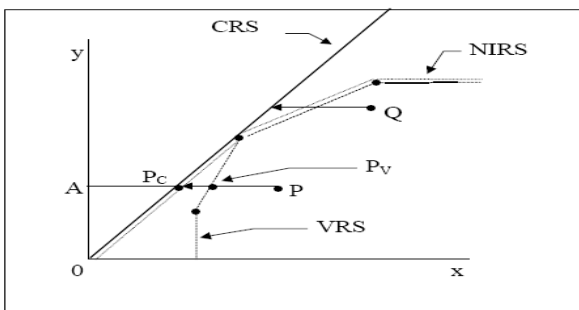
Put the value of APv/AP from eq 2

$$TE_{crs} = TE_{vrs} * SE$$

So TE under CRS is decomposed into pure technical efficiency and scale efficiency.

Figure 2

Calculation of Scale Economies in DEA



3.2 Specification of Inputs and Outputs

Specification of inputs and outputs are very critical for measuring efficiencies for financial institutions (Berg, et al 1992). Bank is seen from five different angles i.e. production, intermediation, User cost, Asset and value added approaches (Favro and Papi 1995 and Colwell and Davis 1992). Production approach views banks as producers of Loans and deposits by using capital and human resource. (English et al 1993, Sherman and Gold 1985, Elyasian and Mehdiian 1990). Similarly intermediation approach views banks to collect deposits by

using interest and administrative expenses and used to convert these deposits into earning assets i.e. loans and investments.

We used production and intermediation approach to calculate efficiency of banks. While processing results through production approach labor and capital is taken as inputs to produce loans and advances as outputs. Intermediation approach to compute earning assets that is total revenue by spending cost on interest and administration expenses. As defined earlier efficiency is the weighted sum of outputs to a weighted sum of inputs Charnes Cooper and Rhodes (1978).

The efficiency is measured as

$$E (\text{efficiency}) = \frac{\sum_{i=1}^n W_i \text{Output}}{\sum_{j=1}^m W_j \text{Input}} \quad \text{Eq 4}$$

Here, output represents the ith output of bank and Wi shows the weight assigned to output, likewise input is the input of ith input of bank and wj is the weight assigned to input.

$$\sum_{i=1}^n W_i \text{Output} / \sum_{j=1}^m W_j \text{Input} \quad K \leq 1 \text{ for } K=1, \dots, N$$

$$\text{and } W_i \text{ and } W_j \geq 0 \quad \text{Eq 5}$$

Equation 5 shows that efficiency ratios must be either 1 or less than 1. Moreover weights of input and out put must be positive. Optimal weights of input and output are determined by converting non liner function into liner function for bank.

3.3 Data and Sample

Data is gleaned for 20 large banks comprises of all private banks where NBP is the only public owned bank but with 25 % of shares floated in stock exchange. The DEA technique explained the annual performance of each bank (sufian 2007), we also took 4 Islamic banks that no significant segment may be missed in industry in among 35 schedule banks in Pakistan acquiring 90% of the whole industry in terms of deposits, advances, total assets, profitability and labor force for a period starts form 2006 till 2010 when the economic growth was being declined significantly. Data is collected from the financial statements of all banks. We calculated the following types of efficiencies Technical both in terms of CRS (Constant return to scale) based on CCR model (presented by Charnes, Cooper and Rhodes 1978) and VRS (Variable return to scale) based on BCC model (presented by Banker, Charnes and Cooper 1984), Scale efficiency by using output oriented method.

For the convenience of understanding, to compare the performance of each bank with its competitors and to seek the performance of different combination of banks in industry we decided all 20 banks to divide into four groups by dint of their financials and employment size till the end of 2010. The large groups consists of 5 larger conventional banks ABL (Allied Bank Ltd), HBL (Habib Bank Ltd), MCB (Muslim Commercial Bank), NBP (National Bank of Pakistan) and UBL (United Bank Ltd). Most of them working since inception of Pakistan or right after few years and each have more than 370 billion rupee of deposit figures. Medium Size group contains 6 conventional banks SCB (Standard Chartered Bank), BAL (Bank Alfalah Ltd), BAH (Bank Al Habib), Faysal Bank, Askari Bank and Habib Metropolitan bank each bank contains more than 100 billion of deposits and less than the criteria set for larger banks. Small size group contains 5 Banks RBS (Royal Bank of Scotland), NIB, Samba Bank Ltd, Silk Bank Ltd and Soneri bank Ltd each contains less than 100 billion rupee of deposits.

Table 1 Production Approach

| | 2006 | | | 2007 | | | 2008 | | | 2009 | | | 2010 | | |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | T.E | | S.E | T.E | | S.E | T.E | | S.E | T.E | | S.E | T.E | | S.E |
| | CRS | VRS | | CRS | VRS | | CRS | VRS | | CRS | VRS | | CRS | VRS | |
| Large Conventional Banks | | | | | | | | | | | | | | | |
| ABL | 0.69 | 0.7 | 0.98 | 0.65 | 0.69 | 0.94 | 0.61 | 0.65 | 0.94 | 0.67 | 0.8 | 0.85 | 0.67 | 0.87 | 0.77 |
| HBL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| MCB | 0.71 | 0.71 | 1 | 0.62 | 0.63 | 0.97 | 0.68 | 0.77 | 0.89 | 0.76 | 0.92 | 0.83 | 0.74 | 1 | 0.74 |
| NBP | 0.96 | 0.99 | 0.97 | 0.99 | 1 | 0.99 | 0.89 | 0.97 | 0.92 | 0.93 | 1 | 0.93 | 0.86 | 1 | 0.86 |
| UBL | 0.79 | 0.79 | 1 | 0.75 | 0.79 | 0.95 | 0.75 | 0.83 | 0.91 | 0.73 | 0.76 | 0.96 | 0.83 | 0.84 | 0.99 |
| Mean | 0.83 | 0.84 | 0.99 | 0.8 | 0.82 | 0.97 | 0.79 | 0.84 | 0.93 | 0.82 | 0.9 | 0.91 | 0.82 | 0.94 | 0.87 |
| Medium Conventional Banks | | | | | | | | | | | | | | | |
| SCB | 0.22 | 0.56 | 0.38 | 0.35 | 0.47 | 0.73 | 0.49 | 0.59 | 0.83 | 0.71 | 0.75 | 0.94 | 0.76 | 0.79 | 0.97 |
| BAL | 0.75 | 0.75 | 1 | 0.71 | 0.71 | 1 | 0.64 | 0.65 | 0.98 | 0.61 | 0.63 | 0.97 | 0.6 | 0.61 | 0.99 |
| BAH | 0.73 | 0.78 | 0.93 | 0.78 | 0.92 | 0.85 | 0.71 | 0.84 | 0.85 | 0.73 | 0.81 | 0.9 | 0.74 | 0.82 | 0.91 |
| Faysal | 0.6 | 0.73 | 0.82 | 0.85 | 0.86 | 0.98 | 0.74 | 0.83 | 0.89 | 0.81 | 0.93 | 0.87 | 0.81 | 0.92 | 0.88 |
| Askari | 0.98 | 0.25 | 0.98 | 0.61 | 1 | 0.61 | 0.53 | 1 | 0.53 | 0.57 | 1 | 0.57 | 0.58 | 1 | 0.58 |
| H Metro | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mean | 0.71 | 0.68 | 0.85 | 0.72 | 0.83 | 0.86 | 0.69 | 0.82 | 0.85 | 0.74 | 0.85 | 0.88 | 0.75 | 0.86 | 0.89 |
| Small Conventional Banks | | | | | | | | | | | | | | | |
| RBS | | | | 0.29 | 0.37 | 0.79 | 0.38 | 0.44 | 0.88 | 0.4 | 0.41 | 0.98 | 0.41 | 0.42 | 0.97 |
| NIB | 0.32 | 0.33 | 0.95 | 0.39 | 0.49 | 0.79 | 0.28 | 0.34 | 0.82 | 0.35 | 0.38 | 0.9 | 0.51 | 0.53 | 0.96 |
| SAMBA | 0.09 | 0.1 | 0.85 | 0.2 | 0.22 | 0.89 | 0.19 | 0.26 | 0.71 | 0.33 | 1 | 0.33 | 0.37 | 1 | 0.37 |
| SILK | 0.38 | 0.44 | 0.86 | 0.64 | 0.72 | 0.9 | 0.46 | 0.5 | 0.91 | 0.48 | 0.53 | 0.9 | 0.5 | 0.54 | 0.92 |
| SONERI | 0.48 | 0.48 | 0.99 | 0.7 | 1 | 0.7 | 0.66 | 1 | 0.66 | 0.67 | 0.93 | 0.72 | 0.58 | 0.83 | 0.69 |
| Mean | 0.32 | 0.34 | 0.91 | 0.44 | 0.56 | 0.81 | 0.39 | 0.51 | 0.8 | 0.45 | 0.65 | 0.77 | 0.47 | 0.66 | 0.78 |
| Islamic Banks | | | | | | | | | | | | | | | |
| B Islami | 0.08 | 1 | 0.08 | 0.34 | 1 | 0.34 | 0.2 | 0.28 | 0.73 | 0.36 | 0.52 | 0.7 | 0.5 | 1 | 0.5 |
| DIB | 0.08 | 0.11 | 0.76 | 0.31 | 0.37 | 0.84 | 0.59 | 1 | 0.59 | 0.55 | 1 | 0.55 | 0.58 | 1 | 0.58 |
| Albaraka | | | | 0.26 | 1 | 0.26 | 0.33 | 1 | 0.33 | 0.33 | 1 | 0.33 | 0.66 | 0.92 | 0.72 |
| Mezan | 0.28 | 0.31 | 0.88 | 0.5 | 0.59 | 0.85 | 0.47 | 0.54 | 0.86 | 0.41 | 0.45 | 0.92 | 0.41 | 0.47 | 0.87 |
| Mean | 0.15 | 0.47 | 0.57 | 0.35 | 0.74 | 0.57 | 0.4 | 0.71 | 0.63 | 0.41 | 0.74 | 0.63 | 0.54 | 0.85 | 0.67 |
| Total Mean | 0.56 | 0.61 | 0.86 | 0.6 | 0.74 | 0.82 | 0.58 | 0.72 | 0.81 | 0.62 | 0.79 | 0.81 | 0.66 | 0.83 | 0.81 |

Table 2 Intermediation Approach

| | 2006 | | | 2007 | | | 2008 | | | 2009 | | | 2010 | | |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | T.E | | S.E | T.E | | S.E | T.E | | S.E | T.E | | S.E | T.E | | S.E |
| | CRS | VRS | | CRS | VRS | | CRS | VRS | | CRS | VRS | | CRS | VRS | |
| Large Conventional Banks | | | | | | | | | | | | | | | |
| ABL | 0.75 | 0.8 | 0.95 | 0.61 | 0.64 | 0.94 | 0.71 | 0.74 | 0.96 | 0.81 | 0.85 | 0.95 | 0.85 | 0.88 | 0.96 |
| HBL | 0.63 | 1 | 0.63 | 0.65 | 1 | 0.65 | 0.69 | 1 | 0.69 | 0.69 | 1 | 0.69 | 0.78 | 1 | 0.78 |
| MCB | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| NBP | 0.78 | 1 | 0.78 | 0.74 | 1 | 0.74 | 0.74 | 1 | 0.74 | 0.67 | 1 | 0.67 | 0.73 | 1 | 0.73 |
| UBL | 0.69 | 0.85 | 0.81 | 0.6 | 0.83 | 0.73 | 0.63 | 0.92 | 0.69 | 0.71 | 0.93 | 0.76 | 0.77 | 0.89 | 0.87 |
| Mean | 0.77 | 0.93 | 0.83 | 0.72 | 0.89 | 0.81 | 0.75 | 0.93 | 0.82 | 0.78 | 0.96 | 0.81 | 0.83 | 0.95 | 0.87 |
| Medium Conventional Banks | | | | | | | | | | | | | | | |
| SCB | 0.7 | 0.7 | 1 | 0.88 | 0.88 | 1 | 0.98 | 0.99 | 0.98 | 0.79 | 0.8 | 0.98 | 0.86 | 0.88 | 0.98 |
| BAL | 0.72 | 0.9 | 0.8 | 0.53 | 0.68 | 0.78 | 0.56 | 0.68 | 0.82 | 0.61 | 0.67 | 0.91 | 0.64 | 0.67 | 0.95 |
| BAH | 0.71 | 0.71 | 1 | 0.54 | 0.54 | 0.99 | 0.64 | 0.65 | 0.97 | 0.8 | 0.82 | 0.98 | 0.88 | 0.88 | 1 |
| Faysal | 0.97 | 1 | 0.97 | 0.71 | 0.72 | 0.98 | 0.78 | 0.81 | 0.96 | 0.71 | 0.74 | 0.96 | 0.68 | 0.7 | 0.96 |
| Askari | 0.8 | 0.86 | 0.93 | 0.54 | 0.54 | 1 | 0.59 | 0.59 | 0.99 | 0.62 | 0.63 | 0.98 | 0.73 | 0.74 | 0.99 |
| H Metro | 1 | 1 | 1 | 0.91 | 0.93 | 0.97 | 0.97 | 1 | 0.97 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mean | 0.82 | 0.86 | 0.95 | 0.69 | 0.72 | 0.95 | 0.75 | 0.79 | 0.95 | 0.76 | 0.78 | 0.97 | 0.8 | 0.81 | 0.98 |
| Small Conventional Banks | | | | | | | | | | | | | | | |
| RBS | | | | 0.54 | 0.54 | 1 | 0.59 | 0.6 | 0.97 | 0.56 | 0.59 | 0.94 | 0.53 | 0.58 | 0.93 |
| NIB | 0.6 | 0.62 | 0.97 | 0.56 | 0.57 | 0.97 | 0.45 | 0.45 | 1 | 0.63 | 0.65 | 0.97 | 0.5 | 0.52 | 0.97 |
| SAMBA | 0.18 | 0.21 | 0.86 | 0.35 | 0.36 | 0.97 | 0.47 | 0.64 | 0.74 | 0.48 | 1 | 0.48 | 0.58 | 1 | 0.58 |
| SILK | 0.58 | 0.6 | 0.98 | 0.27 | 0.27 | 1 | 0.45 | 0.54 | 0.83 | 0.4 | 0.51 | 0.79 | 0.46 | 0.56 | 0.82 |
| SONERI | 1 | 1 | 1 | 0.92 | 1 | 0.92 | 0.88 | 1 | 0.88 | 0.78 | 1 | 0.78 | 0.77 | 0.94 | 0.82 |
| Mean | 0.59 | 0.61 | 0.95 | 0.53 | 0.55 | 0.97 | 0.57 | 0.65 | 0.88 | 0.57 | 0.75 | 0.79 | 0.57 | 0.72 | 0.82 |
| Islamic Banks | | | | | | | | | | | | | | | |
| B Islami | | | | 0.49 | 0.61 | 0.81 | 0.58 | 0.96 | 0.6 | 0.55 | 1 | 0.55 | 0.61 | 0.84 | 0.73 |
| DIB | 0.85 | 0.92 | 0.93 | 0.59 | 0.63 | 0.94 | 0.49 | 0.61 | 0.8 | 0.62 | 0.97 | 0.64 | 0.63 | 0.84 | 0.75 |
| Albaraka | | | | 0.75 | 0.83 | 0.90 | 0.51 | 1 | 0.51 | 0.48 | 1 | 0.48 | 0.43 | 0.79 | 0.55 |
| Mezan | 0.6 | 0.64 | 0.94 | 0.46 | 0.51 | 0.91 | 0.64 | 0.69 | 0.93 | 0.62 | 0.71 | 0.87 | 0.61 | 0.7 | 0.87 |
| Mean | 0.73 | 0.78 | 0.94 | 0.57 | 0.44 | 0.89 | 0.56 | 0.82 | 0.71 | 0.57 | 0.92 | 0.64 | 0.57 | 0.79 | 0.73 |
| Total Mean | 0.7 | 0.69 | 0.78 | 0.63 | 0.66 | 0.87 | 0.67 | 0.79 | 0.85 | 0.68 | 0.84 | 0.82 | 0.7 | 0.82 | 0.86 |

The last group is basically represents the non conventional banks based on Islamic Philosophy and keep their activities under the jurisprudence of Islamic Law comprises of four stand alone Islamic Banks Bank Islami, DIB (Dubai Islamic Bank), Albaraka Islamic Bank and Mezan Islamic Bank.

4. Results and Discussions

4.1 Production Approach

Table 1 describes production approach where the results close to 1 or 1 shows efficient banks explains HBL and Habib Metropolitan are the technical under CRS and VRS, and scale efficient banks during 2006 till 2010 the main reasons of their efficiency is that they effectively increase their outputs both deposit and total advances with stable growth in comparison of the other DMUs.

As regards inefficiency, Bank Islami is the most inefficient bank under CRS and VRS of technical efficiency during 2006 because this bank was inaugurated and started its operation during 2006, the main focus of the management might be to establish infrastructure and to enhance the circle of its operations in different parts of country. Hence, it couldn't produce adequate amount of deposit and loans. Further, Samba bank is emerged as the non performing bank in terms of technical efficiency under CRS and VRS. This bank left behind in competition to generate appropriate amount of loans and deposits. This is the most Technical inefficient bank from 2007 till 2010 and like wise scale inefficient during 2009 and 10.

The main reasons of inefficiencies might be taken over the charge of Cres bank and to streamline the system of work being done in previous style with Samba vision and lack of manageability at branch level to acquire the desired level of deposits in consonance of its inputs, slow growth of its expansion to open new branches in other markets. Albaraka bank is also raised for inefficiency score under scale efficiency during 2007 and 08 due to its lack of concentration to generate adequate amount of outputs and to use its inputs employment and capitals in an inefficient manner. On average the industry grows with 4% in terms of its efficiency scores which can be considered as good gesture and utilization of resources in suitable manner. Among large banks HBL and NBP produces desired level of deposits and loans during the course of study as technical efficiency for HBL remain 1 and for NBP near to 1. ABL is the less efficient in this group during the whole period in both terms of technical and also for scale efficiency. In medium size group of banks Habib metropolitan is the most efficient bank where as the efficiency among SCB, BAL, BAH, Faysal and Askari bank increases and decreases with the passage of time and they remained moderate efficient during the course of study. In small conventional banks, no bank is found to be very efficient, economic upheavals and low economic growth doesn't let them to work efficiently and these banks starts their operations in the current decade and a big part of their efforts spent to make the infrastructure.

Islamic Banks remained under perform in comparison of large and medium size conventional banks but interesting and admirable thing is that the overall mean value grows significantly for both CRS and VRS levels of technical efficiency.

4.2 Intermediation Approach.

Table 2 explains that MCB and Habib Metro is the most efficient banks under CRS and VRS of technical efficiency, over and above these two banks are also scale efficient. Where as NBP is the efficient bank in VRS level during the total period

starts from 2006 till 2010. The main reason of their efficiency is to use the employment and deposits in an effective manner so that the nonperforming loans may be avoided, cost of deposit kept at lower level which help these banks to generate high level of banking spread which ultimately produces unusual interest earned amount irrespective of the rest of industry players.

The most inefficient bank under CRS is Samba for 2006, Silk for 2007 and 2009, NIB for 2008 and Albaraka for 2010. Where as, the most inefficient banks for 2006 and 07 in terms of scale efficiency are HBL but for 2008 till 2010 Albaraka took position for inefficiency under scale efficiency. The significant reason of this inefficiency is the non performing loans, write offs and high administrative expenses on infrastructure like Habib bank is the biggest bank in terms of network and carrying a very high cost to run all 1400 plus branches alive.

Overall, there is no considerable impact is seen on average efficiency as around 35 % cushion remained to improve under CRS like wise on scale around 15 % can be made in total as a small fluctuations and slowing growth is seen during the last 5 years. Among large banks the intermediate efficiency of MCB remained high where as the efficiency of remaining banks doest not show any growth during the course of study in this group. In medium size banks, Habib Metropolitan remained technical efficiency in respect of intermediation, where as Faysal bank remained efficient for 2006 but later it couldn't keep the same standard of intermediation efficiency. In small banks the overall performance of each player is not appreciating except Soneri bank for the first three years 2006 till 08. Among Islamic banks the growth in efficiency figures are remarkable but are less efficiency in industry.

5. Conclusions

This study attempted to provide an insight of the performance of commercial banking industry with DEA approach for the period started from 2006 and ended on 2010 under economy was observing a downturn with lower performance of macro economic indicators.

There is no overall significant efficiency growth is found during the course of study in both production and intermediation approaches. Only one sixth of the banks are found to be efficient in total. The efficiency of large conventional banks is found to be satisfactory in the other groups. Small and Islamic banking groups are found to be very less efficient but efficiency growth in Islamic banks is found larger among all groups in both approaches, the main reasons of the less efficiency in small and Islamic banking groups is that they established in a time when the economic growth started to be slowed down, consumer financing is hit by heavy non performing loans and dwindled of significantly during the course of study due to high inflation and resultantly high interest rates prevailing lessons the purchasing power of consumers and increase the cost of borrowing respectively , low spread on corporate financings, high infrastructure cost or fixed expenses of these banks and low private credit growth etc. as regards efficiency growth in Islamic banks the public is religion inclined and feel trust and peace of mind while keeping or investing their savings in Islamic banks and hence new Islamic banks and Islamic windows in conventional banks are being established.

7. Citations

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