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COST AND PROFIT EFFICIENCY AND MANAGEMENT BEHAVIOUR OF COMMERCIAL BANKS (EVIDENCE FROM TANZANIA)

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ABSTRACT

Using non-parametric technique (the Data Envelopment Analysis - DEA) for data from 1998 to 2011, we investigate the cost and profit efficiency and management behaviour of 25 Tanzanian commercial banks. We examine the influence of ownership, bank profile, size, and corporate structure on bank efficiency. The overall results show that commercial banks in Tanzania are relatively more profit efficiency than cost efficiency. Domestic banks appear to be more cost efficient while foreign banks appear to be more profit efficient. Big banks found to be more cost and profit efficient compared with small banks, and listed banks appear to be more cost efficient than unlisted banks. On management behaviour, commercial banks are found to neither support "bad management" nor "bad luck" hypothesis.

Keywords: Tanzania commercial banks, Cost efficiency, Profit efficiency, Bad luck, Bad management, DEA.

1. INTRODUCTION

In any economy, the financial sector is the engine that drives economic growth through efficiency allocation of resources to productive units. In recent years, African banks have experienced major transformation in both competition and its operating environment. These changes have affected its structure and performance. Deregulation, technological change, and globalization financial market have affected all banks operations and accordingly have influenced bank efficiency.

Investigation of bank efficiency is important to both microeconomics and macroeconomic point of view (Berger and Mester, 1997). From the microeconomic perspective, the issue of bank efficiency is important; given the financial reform undertaken by Tanzania to allow, foreign banks to participate in market economy resulted to change in ownership in most of the banks. Banks play

important role as a financial intermediation and as an engine for economic development especially in Tanzania where other financial sectors like stock markets and bond market not well developed.

This paper seeks to contribute to the banking efficiency literature in three folds. First, it examine a little explored case of African economy with banking sector that undergone major transformation. The period investigated is post privatization where number of banks changes ownership by either merger or acquisition. Second, we evaluate role of foreign banks, listed and unlisted, small and big banks that not evaluated previously. Third, we examine the management behaviour of the banks to evaluate the causes of inefficiency in banking sector.

2. TANZANIA BANKING SECTOR

Tanzania is a country formed by two former states (Tanganyika and Zanzibar). While Tanganyika has its independence from Britain in December 1961, Zanzibar had its independence in December 1963 that survived for only a month before bloodshed revolutionary that overthrow Arab Sultan of Oman who was under British protectorate in January 12, 1964. In April 26, 1964, the two states merged to form a union and since known as United Republic of Tanzania (Tanzania). Nevertheless, Zanzibar remains with autonomous on all non-union matters, (matter that is not included in 1964 Articles of Union).

Tanzania economy show the impressive growth in recent years with a sustaining real growth of above 6 percent (6.7% in 2006; 7.1% in 2007; 7.4% in 2008, 6.7% in 2009; 6.5% in 2010 and 6.6% in 2011) well above the rate for sub Saharan Africa as a whole. Achievement of sustaining economic growth and preservation of macroeconomic stability represents major success, and significant improvements in many aspects of development. However, Tanzania remains a low-income country with per capita GDP below $700 in 2011. Service sector contribute 50.9 percent of the Tanzania economy followed by agriculture 26.4 percent and industry 22.6 percent.

Banking sector penetration in Tanzania is low by the international standards with bank branches concentrated in the economic heartland of the country, mainly in Dar es Salaam, Arusha, Mbeya, Mwanza and Zanzibar. Commercial banks in Tanzania could be subdivided into three major categories: large domestic banks; subsidiaries of the major international banks; and small banks. Banking industry is dominated by foreign banks and is much concentrated where five largest banks account for more than two thirds of assets, loans, and deposits. Out of big six (top six) it is only two banks, National Bank of Commerce (NBC) and Cooperative Rural and Development Bank (CRDB) have significant domestic share holdings. Despite the privatization policy that allows foreign banks to participate in banking industry, the banking market in Tanzania is still relatively small.

2.1. Banking Sector Reforms in Tanzania

Starting early 1990s, the Government of United Republic of Tanzania (URT) implemented series of reforms in financial and banking sector aimed at reducing its dominant in the role of financial sector. This followed by poor performance of the state owned financial sector in the late

1980s where the non-performing loan reached to 65 percent of the loan portfolio, fiscal and operations were not separated and missing of an appropriate regulatory. With the passage of the Banking and Financial Institutions Act in 1991, private banks were permitted and the Bank of Tanzania (BOT) was vested with supervisory and regulatory controls to ensure the development of the prudent banking activities (Cull and Sprung, 2011). Following the Banking and Financial Institution Act of 1991, the first major foreign bank (Standard Chartered) started its operations in 1992, with other international banks following- Stanbic bank in year 1993, Citibank in year 1995, Barclays bank in year 2000 and other several small banks. Banking and Financial Institution Act of 2006 repeal and replace the 1991 Act. The new Act aimed to restructuring and modernizing banking industry in order to foster competition and enhance financial development, ensuring macroeconomic stability and long-term growth.

In 1996, the Cooperative and Rural Development Bank (CRDB) became the first state owned bank to be privatized. By 2000, the financial sector in Tanzania has been transformed with the banking industry leading the dynamism through expanded branch network, scope of operations and number of banking institutions (Simpasa, 2011). The fast expansion of banking institutions reflects the incentives created by removal of entry barriers.

3. METHODOLOGY

Literature in bank efficiency is based in two approaches. The first measures efficiency in terms of economies of scale and scope, and the second measure efficiency using the efficient frontier concept, or X-efficiency. This paper uses non-parametric efficiency measure developed by Charnes *et al.* (1978).

3.1. Non-Parametric Approach: Data Envelopment Analysis (DEA)

For decades, Data Envelopment Analysis (DEA) has become a very popular linear programming technique used as an invaluable benchmarking tool in examining efficiency in banking industry. Leibenstein and Maital (1992) argue that DEA is the superior method for measuring overall technical inefficiency. Data Envelopment Analysis is a deterministic methodology for determining the relatively efficient production frontier based on the empirical data on chosen inputs and outputs of a number of entities called Decision Making Units (DMUs). Since the original study by Charnes *et al.* (1978) considerable amounts of published, research-using DEA has appeared.

Emrouznejad *et al.* (2008) evaluates research in efficiency and productivity for 30 years using DEA and evidence that there are 1621 papers published in 20 journals that that have published the greatest number of DEA papers. They further evidence that the number are increased from time to time where from 1995-2003 the number of publication was 226 per year and increased to reach 360 per year from 2004-2006.

Charnes *et al.* (1978) introduce CCR-Model. This model measures the efficiency of each DMU, which obtained as a maximum of a ratio of total sum of weighted outputs to total sum of weighted inputs. Consequently, the efficiency can be defined as follow.

$$Efficiency = \frac{Weighted\ sum\ of\ outputs}{Weighted\ sum\ of\ inputs}$$

The weights for the ratio are determined by the restriction that the similar ratios for every DMU have to be less than or equal to unity, thus reducing multiple inputs and outputs to a single "virtual" input and single "virtual" output without requiring pre-assigned weights. Therefore, the efficiency score is a function of the weights of the "virtual" input-output combination. Suppose that there are *n* DMUs, each with *m* inputs and *s* outputs, relative efficiency score of a given DMU0 is obtained by solving the following linear programming model.

$$\max h_0(u,v) = \frac{\sum_{r=1}^{s} v_r y_{r0}}{\sum_{i=1}^{m} u_i x_{i0}} \tag{1.1}$$

subject to

$$\frac{\sum_{r=1}^{s} v_r y_{rj}}{\sum_{i=1}^{m} u_i x_{ij}} \le 1 ; j = 1,2,\ldots\ldots,n$$

$$u_i \ge 0 ; i = 1,2,\ldots\ldots,m$$

$$v_r \ge 0 ; r = 1,2,\ldots\ldots,s$$

where

x ij = the amount of input *i* utilized by the *j*th DMU

y rj = the amount of output *r* produced by the *j*th DMU

u i = weight given to input *i*

v = weight given to output *r*

Following the Charnes *et al.* (1962), one can select a representative solution (*u*, *v*) for which

$$\sum_{i=1}^{m} u_i x_{i0} = 1 \tag{1.2}$$

Hence, the denominator in the efficiency score *h*0 shown above is set equal to one, the transformed linear programming model for DMU0 can be written as follow.

$$\max z_0 = \sum_{r=1}^{s} v_r y_{r0} \tag{1.3}$$

subject to

$$\sum_{r=1}^{s} v_r y_{rj} - \sum_{i=1}^{m} u_i x_{ij} \leq 0 \; ; \; j = 1,2,\ldots\ldots,n$$

$$\sum_{i=1}^{m} u_i x_{i0} = 1$$

$$u_i \geq 0 \; ; \; i = 1,2,\ldots\ldots,m$$

$$v_r \geq 0 \; ; \; r = 1,2,\ldots\ldots,s$$

The linear programming model shown above will be run *n* times in identifying the relative efficiency scores of all the DMUs. Each DMU selects input and output weights that maximize its efficiency score. Generally, a DMU is considered efficient if it obtain a score of 1.00, implying 100% efficiency; whereas a score of less than 1.00 implies that it is inefficient. Maximizing the fraction from equation (5.2) can be accomplished by minimizing the denominator of the fraction and normalizing the denominator to one (Lehmann *et al.*, 2004).

$$Min \sum_{r=1}^{m} u_{i,} x$$

Subject to: $$\sum_{r=1}^{s} v_r \, y_r = 1$$

$$- \sum_{r=1}^{s} v_r \, y_{r\,j} + \sum_{r=1}^{m} u_{i,} x \geq 0, \qquad j = 1, 2 \ldots n$$

$$v_r \geq 0 \qquad r = 1,2,\ldots.s$$

$$u_i \geq 0 \qquad i = 1,2, \ldots m$$

The duality theory from linear programming suggests that there is a dual program for each original linear program and the solution are always equal (Gale *et al.*, 1951)

3.2. DEA for Profit Maximization

The profit-maximization problem of a multiple outputs, multiple inputs firm facing inputs and outputs prices *w* and *p*, respectively, can be formulated as the following DEA problem:

$$\text{Max} \sum_{r=1}^{m} p_r y_r - \sum_{i=1}^{n} w_i x_i \qquad (1.4)$$

Subject to $$\sum_{j=1}^{N} \lambda_j y_{rj} \geq y_r (r = 1,2,\ldots.,m);$$

$$\sum_{j=1}^{N} \lambda_j x_{ij} \leq x_i (i = 1,2,\ldots.,n);$$

$$\sum_{j=1}^{N}\lambda_j = 1;$$

$$\lambda_j \geq 0; (j = 1,2,....,N).$$

The profit maximizing input and output quantities $x_i^*(I=1,2,...,n)$ and $y_r^*(r=1,2,...,m)$ are obtained along with the other decision variables λ_j^* $(j=1,2,...,N)$ at the optimal solution of this problem. An important point need to be noted in this context is that, the optimal value of the objective function $\Pi^* = p'y^* - w'x^*$ is the maximum profit that the firm can earn.

3.3. Tests for Management Behaviour

Following Berger and De Young (1997) examination of problem loan and cost efficiency in commercial banks, this study examines the relationship between loan loss provision and bank efficiency for Tanzanian commercial banks. The possible relationships between the variables entail different mode of management behaviour. This management behaviour is measured by testing the four hypotheses, namely bad luck, bad management, skimping, and moral hazard. However, this study limited only to the measure of bad luck and bad management for similar reasons pointed out by Podpiera and Weill (2008). First, small sample size used under this study compel to exclude the lagged variables for capitalization form the equation explaining loan loss provision and cost efficiency. Second, inclusion of capitalization intends to measure the moral hazard, which is not included in this study. Third, Berger and De Young (1997) argue that capitalization should be included in the model to avoid biasness owing to omitted variables. Nevertheless, the problem of omitting variables could be observed only when OLS estimation is used. This study uses the GMM dynamic panel estimators, which take care for the problem of omitted variables. In order to test the hypotheses, Granger causality framework consistent with the data employed. The Granger causality model under this study is specifies as follow:

$$LLP_{i,t} = f_1 (LLP_{i,lag}, ... EFF_{i,lag}) + \varepsilon_{1i,t} \quad (1.5)$$

$$EFF_{i,} = f_1 (LLP_{i,lag}, ... EFF_{i,lag}) + \varepsilon_{2i,t} \quad (1.6)$$

Where, LLP is the loan loss provision to total loan, EFF efficiency scores that measure management behaviour.

Equation 1.5 above measures the bad management hypothesis and therefore this study predicts s to have negative relationship between loan loss provision and lags of the bank efficiency scores. A positive relationship between these two variables suggests skimping behaviour. Literature suggests that the more efficient banks to have a skimping behaviour. On the other hand, equation 1.6 tests the bad luck hypothesis and therefore expected to have inverse relationship between cost efficiency and lags of the loan loss provision. From equation 1.5 if the total effect of cost efficiency is negative and significant, the bad management hypothesis is concluded. Thus, bad management is

tested using the estimated parameters of the equation 1.5 and bad luck hypothesis is tested using the estimated parameter of equation 1.6.

3.4. Data Description

Data used in this study comprises commercial banks operating in Tanzania that are listed in the Bankscope database over the period 1998-2011. This database reports published financial statement from financial institutions worldwide.

4. EMPIRICAL RESULTS

4.1. Cost and Profit Efficiency Scores

Table 4.1 presents an average cost and profit efficiencies estimates for commercial banks in Tanzania over the period 1998 – 2011. High level of relative average cost and profit efficiencies scores with low standard deviation suggests that most of the banks lie close to the benchmark of frontiers.

Table-4.1. Descriptive Statistics for cost and profit efficiency (1998 -2011)

Tanzania	**Cost Efficiency**		**Profit Efficiency**		
	Mean	Std. Dev	Mean	Std. Dev.	Obs.
Panel A: All banks	0.8219	0.1537	0.8259	0.2155	198
Panel B: Local banks	0.8320	0.1768	0.7986	0.2478	72
Panel C: Foreign banks	0.8204	0.1646	0.8294	0.2788	129
Panel D: Old banks	0.7958	0.3023	0.8776	0.2431	45
Panel E: New banks	0.8245	0.1485	0.8127	0.2333	135
Panel F: Big banks	0.9132	0.2029	0.8961	0.3165	43
Panel G: Small banks	0.7972	0.1748	0.8085	0.2650	140
Panel H: Listed banks	0.9536	0.1366	0.7958	0.4982	28
Panel I: Unlisted banks	0.8071	0.1706	0.8279	0.2385	154

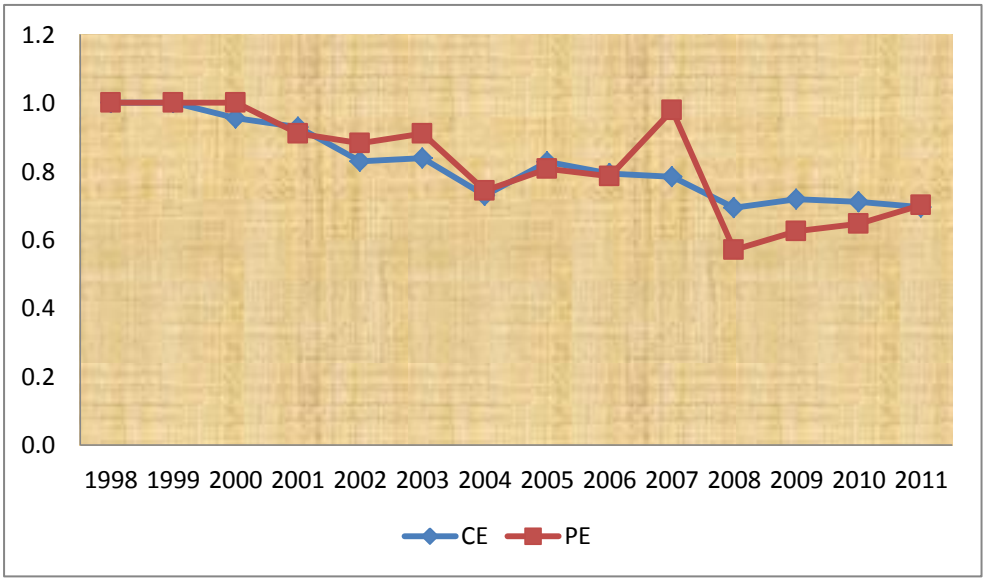
Panel A of the Table 4.1 illustrate that mean cost efficiency is 0.8219 while profit efficiency is 0.8259. The results show substantial levels of inefficiency demonstrating that commercial banks in Tanzania have opportunity to improve their performance. The results suggest that banks in Tanzania have slacks and are not fully utilizing the available resources to produce the same level of outputs. The cost efficiency mean score of 0.8219 suggests that, an average bank in Tanzania has a cost inefficiency of 0.1781which indicating that commercial banks in sample could further reduce cost by 17.28 percent for the same level of output with the best practice banks.

The results signify that average commercial bank in Tanzania could have used only 82.19 percent of the resources actually utilized to produce the same level of output. Thus, there is a room for banks to cost savings if they had employed their inputs more efficiently and managed to choose proper input mix as against their competing demands.

The average profits efficiency score is 0.8259 suggesting that there is an inefficiency of 0.1741, which put forward that banks could further improve their profits by 17.41 percent to match its performance with the most profit efficient banks.

The overall results of cost and profit efficiency score noted that commercial banks in Tanzania banks are relatively more profit efficient than cost efficient. That mean banks are more efficient in using their ability to generate profits than using their resources to reduce costs. These results also suggest that there is deterioration in cost efficiency where it drop from 100 percent in years 1998 and 1999 to reach 69.56 percent in year 2011 as shown in figure 4.1.

Fig-4.1. Cost and Profit Efficiency of Commercial Banks in Tanzania



Note: CE= Cost Efficiency, PE= Profit Efficiency

4.2. Efficiency of Domestic versus Foreign Banks

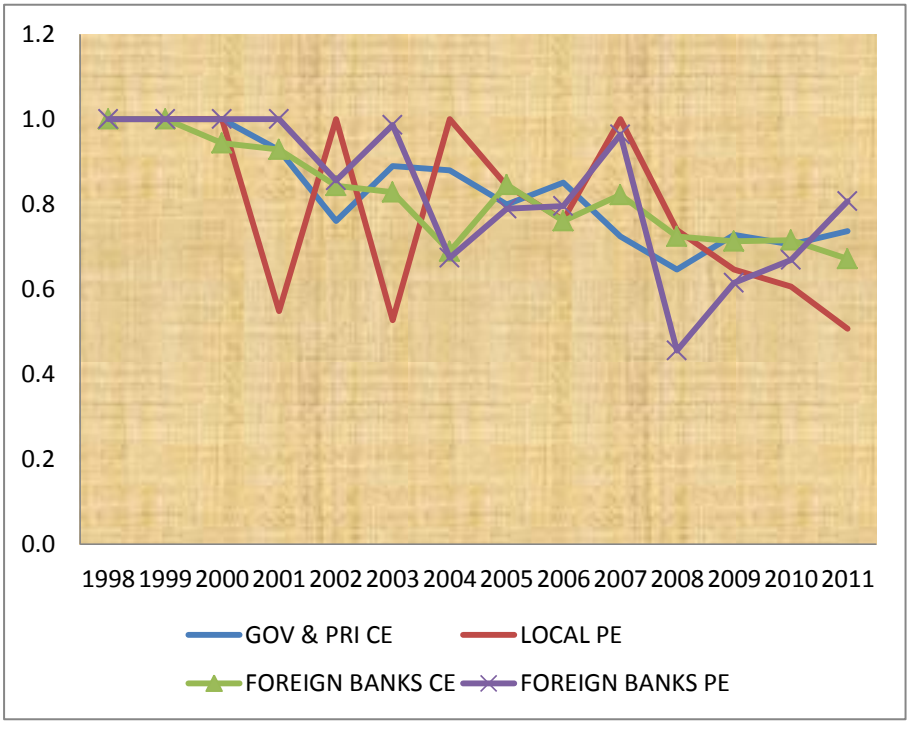
The comparison of domestic and foreign banks findings reveal that domestic banks are more cost efficient than foreign banks while foreign banks are more profit efficient than domestic banks. The average cost efficiency score of domestic banks is 0.8320 and average profit efficiency score is 0.8990 while mean score of cost efficiency for foreign banks found to be 0.8204 with standard deviation of 0.1135 and mean score of profit efficiency of 0.9378 with standard deviation of 0.0586.

These results imply that an average domestic commercial bank in Tanzania could further reduce their costs by 16.8 percent compared with foreign banks, which can further reduce their cost by 17.96 percent for the same level of output. On the contrary, average profit efficiency score of domestic banks found to little lower compared with that of foreign banks.

The average score is 0.7986 for domestic banks suggest that for domestic banks to match their performance with most profit efficient banks they could further improve their profits by 20.14 percent compared with foreign banks that could further improve their profits by 17.06 percent. Thus, the results suggest that on average domestic commercial banks in Tanzania is less profit efficiency in compared with foreign banks by 3.08 percent. The results partial verified by

Okeahalam (2008) who provide evidence that foreign banks in Tanzania are more efficient compared with domestic banks.

Fig-4.2. Cost and profit efficiency of Local and Foreign banks in Tanzania

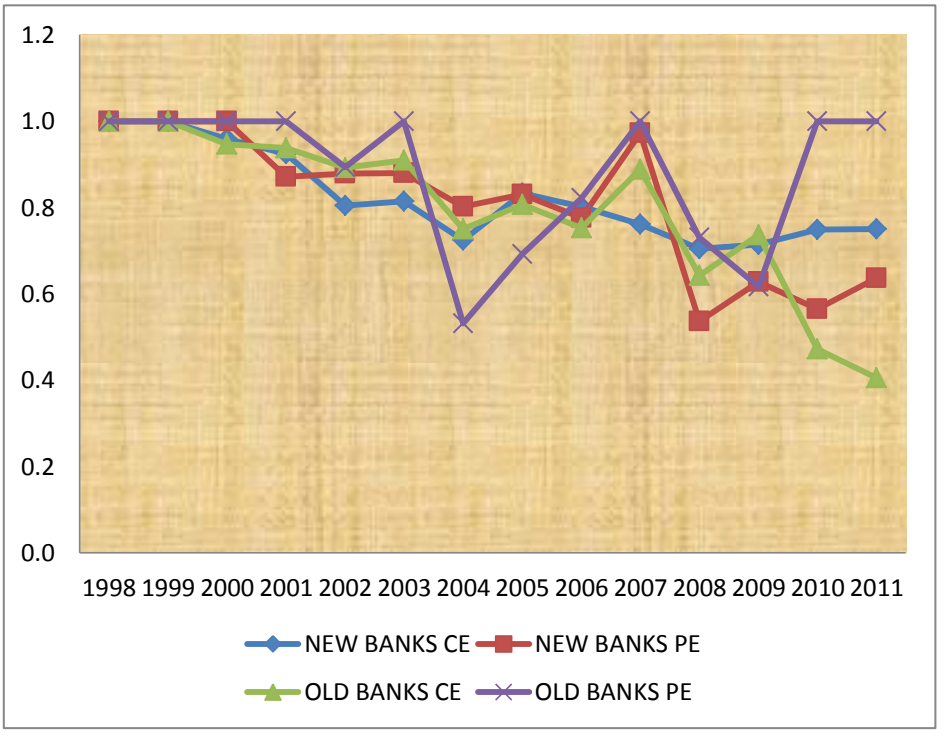


4.3. Efficiency of Old versus New Banks

Panel D and E of Table 4.1 contain summary statistics on age and overall efficiency of cost and profit scores of commercial banks in Tanzania. The results show that, new banks are relatively more cost efficient than old banks. The mean score cost efficiency of new banks is 0.8245 compared with mean score of 0.7958 of the old banks. These results implies that for the old banks to effectively compete with the most cost efficient banks, they need further reduce their cost by 20.42 percent while for the new banks they should further reduce their cost for 17.55 percent.

The results from profit efficiency scores show that old banks are relatively more profit efficient compared with new banks with mean score of 0.8776 compared with that of new banks, which show mean score of 0.8127. The interpretation of the scores is that for old banks to match its performance with the most profit efficient banks, they need further improve their profits by 12.24 percent while new banks need further improve their performance by 18.73 percent. Overall, these results reveal that, new commercial banks in Tanzania are more cost efficient while old banks are relatively more profit efficient.

Fig-4.3. Cost and profit efficiency of Old and New banks in Tanzania



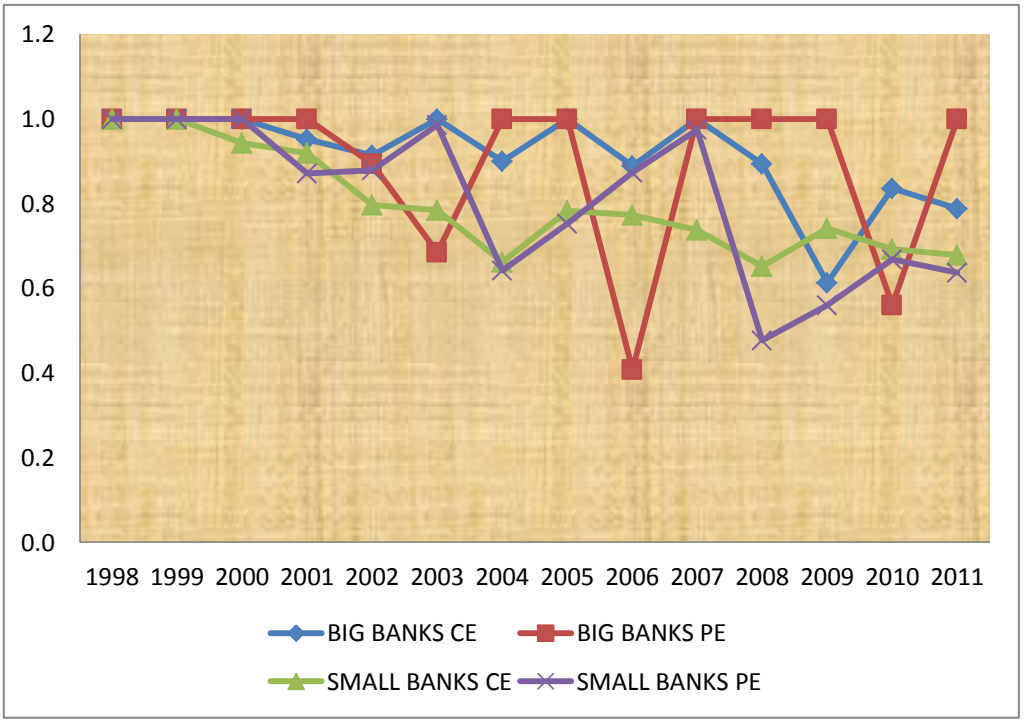
4.4. Efficiency of Big versus Small Banks

Empirical studies provide mixed and inconclusive results on relationship between size of the banks and efficiency scores. While some studies evidenced that large banks are the most cost and profit efficiency (Tecles and Tabak, 2010; Manlagnit, 2011) some evidenced that small banks are profit efficiencies than medium and large banks (Mamatzakis *et al.*, 2008). This section presents the impact of bank size on efficiency scores for commercial banks in Tanzania.

Panel F and G of Table 4.1 show that on average big banks are more cost efficient than small banks. The mean scores of the big banks are 0.9132 while that of small banks is 0.7972. The findings of these results suggest that for an average big commercial bank to improve and meet the level of most cost efficient banks it need further reduce its cost by 8.68 percent while for an average small bank further improve its efficiency and compete with the most cost efficient bank it need further reduce its cost by 20.28 percent.

The findings on profit efficiency demonstrate that the scores for the big commercial banks are more profit efficient than small banks. The profit mean score for big banks is 0.8961 compared with mean score of 0.8085 for small banks. These findings implies that for the big banks to match with the most profit performance banks it needs further improve their profits for 10.39 percent compared with small banks that needs further improve their profits by 19.15 percent. Thus, the findings unveil that the big banks in Tanzania are highly cost and profit efficient compared with the small banks. Hence, big banks are well utilized their resources to produce the same level of outputs as well using their ability to improve their profit compared with small banks.

Fig-4.4. Cost and profit efficiency of Big and Small banks in Tanzania



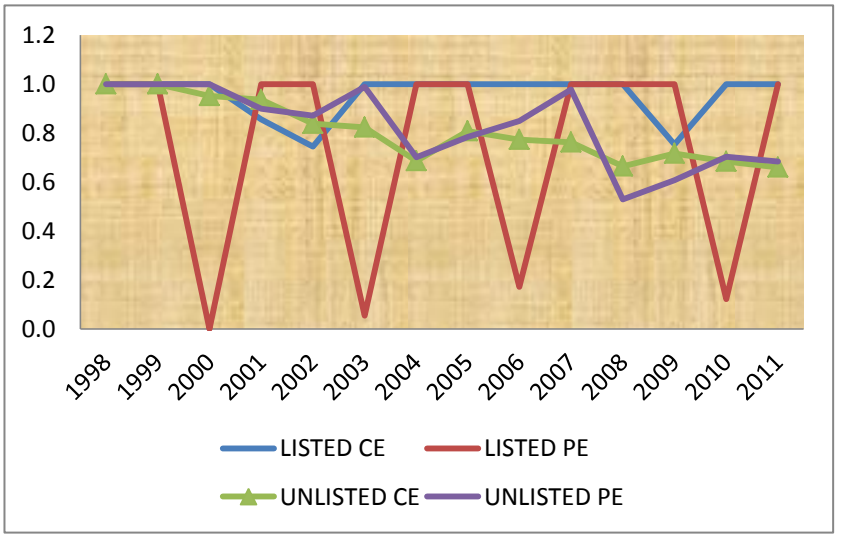
4.5. Efficiency of Listed versus Unlisted Banks

The results on panel H and I of the Table 5.6 demonstrate that listed commercial banks in Tanzania are more cost efficient than unlisted commercial banks. The results show a mean score of 0.9536 for the listed banks compared with mean score of 0.8071 for unlisted banks. Thus, these results suggest that for listed banks to operate at the maximum efficiency they needs further reduce their cost by 4.64 percent while unlisted banks needs further reduce their costs by 19.29 percent for the same level of output.

The results on profit efficient scores of the listed banks show that, the listed commercial banks in Tanzania are less efficient compared with unlisted commercial banks. The mean score of listed commercial banks is 0.7958 compared with mean score of 0.8279 for the unlisted banks. These results suggest that for the listed banks to match their performance with the most profit efficient banks they need further improve their profits by 20.42 percent and for the unlisted banks to go with most profit efficient banks they need further improve their profits by 17.20 percent.

These results imply that listed banks relatively more cost efficient and relatively less profit efficient compared with unlisted banks. Thus, listed banks are more efficient in utilizing their resources to reduce costs but slightly less efficient in using their ability to generate profits. The results partly verified a market hypothesis that banks whose shares are listed at stock market are more efficient to compare with those whose share are not listed at stock market as listed banks show high level of cost and profit efficiencies.

Fig-4.5. Cost and profit efficiency of Listed and Unlisted banks in Tanzania



4.6. Empirical Results in Management Behaviour

Bad luck hypothesis suggests that exogenous events reducing asset quality as a result caused a decrease in cost efficiency. Thus, bad luck hypothesis envisages that the sum of the lagged loan loss provision to total loan coefficient in cost efficiency should be negative. The focus is on the sum of the lagged coefficient because the sum measure the total effect of past loan loss provision to total loan on current cost efficiency.

4.6.1 Testing for "Bad Luck'' Hypothesis

Table 4.2 presents estimate of Granger causality test in the X-efficiency and test for bad luck when exogenous increases in loan loss provision resulted to reduction in bank cost efficiency.

Results for commercial banks in Tanzania show positive coefficients to the lags of the loan loss provision to total loan implying that change in loan loss provision to total loan used as a proxy for non-performing loan do not Granger cause changes in cost efficiency. This finding, therefore, inconsistent with the bad luck hypothesis, in which non -performing loans persuade cost efficiency.

4.6.1 Testing for "Bad Management'' Hypothesis

According to Berger and De Young (1997) bad management hypothesis predicts the sum of the coefficients on the cost efficient lags in the non-performing loan should be negative suggesting that inefficiency take place before towering non-performing loans. A negative sign to the sum of the relationship between loan loss provision and the lagged cost efficiency indicates bad management. When the sum of the coefficient happened to be positive, skimping hypothesis, prevail. Table 4.2 reports the results from testing bad management hypothesis. The lagged sum of the cost efficiency show positive coefficients, suggesting that the bad management hypothesis do not apply for commercial banks in Tanzania. Thus, bad luck or bad management does not cause the inefficiency

of commercial banks in Tanzania. The results suggest that there might be other cause of inefficiency, which may be skimping or moral hazard, which no tested by this study.

Table-4.2. GMM estimate of Granger causality for "bad luck'' and "bad management" hypotheses

Bad Luck Hypothesis test		**Bad Management Hypothesis test**	
Intercept	0.463498*** [0.1160485]	Intercept	3.2809*** [0.61627]
Δ CE_{t-1}	0.399272*** [0.143848]	Δ $LLP\text{-}L_{t-1}$	0.3708*** [0.01225]
Δ CE_{t-2}	-0.108291* [0.0595104]	Δ $LLP\text{-}L_{t-2}$	-.0055045 [.0196029]
Δ CE_{t-3}	-0.0516409 [0.0409236]	Δ $LLP\text{-}L_{t-3}$	0.0126*** [0.00860]
Δ CE_{t-4}	0.0014281 [0.0355527]	Δ $LLP\text{-}L_{t-4}$	0.0602*** [0.01679]
Δ $CE_{(total)}$	0.240768 [0.018]	Δ $LLP\text{-}L_{(total)}$	0.438096 [0.004]
Δ $LLP\text{-}L_{t-1}$	0.003278*** [0.0016561]	Δ CE_{t-1}	18.831*** [3.63933]
Δ $LLP\text{-}L_{t-2}$	-0.0020176 [0.0024915]	Δ CE_{t-2}	-7.685501 [5.07386]
Δ $LLP\text{-}L_{t-3}$	0.0005769 [0.0018431]	Δ CE_{t-3}	4.228493 [4.72769]
Δ $LLP\text{-}L_{t-4}$	-0.0000864 [0.0005194]	Δ CE_{t-4}	-3.7674** [1.80213]
Δ $LLP\text{-}L_{(total)}$	0.001751*** [4.718]	Δ $CE_{(total)}$	11.60659*** [-0.001]
AR(1) (P-value)	0.0075	AR(1) (P-value)	0.0093
AR(2) (P-value)	0.3568	AR(2) (P-value)	0.5756
Sargan (P-value)	1.0000	Sargan (P-value)	0.9671

Notes: ***, **, and * denote significant at 1%, 5%, and 10%, respectively. Standard errors are in parentheses

5. CONCLUSIONS

Tanzania has adopted significant financial sector reforms over the last two decades to adopt market economy policy framework championed by IMF, WB, Western countries, and their Allied International Agencies. Banking industry is one of the affected sectors that result to almost all banks to change their ownership and controlled by small group majority shareholders in most case foreigners. While there is abundant of cost and profit efficiency in US and Europe, there are very few studies done in Africa as general and to my knowledge, there is no such kind of study done in Tanzania in particular. Therefore, the main objective of this study is to fill the gaps in the literature to help address issues in Tanzania banking efficiency.

The findings of this study provide interesting results. Taking all banks together, banks in Tanzania found to be more profit efficiency than cost efficiency, while domestic, listed, and new banks found to be more cost efficiency than their counterparts were. On bank management behaviour, the result show that inefficiency of banks in Tanzania is not caused by neither bad luck nor bad management hypothesis.

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