An Evaluation of Technical Efficiency of Commercial Banks in Nigeria (A Dea Approach)

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Abstract
This study evaluated technical efficiency of the Nigerian commercial Bank between the years 2002 to 2011. Ten Nigerian Banks were randomly selected out of 15 banks quoted in Nigeria. In order to achieve the objectives of the study the research questions formulated were; is there relationship between efficiency of Nigerian commercial banks and technical production? Is there relationship between effective man- power planning and technical production efficiency? And to what extent does managerial performance assist high technical production efficiency? For this intention, the Data Envelopment Analysis (DEA) model was used. The results of the analysis showed that, some banks were found perfectly technical efficient with efficiency scores of 1.000 meaning (100%) efficiency, whereas those that were below 1.000 were less fully efficient. The mean technical efficiency, for the period examined stood at 0.938 (93.8%). This mean result meant that the Nigerian banking sector generally needs sound managerial attention. It is recommended therefore that the sound macroeconomic, sectorial and structural policies are applied to improve internal balance, ensure external sector performance and stimulate the productivity base and industrial sector of the Nigerian economy.

Keywords: Evaluation, Technical efficiency, Decision-Making Units, Financial Intermediation, Banking sector and Financial resources

1. Introduction

Banking industry in the developing countries has long been recognized for its impact as a channel of monetary policy transmission. Firms in these countries depend heavily on bank lending to finance their business activities. Therefore, an evaluation of technical efficiency of commercial banks remains significant in Nigeria especially to assess the influence of the several reforms we have had.

The importance of banking sector in the economic development of any nation is highly formidable and that is why an efficient banking sector is necessary for better usage of financial resources of a nation. Economic development can be achieved only by using the available resources in a better way and hence improving the output performance. When one talks about better utilization of any given resource, the very basic concept that comes to one's mind is of "Efficiency". In order to allocate resources efficiently, banks should be sound and efficient in identifying the right set of opportunities. Therefore, efficiency remains an important issue in Nigeria and other developing countries to guarantee the smoothness of the monetary policy transmission process and also to provide better pricing and services to the banking customers.

Nigerian Banking sector comprises of commercial banks, merchant, mortgage and microfinance banks. These banks evolved to achieve economies of scale in order to offset the costs of collecting and processing information designed to reduce uncertainty, thereby facilitating a more efficient allocation of financial resources. In an ideal economy, banks tend to act as quality controllers for capital seeking-projects, ensuring higher returns and accelerating output. However a competitive banking system is required to ensure that banks are effective forces for financial intermediation, channeling savings into investment and fostering higher economic growth.

The term "Efficiency" refers to the maximizing of outputs in such a way the input resources are less utilized. Banking efficiency is defined as difference between observed quality of input and output variables with respect to optimal quality of input and output variables. The efficient banks can achieve a maximum value of ONE in comparison to inefficient banks can reduce to level of ZERO. Haseeb Shahid et al. (2010)

This research work evaluates the technical efficiency of Nigerian commercial banks, most importantly, to assess their efficiency, productivity, growth and over the period of 2002 – 2011, if the banking reforms and re-capitalization of recent time have impacts on Nigerian banks. Though,

consolidation is meant to open up new opportunities for banks to increase revenues by diversifying into investment banking, insurance, credit cards, depository services, mortgage financing, securitization, and so on.

There are some different approaches to measuring efficiency; namely, the non-parametric (linear programming), the parametric (Stochastic – Frontier, Production – Function) approach etc. Data Envelopment Analysis (DEA) was used for this work. In addition, The results of the study found out whether the financial intermediation role of the banks have been yielding expected results evenly among the Nigerian banks and if they have benefited mostly from expansion via economies of scale, while on the other hand, the results also found out the inefficient banks, if shrinking them together with the efficient banks in order to benefit from scale advantages will be more beneficial.

A Review of Empirical Literature

There have been several studies analyzing banks efficiency in Nigeria and other countries of the world. Rammohan (2002, 2003) 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 the analysis. While few studies concentrate on the efficiency of only public sector banks, others look at the relationship between ownership and efficiency.

Bhalerao and Prasad (2011) quoted kumbhakar and Sarkar (2003) and found that in India private sector banks improved their performance mainly due to the freedom to expand out; public sector banks have not responded well to the deregulation measures.

Rammohan and Ray (2004) compared the revenue maximizing efficiency of public, private and foreign banks in India, using physical quantities of inputs and outputs in the 1990's. Using deposits and operating cost as inputs and loans, investments and other income as outputs, they found that public sector banks were significantly better than private sector banks on revenue maximization efficiency, but between public sector banks and foreign banks the difference in efficiency was not significant.

Bhalerao (2011) quoted Kumar and Gulati (2007) and who studied the technical efficiency of public sector banks in India using two data development analysis models; viz. the Charnes, Cooper and Rhodes model and Anderson and Petersen's super –efficiency models. The analysis was performed on a cross-section of twenty seven public sector banks in the year 2004-2005. The results show that the technical efficiency scores range from 0.632 to 1, with an average of 0.885. Thus, the overall level of technical inefficiency in Indian public sector banking industry has been found to be around 11.5%.

Some researches in Pakistan also employed the Data Envelopment Analysis (DEA) model. Daniel (2003) studied the commercial banks efficiency in the Vise grad region before joining European Union and also to consider differences in efficiency across the countries. He used non-parametric programming technique, Data Envelopment Analysis (DEA) model to estimate efficiency of different banks for period of (1999-2002) the sample set for every year were 59 banks in 1999, 72 in 2000, 70 in 2001, and 62 in 2002 respectively. The results indicated that average efficiency of banking intermediation in 2002, the banking industries can be distinguished as more and less efficient. Czech and Hungarian banking sectors were on average evaluated as the most efficient followed with a non-marginal distance, by the public banking sector. The Slovak banking sector stands apart with a substantial gap in efficiency scores.

AbdulQuoyum (2007) investigates the yearly efficiency scores of 20 banks for period of (1991-2005). He used non-parametric programming technique, Data Envelopment Analysis (DEA) model to estimate efficiency of 20 banks for period (1991-2005). The results indicated that efficiency score of banking improves from 65% in 1991 to 87.6% in 2005. As a result of which banks are able to expand their core business activities, they strengthened their capital base, improved asset quality and profitability during the year 2005. This development clearly reflected the increased competition among banks and improvement in efficiency of banking sector.

In Nigeria as well, some researches employed DEA to measure the bank performance. Ayadi, Adebayo and Omolehinwa (1998) measured the bank performances in Nigeria by applying Data Envelopment Analysis to the financial data of ten banks from 1991 to 1994. They used interest paid on deposits, total expenses, and total deposits as inputs while total loans/ Interest and non-interest Income were considered as outputs. They found that banks in existence for long period of time were relatively efficient than other banks in the sample and banks having poor management showed bad performance

and that was the key determinant of the bad performance of banks in Nigeria.

Davies (2011) studied scale economies in banks over the period before, during and after bank consolidation in developing world using Nigeria as a case study. It adopted the data Envelopment Analysis (DEA) for computing scale economies scores of the stable identity banks in the country in 2001 – 2008. The results revealed that on average, more banks enjoyed economies of scale in period of consolidation than in period of 3 years prior to consolidation and 3 years after consolidation. Furthermore, banks record economies of scale in the pre-consolidation era than in post-consolidation period, the level of economies of scale over the period in the sector is promising.

Tanvir and Waseem (2008) estimated technical efficiency under suggested specification, Data Envelopment Analysis (Computer) program developed by Coelli (1996) is used. After analysis, commercial banks operating in Pakistan got 27 different technical efficiency scored under this specification of DEA and among these banks 7 got the highest technical efficiency score. Lowest technical efficiency score obtained by a bank under the specification is 0.003, so, the highest input reduction under the specification that should be carried out by that bank to achieve obtained level of profit efficiently is about 99.70% of the current level of inputs.

Ali et al. (2002) used DEA and found that the most striking conclusion from this ranking is that the smallest bank in Kuwait, the industrial Bank of Kuwait, is consistently the most efficient of all the banks in the country in each of the four years of the sample.

2. Statement of the Problem

In the several reforms banking sector has been experiencing in Nigeria, Nigerian economy faced with a myriad of economic problems. Some of these were high inflation, unemployment, increasing poverty, low economic growth rate, high fiscal deficits, huge balance of payments deficits, financial sector repression and worsening terms of trade. These economic crises have been attributed to two main factors, i.e. domestic policy failure and inadequate institutional capacity (Afolabi and Mamma 1994). All the highlighted economic problems are interlocking reasons for banking sector reforms so that these problems will be ameliorated to a minimal level. Reforms are predicated upon the need for re-orientation and repositioning of an existing status quo in order to attain an effective and efficient state of economy. Some advocates of reforms were of the opinion that: Ajayi (2005).The financial sub-sector was reformed in order to enhance its competitiveness and capacity to play fundamental role of financial investment. (Nnanna Englama and Odoko (2004) also said the financial sector reforms are propelled by the need to deepen the financial sector and repositioned it for growth to become integrated into the global financial architecture and evolve a banking sector that is consistent with regional integration requirement, savings mobilization and international best practices (Nnanna Englama and Odoko (2004). Lemo (2005) posited that the primary objective of the reforms was to guarantee an efficient and sound financial sector. He said that the Nigerian financial reforms were designed to enable the banking industry develops. The required resilience is to support the economic development of the nation by efficiently performing its function of financial intermediation. He further stressed that a fundamental objective of the programme was to ensure the safety of "deposited" money, position banks to play active development roles in the Nigerian economy, and become major players in the sub-region, regional and global financial markets. Also advocates of bank consolidation believe that it would produce more efficient banks and healthier banking system less prone to bank failures (Mishkin, 2007). This is too-big-to-fail syndrome.

The above good attributes and purpose–based advantages of financial reforms are worthwhile and they are capable of launching banking sector and entire economy into brilliant success. The expectation of financial reforms is to see banks performing efficiently technical in their operation. However, some believe that it may lead to a reduction in lending to small businesses and that banks rushing to expand into new geographic markets may take increased risks leading to bank failure. (Mishkin, 2007) In (2005) Charles Soludo, the then Governor of Central Bank of Nigeria began a banking reform which made 89 commercial banks shrunk to 24 quoted banks, thinking that these will be too-big-to-fail according to (Mishkin, 2007) through mergers, acquisitions and recapitalization. Some of these 24 banks were later merged by present CBN Governor; Sanusi Lamido Sanusi (2008) being found inefficient and banks quoted presently are 15. There are some inherent problems that may be hidden; therefore Bhagavath (2006) said traditional performance measurement system provides a very unbalanced picture of performance that can lead managers to miss important opportunities for improvement and this is related to drawbacks stated

by Nandy (2010) that are capable of making banks to be technically inefficient:

- Ineffectiveness in man-power planning.
- Weak corporate governance.
- Sticking to outdated technology for banking operations.
- Unprofitable operation among the Nigerian banks.

3. Objective of the Study

The general objective of the study is to evaluate the technical efficiency of commercial banks in Nigeria. To achieve this, the following specific objectives were proposed:-

- To measure the relative efficiency of commercial banks in Nigeria.
- To examine the extent of the input waste among Nigerian commercial banks.

4. Method of Data Analysis

The method that will be used for this research is Data Envelopment Analysis (DEA). DEA is an increasingly popular management tool. DEA is commonly used to evaluate the efficiency of a number of producers. The DEA approach was pioneered by Charnes, Cooper and Rhodes. (1978) and later extended by Banker Charnes and cooper. (1984). DEA decomposes cost (input saving) efficiency into technical and allocative efficiencies. It also allows the decomposition of technical efficiency.

The DEA approach refers to the ability of banks to control cost and generate revenue and it is a linear programming based technique for measuring relative efficiency and management performance of firms where presence of multiple inputs and outputs make comparison difficult. It uses observed values of inputs and outputs and attempts to find which of the firms in the given sample determine an envelopment analysis. Widespread usage of DEA for examining scale economies is because it requires no explicit specification of functional form. It is practically difficult to parametrically specify and estimate a production or cost function for the banking business because deregulation and advances in technology hence brought many outputs other than the traditional output loans (Harada and Ito 2005).

DEA serves as an alternative to regression technique since regression is based on central tendencies, while DEA is based on extreme observation. Moreover the merit with the DEA is that unlike regression analysis. It does not require a prior assumption about the analytical form of the production function; instead it derives the best production function solely on the basis of observed values making it impossible to misspecify the production technique.

The efficiency scores were based on the CCR model of DEA.

Charnes, Cooper and Rhodes- Model:

CCR- Model is introduced by Charnes, Cooper and Rhodes (1978). This model measures the efficiency of each DMU which is obtained as a maximum of a ratio of total sum of weighted output to total sum of weighted inputs.

The weight for the ratio are determined by the restriction that the similar ratios for every DMU have to be less than or equal to unity. Therefore, the efficiency score is a function of the weights of the "Virtual" input- output combination. Suppose that there are n DMUs, each within input and output, relative efficiency score of a given DMU is obtained by solving the following linear programming model.

$$Max\ ho\ (u,\ v) = \frac{\sum_{i=1}^{s} u_o\ y_{ro}}{\sum_{i=1}^{m} v_r\ x_{io}} \quad \underline{\qquad} (1)$$

s	=	number of outputs;
u_r	=	weight of output r;
y_{ro}	=	amount of output produced by the DMU
m	=	number of inputs
v_i	=	weight of input i; and
x_{io}	=	amount of input i used by the DMU

Equation 1 assumes constant returns to scale and controllable inputs, while both inputs and output can be measured and entered in this equation without standardization, determining a common set of weights can become difficult. DMU might assess output and inputs quite differently. The CCR model takes into account this concern.

$$\underline{max}\ ho\ (u,\ v) = \frac{\sum_{i=1}^{s} u_r\ y_{rj}}{\sum_{i=1}^{m} v_r\ x_{ij}} \quad \leq 1\ for\ each\ DMU\ in\ the\ sample\ ---\ (2)$$

Where j = 1-------------n (number of DMUs)

x_{ij}	=	The amount of input i utilized by the jth DMU
y_{rj}	=	The amount of output r produced by the jth DMU
v_i	=	weight given to input i
u_r	=	weight given to output r

To measure efficiency, equation 2 is converted into the more familiar components of a linear programming problem. In equation 3, the denominator is set to a constant and the numerator is maximized.

$$Max\ ho \quad = \quad \sum_{r=1}^{s} u_r\ y_{rj}$$

$$Subject\ to: \quad \sum_{i=1}^{m} v_i\ x_{ij}$$

$$\sum_{r=1}^{s} u_r\ y_{rj} \quad - \quad \sum_{i=1}^{m} v_r\ x_{ij} \quad \leq 0$$

$$u_r \geq 0\ ;\ i = 1, 2, \text{----------}, \ m$$

$$y_{rr} \geq 0\ ;\ r = 1, 2, \text{----------}, \ s$$

Inputs		Outputs	
Deposits	I_1	Loan and Advances	O_1
Operating expenses	I_2	Investments	O_2
Assets	I_3	Interest Income	O_3
		Non-interest income	O_4

Figure 1.
Source: Field Data (2013)

Data and Model Specification

The data for the research were obtained from the published financial statements of Nigerian banks from *2002-2011*. Information required for the analysis was extracted for all the banks randomly sampled operating in Nigeria during the period of 2002-2011. The banks include; First bank, Union bank, UBA, Zenith, GTbank, Diamond bank, Wema bank, Access bank, FCMB and Fidelity. All financial data are denominated in terms of Nigerian Naira (in thousands). Inputs used in the study are deposits (D), operating expenses (OE) and other assets (OA), while the outputs represent loans and advances (L), investment (I), interest income (IY) and non-interest income (NIY). Choice of the inputs and outputs was adapted to work of the seasoned researchers like Prasad and Bhalerao (2011). Deposits, one of the main inputs, are the overall resources available to banks for carrying out their activities like lending and investment. Operating expenses is the cost incurred in the banking financial intermediation, this include the cost of labour and all other labour-related expenses. And other asset is in form of liquid assets made available for intermediation. The outputs chosen for the study constitute one of the major activities of banks, i.e. to channel their funds into investments, advancing loans for profits and provide miscellaneous services to generate significant amount of interest and non-interest revenues.

5. Results and Discussion

Table1.

S/N	BANK SELECTED	T.E. 2002	T.E. 2003	T.E. 2004	T.E. 2005	T.E. 2006	T.E. 2007	T.E. 2008	T.E. 2009	T.E. 2010	T.E. 2011
1	First bank	0.907	0.819	0.928	0.757	1.000	0.818	1.000	1.000	0.939	0.891
2	Union bank	0.643	0.720	0.842	0.792	1.000	0.993	0.862	0.515	1.000	0.924
3	UBA	0.679	0.879	0.755	1.000	0.792	1.000	0.623	0.808	1.000	0.843
4	Zenith	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5	GTBank	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
6	Diamond	1.000	0.731	0.936	0.807	0.956	0.912	0.904	0.988	1.000	1.000
7	Wema	1.000	1.000	1.000	1.000	1.000	1.000	0.668	1.806	1.000	0.931
8	Access	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
9	FCMB	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.911	1.000	1.000
10	Fidelity	0.922	1.000	1.000	1.000	1.000	1.000	1.000	0.943	0.808	0.817
	Mean	0.915	0.915	0.946	0.936	0.975	0.972	0.906	0.897	0.974	0.941

Researcher computation using DEAP Version 2.1
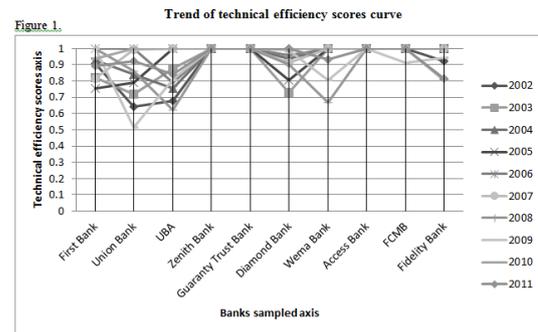
From table 1 above and in 2002, Zenith, GTB, Diamond, Wema, Access and FCMB showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . First bank and Fidelity showed a good score of 0.907 and 0.922 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency. And Union bank and UBA had 0.643 and 0.679 respectively symbolizing that the technical efficiency is low.

In 2003, Zenith, GTB, Wema, Access FCMB and Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources. First bank, Union bank, UBA, Fidelity showed a satisfactory score ranging between 0.720 and 0.879 meaning that they were not fully technical efficient but they still have a scope for improvement in their technical efficiency.

In 2004, Zenith, GTB, Wema, Access and FCMB, Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources. First bank, Union bank, UBA and Diamond showed a good score of 0.928, 0.842, 0.755, and 0.936 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

In 2005, UBA, Zenith, GTB, Wema, Access, FCMB and Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . First bank and Union bank, and Diamond bank showed satisfactory score of 0.757, 0.792 and 0.807 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

In 2006, First bank, Union, Zenith, GTB, Wema, Access, FCMB and Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs

resources . UBA and Diamond showed a good score of 0.792 and 0.956 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

In 2007, UBA, Zenith, GTB, Wema, Access and FCMB and Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . First bank, Union bank and Diamond showed a good score of 0.818, 0.912 and 0.993 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

In 2008, First bank, Zenith, GTB, Access, FCMB and Fidelity showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . Union and Diamond showed a good score of 0.862 and 0.904 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency. And UBA and Wema had 0.623 and 0.668 respectively symbolizing that the technical efficiency is low.

In 2009, First bank, Zenith, GTB, Diamond and Access showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . UBA, Diamond, Wema, FCMB and Fidelity showed a good score ranging from 0.806 to 0.943, meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency. And Union bank had a score of 0.515 symbolizing a signal for poor performance.

In 2010,Union bank, UBA, Zenith, GTB, Diamond, Wema, Access and FCMB showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . First bank and Fidelity showed a good score of 0.939 and 0.806 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

In 2011, Zenith, GTB, Diamond, Access and FCMB showed perfect efficiency measure of 1.000, meaning that they were perfectly technical efficient in using the inputs resources . First bank, union bank, UBA, Wema and Fidelity showed a good score of 0.891, 0.924, 0.843, 0.931 and 0.817 respectively meaning that they were nearly technical efficient but they still have a scope for improvement in their technical efficiency.

Furthermore, the technical efficiency scores of Nigerian banks were found to be in the range of 0.515 to 1.000 for the period 2002-2011. Under the constant returns to scale assumption, the Nigerian banking system emerged with an asymmetric efficiency pattern. The average technical efficiency score of the banks stood at 0.938 for the period of analyses. The implication of this to objective one of the study, which is the ascertainment of the relative efficiency of banks, is that some of the banks broke technical efficiency frontier by scoring 1.000. Therefore they serve as benchmarks to determine the efficiency of other banks that had scores below 1.000; this means that they did not use their inputs optimally. Prasad and Bhalerao (2011) got similar result where the average performance of the banking sector ranged above 80%. In the year 2002, the following banks had input waste; first bank 9.3%, union bank 35.7%, and fidelity 7.8%. In 2003, the following banks had input waste; first bank 18%, union 28% UBA 12.1%, and diamond 26.9%. The following banks also recorded input waste in 2004; first bank 7.2%, union bank 15.8%, UBA 24.5% and diamond bank 6.4%. Input wastes among banks in 2005 were; first bank24.3%, union bank 20.8% and diamond bank 19.3%. In 2006, input wastes of the affected banks were; UBA 20.8% and diamond 4.4%. In 2007, the following banks had input wastes; first bank 18.2%, union bank 7% and diamond 8.8%. In 2008, the following banks were found with input wastes; union 13.8%, UBA 37.7%, diamond bank 9.6% and wema bank 33.2%. Similar experience also occurred in 2009 where the following banks had input wastes; union 48.5%, UBA 19.2%, diamond bank 1.2%, wema 19.4%, FCMB 8.9% and fidelity 5.7%. In 2010, the following banks also recorded wasted inputs; first bank 6.1% and fidelity 19.4%. Even in the year 2011, the following bank had input wastes; first bank 10.9%, union bank 7.6%, UBA 15.7%, wema 6.9% and fidelity bank 18.3%. If all the banks that have been having input wastes will be perfectly technical in efficiency, they have to reduce their inputs by the percentage of their input wastes with the same level of outputs. On the other hand, they can maintain the present level of inputs if they will be efficient enough to increase the outputs level by the percentage of input wastes so as to benchmark with the perfectly efficient banks.

Deep understanding is revealed by the graph of technical efficiency in figure 1 above, where banks that were excellent in their efficiency score were clearly shown by the graphs. On the graph of technical efficiency, zenith bank, GT bank and Access bank hold the efficiency frontier fully and consistently, whereas others disperse away from the frontier.

6. Conclusion

In this research, DEA was used to analyse the efficiency of major representatives of commercial banks in Nigeria and it can be seen that most of the banks were satisfactorily efficient. The average technical efficiency of the banking sector ranges above 80% via technical and it indicated the satisfactory conversion of inputs into outputs. Most of the banks selected were almost equally efficient the same way. There exist banks like GTbank, Access bank, FCMB, Diamond, Fidelity, First bank and UBA which were to certain extent efficient and they have a consistency in their performance. However, GT bank showed a remarkable and consistent efficiency score among all other banks in the sample. Banks like Union and Wema can be a matter of concern as their efficiency scores were below satisfactory level sometime. The major factor resulting in the poor performance by these two banks and banks performing below the efficient frontier is their huge amounts of deposits, operating expenses and other assets used to pursue less sophisticated outputs. So here, either these banks possess blocked/non-performing assets or are not able to make a set off between the deposits and advances. These major banks in the country deserve to be paid a better attention of the regulators and the administrators. Though, the banking sector of Nigeria portrays a picture of a developing economy, moving towards being a developed economy through continuous efficiency improvement. There is large room for improving efficiency score of most of the banks. Therefore, the only way to better meet the challenge of increased competitive pressure would be to increase technical and allocative efficiency which will determine an overall efficiency. To the larger extent, size and resources of the banks are good proxy for better management; therefore, banks ought to appoint professional bankers and managers in order to adopt the appropriate policies leading to a better use of their resources. Continuous development of human resources through training is also necessary in order to keep up with the productivity, improving cost-saving and rapid changes in techniques, financial instruments and technological development in banking. Finally, performance of the banking sector is a research avenue worth pursuing in this regard because of its nature as a driver of economy.

7. Recommendation

It is therefore important that sound macroeconomic, sectorial and structural policies are applied to improve internal balance, ensure external sector performance and stimulate the productivity base and industrial sector of the Nigerian economy.

Likewise, relatively efficient banks, those that are able to manage operations more productively to an extent, should run their operation with lower production costs, and in turn offer more reasonable loan terms and gain larger market shares which will keep them on the efficient frontier.

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