Relationship between Asset Quality and Financial Performance of Commercial Banks Before and After Shifting Capital City Located to Dodoma Region, Tanzania

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***Abstract*— Commercial banks have a strategic and essential contribution to the growth of the national economy. The study examined the relationship between asset quality and financial performance of commercial banks before and after shifting capital city located to Dodoma region, Tanzania. Through a quantitative research approach coupled with panel data were generated through document reviews. The research location was carried out at National Microfinance Bank Plc (NMB), Co-operative Rural Development Bank (CRDB) and Tanzania Postal Bank (TPB) located in Dodoma Region. The population of this study comprised quarterly financial data from 2010-2020. A sample size of 120 observations calculated by taking the (quarterly) financial data of 10 years from three commercial banks so, Three (3) commercial banks was involved namely; NMB, CRDB and TPB. This study was employed purposive sampling procedure. The data was extracted from reliable source such as Bank of Tanzania (BOT) and Dar es Salaam Stock Exchange (DSE. The findings show that there is a relationship between asset quality and financial performance before and after shifting the capital city from Dar es Salaam to Dodoma Region (P-Value of 0.006),(0.003) and (0.005) CRDB, NMB and TPB respectively. It is, therefore, concluded that there is a statistically significant association between the shift of the capital city from Dar Es Salaam to Dodoma Region and financial performance of commercial banks in Tanzania before shifting capital city and after shifting the capital city. The study recommends that the Bank of Tanzania, international financial organizations and policymakers to supervise the operations of commercial banks to increase asset quality. This may be done by monitoring and mentoring to show good directions to the commercial banks.**

***Keywords*— Asset Quality, Financial Performance, Commercial Banks, Capital City, Dodoma, Tanzania**

I. INTRODUCTION

Commercial banks have a strategic and essential contribution to the growth of the national economy. There is sufficient evidence that comes from research to show that the flow of money from and to individuals and institutions and institution and individuals to the financial bank (Ongore & Kusa, 2013). Through these transactions, they produce returns to finance operational activities. They also create profit from sustainable the intermediation role which they play. These suffice to say that the financial performance of commercial banks has a significant effect with the financial performance of nations (Paulino & Mwambia, 2018). Excellent financial performance encourages investors to invest not only in the financial

institutions but also benefiting from credits to invest in entrepreneurship and enterprises. There is also an encouragement of extra portfolio and express concerning financial performance. However, it should be known that insufficiency banking performance causes banking breakdown and depression which has a negative effect on the financial performance (Ifeacho & Ngalawa, 2014). Another study conducted in Malawi revealed that shifting of capital city from Zomba to Lilongwe crated many challenges including fields planning, finance, provision service, population growth and employment. These studies concluded that asset qualities is indicator that influence the financial performance of commercial banks (DGL, 2015; Onkoba, 2014; Gizaw *et al*., 2015). Nevertheless, these studies could not suffice to explain the effect of the capital city in particular countries and, especially developing countries like Tanzania. There is a general understanding that the performance of banking in the SADC countries that commercial banks have their focus on generating capital, thus managers and investors are interested in profitability. Profit is also a matter of distress for managers and investors when making strategic decisions. All strategies calculated and the activities implemented are aimed at realizing this great goal. There are various ratios used to gauge the profitability of commercial banks. Performance variables can be represented by two substitute measures, namely ROA and ROE. In a study by Zribi and Boujelbene (2011), ROA, ROE and Net Interest Margin (NIM) are the main ratios measuring the profitability of commercial banks.

The research that was done in Tanzania about determinants of Non Performing Loans (NPLs) in commercial banks found that that loan interest rate, Gross Domestic Product (GDP), bank's loan supervision capacity and economic condition influence the level of NPLs. The empirical evidence

conducted about the performance of the South African banking sector in 1994 showed that asset quality has a positive effect on the measures of bank performance. This, however, depended on the previous theoretical expectations. The quality of assets revealed some signs of an amazing association with Return on Assets (ROA), while its connection with Return on Equity (ROE) is significant and positive as predictable (Ifeacho & Ngalawa, 2014). The beliefs of the public officials as reflected in the set policies are another limitation and Lilongwe is the best place to demonstrate this. A limited aptitude to provide a genuine counter-attraction to the major urban centre of Blantyre has been partially due to a short of strong administration promise to enforcing suitable policies (Deborah, 2010).

Tanzania forms another place to illustrate the effect of shifting capital city from one administrative area to another. The idea of shifting Tanzania's capital has a past going reverse to the 1973 (Kironde, 1993. But knowledge with Dodoma has revealed that the development is a hazardous one, chiefly when seen alongside the background of financial difficulties, and uncaring and unwilling administration officials (Kironde, 1993; Mubyopyo, 1975). In 2015, the fifth Government management under his excellence President managed to transfer officially the capital from Dar Es Salaam to Dodoma successfully albeit with some challenges as to that effect.This study explored the research gap that existed by examining the relationship between asset quality and financial performance of commercial banks before and after shifting capital city located to Dodoma region, Tanzania. Since 1973, Dodoma was announced to be Tanzania's capital city but government offices and activities were still conducted in Dar Es Salaam (Kironde, 1993). The official transfer of Government activities was made in 2015. However, the nature of the transfer created a lot of questions and challenges to many sectors, both private and government offices. Bank as major stakeholders in the development sector also was affected in one way or the other (Deborah, 2010). Dodoma Region also faced some changes due to an increase in population and new offices, infrastructure, health services, new investment, new leadership styles and a lot of economic opportunities to indigenous, investors and visitors. One of the major questions which remained answered is how the banks in Dodoma fit in these new and rapid changes and how the banks helped the Government to settle in Dodoma.

The empirical evidence available revealed that banking services in Dodoma are positively impacted following the increase in customers which in turn negatively affect operations (Ifeacho & Ngalawa, 2014). Previous research observed that the number of transactions in the bank increased where there was a shift of capital city (Deborah, 2010).Different kinds of literature existed but none of them could explain the result of shifting the capital city from Dar es Salaam to Dodoma, particularly on financial performance in commercial banks. It is this reason that this study examined the relationship between asset quality and financial performance of commercial banks before and after shifting capital city located to Dodoma region, Tanzania, involving three (3) Tanzanian commercial banks, namely the National Microfinance Bank (NMB), Cooperative Rural Development Bank (CRDB), and Tanzania Postal Bank (TPB) in Dodoma Region. These three (3) commercial banks in Tanzania were selected depending on three reasons. First, they have a high number of branches located at Dar es Salaam Region and Dodoma Region compared to other commercial banks. Second, these banks have many customers compared to other commercial banks in Tanzania and, finally, these banks have reliable documentation of official data because, for example, NMB and CRDB are listed at Dar es Salaam Stock Exchange (DSE) and TPB is owned by the government and, thus, its data could be obtained from the Ministry of Finance and Planning – Tanzania (MoFP). The review of the literature shows that financial performance has been widely researched as a stepping stone towards the examination of commercial banks in different countries. However, the literature on financial performance in commercial banks is scant to explain the situation before and after the shift of the capital city from Dar Es Salaam to Dodoma. Research has not been satisfactorily conducted in the area to inform the effect of shifting the capital city from Dar es Salaam to Dodoma.

II. LITERATURE REVIEW

Previous studied on financial performance in commercial banks by DGL (2015) examined the impact of financial performance to companies and stipulated that negative financial performance was typically associated with abnormal negative returns. On the other hand, positive financial performance was subjected to positive abnormal returns. Previous studies on financial performance of commercial banks; suggested that banks need to have effective management to improve the financial performance as the bank managers need to ensure bank practices practical management of risk in protecting the shareholders' interest and eventually favor the corporate ratings (Mohammed *et al.,* 2015; Adams *et al.,* 2003). Adams *et al.* (2003) found that the Ghanaian bank performance earning was not significant to Ghanian banks' financial performance. On the other hand, other factors like asset quality were significant to Ghanian banks' performance (Adams *et al.,* 2003). Previous studies done on banking sector performance by using signaling, agency and efficiency theories used secondary data and panel data research design to prove the fact about the banks. Also, studies like the relationship between asset quality and financial performance of commercial banks before and after shifting capital city located to Dodoma region, Tanzania. Could not inform the impact of the move of the capital city on the financial performance of commercial banks.

Previous studies revealed some effects on industries when the capital city shifted from Dar Es Salaam to Dodoma Region. For example, they revealed the existence of increased capital demands, increased regulatory pressures, alternative competition, A Slow economy and technology Platforms (Ifeacho & Ngalawa, 2014). However, none of the studies attempted to explain the effects of the shift on financial institutions despite the known changes, including the increase in population. Other research conducted observed that the population of Dodoma City increased from 2015 to 2020 by 20% and explanatory reasons for increasing the population are due to transfer of government activities from Dar Es Salaam

to Dodoma along with the increase in business opportunities. The empirical evidence from research in America and Europe shows that shifting of capital from one region to another affects the financial performance in commercial banks. They, therefore, recommended that asset qualities are the predictor of financial performance of commercial banks (Ifeacho & Ngalawa, 2014; Ongore & Kusa, 2013; Deborah, 2010). There is also evidence from research conducted in Asia and Africa that reveals that shifting of capital city from one region to another influences the financial performance in commercial banks and the studies. According to Ongore and Kusa (2013), the banking industry is a very important sector in a place where population growth is increased.

A. **Conceptual Framework;** the conceptual framework for this study is adopted from the literature reviewed and modified from theories. The relationship between independent and dependent variables of this study is described in Figure 1. Independent variable in this study is the effects of shifting capital city on financial performance. These include asset qualities. Independent variable can influence financial performance to improve the profits of the banks. In the conceptual framework, assets quality is added as a new variable whereby empirical evidence did not emphasize how it can affect the financial performance of the banks. When the financial performance improved, the economic growth of the country was high and, consequently, improved the living standard of the people.

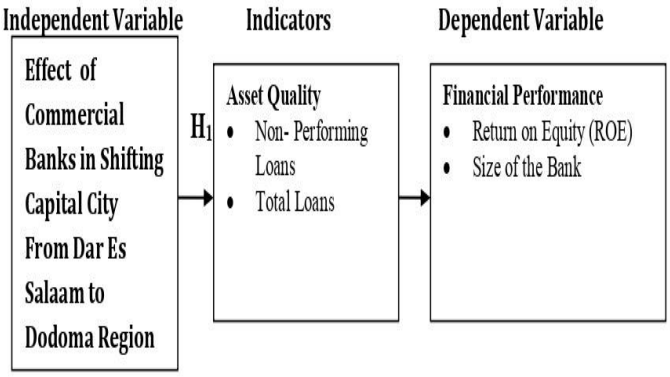

Figure 1: Conceptual Framework for the Study
Source: Constructed from Literature Reviews and Modified through Theories

III. RESEARCH METHODOLOGY

Through a quantitative research approach coupled with panel data research design were generated through document reviews because very flexible in the collection of data through a period. Also, the study used panel data research design because the design is suitable for comparison between an entity. The research location was carried out at National Microfinance Bank Plc (NMB), Co-operative Rural Development Bank (CRDB) and Tanzania Postal Bank (TPB) located in Dodoma Region. Dodoma Region was chosen following that the Region is a rising Capital City of Tanzania with a lot of opportunities in operating business. Also, the transfer of government activities from Dar es Salaam to Dodoma was the reason for selecting NMB, CRDB, TPB which are all located in Dodoma following the size of the banks in terms of branches and high capital compared to other commercial banks. Also, these banks existed before and after the shift of the capital city to Dodoma Region. The population of this study comprised quarterly financial data from 2010-2020. A sample size of 120 observations calculated by taking the (quarterly) financial data of 10 years from three commercial banks so, Three (3) commercial banks was involved namely; NMB, CRDB and TPB. The NMB, CRDB, and TPB Banks were selected purposively. The data was extracted from reliable source such as Bank of Tanzania (BOT) and Dar es Salaam Stock Exchange (DSE.

A. Econometric Model Development; Multiple Linear Regression Model (MLRM) was used to examine the relationship between asset quality and financial performance of commercial banks before and after shifting capital city located to Dodoma region, Tanzania. The reason of selecting the multiple linear regression model is due to the fact that the dependent variable of the study is *"continuous in nature"* so that, the MLRM is appropriate for this research. The equations are expressed as follows:

$$ROA_t = \beta_0 + \beta_1(NPL) + \beta_2(TL) + \varepsilon \ldots\ldots\ldots\ldots (i)$$

Whereas: ROA_t = Return on Asset; β_0= Constant Term; NPL= Non- Performing Loans; *TL*= Total Loans; ε = Error Term

$$ROE_t = \beta_0 + \beta_1(NPL) + \beta_2(TL) + \varepsilon \ldots\ldots\ldots\ldots (ii)$$

Whereas: ROE_t = Return on Equity; β_0= Constant Term; NPL= Non- Performing Loans; *TL*= Total Loans; ε = Error

IV. RESULTS AND DISCUSSIONS

4.1 Right Multicollinearity

The model needs defective correlation of the independent variable, which is resolute by any other explanatory variable. Stipulation multicollinearity exists; that is, the association between explanatory variables is it is extremely complicated to divide the outcome of person in explanatory variables on the forecasted result (dependent variable). Therefore, regressions examination does not succeed to disclose a true association between the dependent variable and explanatory variables. According to Deborah (2010), the right multicollinearity exists if the correlation coefficient between explanatory variables is unitary. Therefore, the findings indicate the deficiency of right multicollinearity (1 or 100%) using a correlation method.

Table 1: Correlation Matrix showing Level of Multicollinearity

Variables (In TZS)	(1)	(2)	(3)
(1) Non-Performing Loans (NPL)	1.000		
(2) Total Loans	0.260	1.000	
(3) ROE	0.917	0.238	1.000

Source: Research Findings (2021)

Non–performing loans shows to have a small correlation with total loans (0.260). This applied that the assumption concerning the lack of right multicollinearity has not been dishonored. Nevertheless, additional assumptions, counting the lack of heteroscedasticity are dishonored.

4.2 Heteroscedasticity

The calculation of ROE for known values of explanatory variables becomes incompetent since the variation of the result includes the variation of both residuals and of the non-parameter estimate. Nevertheless, some scholars, like Saunders and Thornhill (2007) criticize that the assumption of homoscedasticity is often dishonored in apply. This is due to the nature of variables. For example, utilization against income, when income modify, it is clear that consumption also change. Consequently, the variation of expenditure was due to the variation of both income and residuals.

Table 2 : Breusch-Pagan / Cook-Weisberg Results showing Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of GDP

chi2(1) = 3.20

Prob > chi2 = 0.0738

Source: Source: Research Findings (2021)

The P-Values of Breusch-pagan (0.0738) are less than 10 level of implication (10% or 0.1). So, the null hypothesis which states that the variation for lasting is uniform and, thus, it cannot be held. This implies that the supposition has been dishonored. Therefore, even if the estimators are linear and balanced, they lack still incompetent.

4.3 Unit Root Test

Dickey and Fuller (1979) extended a method for testing whether a variable has a unit root or is proportionate that the variable pursues an unequal walk. Hamilton (1994: 528–529) portrays the four separate luggage's to which the distended Dickey–Fuller test can be practical. The unacceptable theory is time after time that the variable has a unit root. The difference is whether the unacceptable theory incorporates a hover term and whether the deterioration used to get the test dimension incorporates a stable word and time pattern. Unit root test was thus scrutinized as obtainable Table 3.

Table 3: Dickey-Fuller Results for Unit Root Test

		Interpolated Dickey-Fuller				
	Test Statistic	1% Critical value		5% Critical value	10% Critical value	
Z(t)	-4.669	-3.75		-3	-2.63	
MacKinnon approximate p-value for Z(t) = 0.0001						
D.uhat	Coef.	Std.Err.	T	P>t	[95%Conf.	Interval]
Uhat						
L1.	-1.292	0.277	-4.670	0.000	-1.889	-0.694
_cons	5.65e+19	1.24e+19	4.560	0.001	2.98e+19	8.33e+19

Source: Research Findings (2021

The null hypothesis is that the changeable contain a unit root, and the option is that the changeable was produce by a stationary process. The coefficient of the Uhat and MacKinnon are statistically important at all levels of consequence (5%, 10%). This implies that the null hypothesis of a unit root is rejected. Therefore, the supposition of homoscesticity has been contented as shown in Table

4.4 Autocorrelation

Autocorrelation test carried out the universal requirement test of serial correlation in a time series suggested by MUbyopyo (1975). It can be practical to a univariate time series or as a post estimation command after OLS or active variables (IV) assessment. The null hypothesis of the test is that the time series is a touching standard of known order q, which could be zero or an optimistic value. The test believes the universal alternative is that autocorrelations of the time series are nonzero at lags greater than q. As for the wad of 1 period, the designed P-Value is 0.015 (Table 4.5). This applies that the null hypothesis shapes the continuation of a serial correlation which cannot be rejected. This is applied using old least regression created invalid T-Test value and F-Test value. So, changing variables or using widespread linear was more applicable.

Table 4: Autocorrelation Results Using Breusch-Godfrey

H0: q=0 (serially uncorrelated)				**H0: q=specified lag-1**			
HA: s.c. present at range specified				**HA: s.c. present at lag specified**			
lags	chi2	df	p-value	lag	chi2	df	p-val
1-1	5.952	1	0.0015	1	5.952	1	0.0015

Cumby-Huizinga test for autocorrelation (Breusch-Godfrey)
H0: Variable is MA process up to order q
HA: Serial Correlation Present at Specified lags >q

Source: Source: Research Findings (2021)

4.5 Linearity

Is a regression presumption where linear practical form the response variable y should be linearly connected to the independent variables X. The assumption speaks to the functional form of the model. A regression model is linear when all words in the model are also constant or a parameter increases by an explanatory variable. Figures 2, 3, and 4 show that the linearity association exists between total nonperforming loans and financial performance and earnings capabilities with financial performance. Finally, the combined graph of the variables shows a linear association between variable and, therefore, regression assumption grip.

To create a suitable conclusion from researcher regression, the residuals of the regression should track a normal distribution. The residuals are basically the error term or the dissimilarity between the experiential value of the needy variable and the predicted value. Figures 3 and 4 are the k-density commands to create a kernel density scheme with the normal alternative request that a normal density is overlaid on the plot. K-density stands for kernel density estimate. Kernel density estimation (KDE) is a non-parametric method to estimate the likelihood density purpose of a random variable. Kernel density opinion is a basic data flat problem where deduction about the population is made based on a limited data sample.

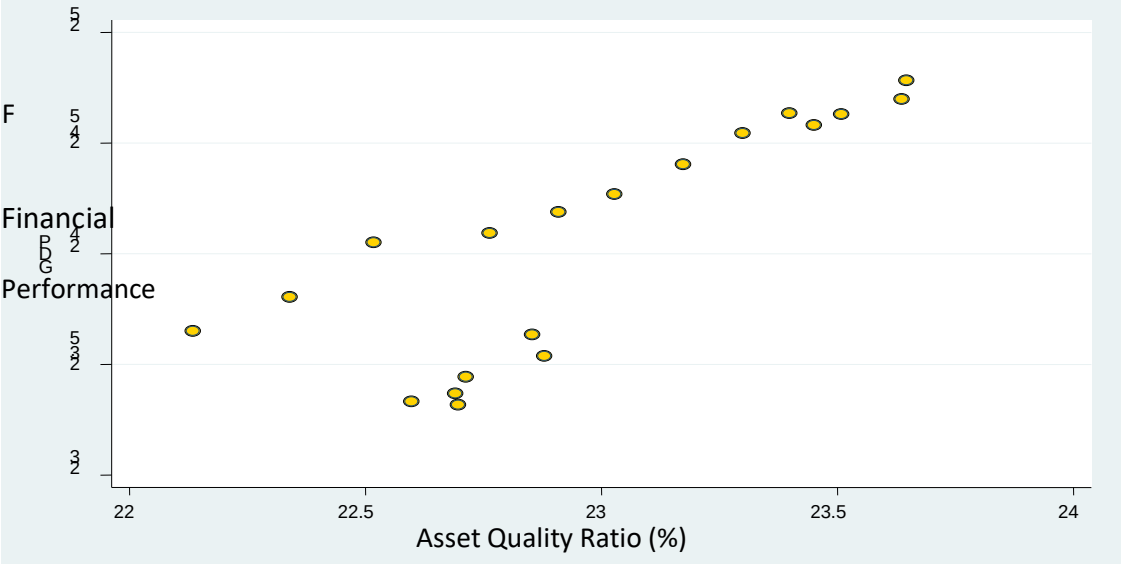

Figure 1: Linearity ROA vs Asset Quality Ratio

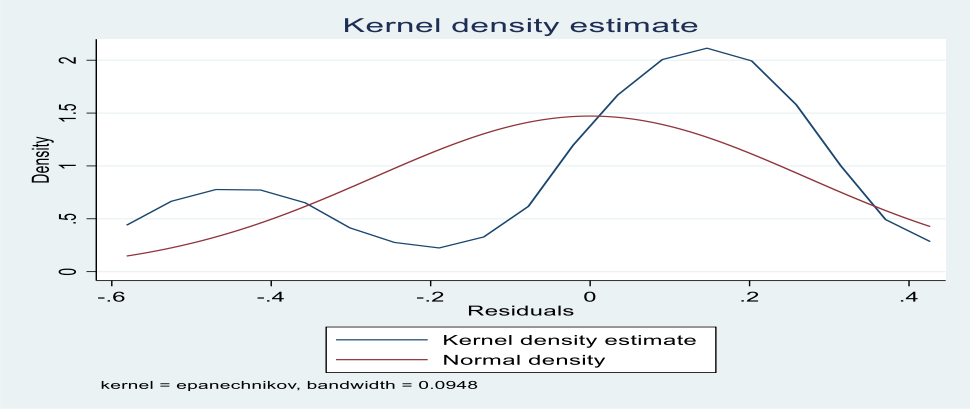

Figure 3: Kernel Normality Density Estimate

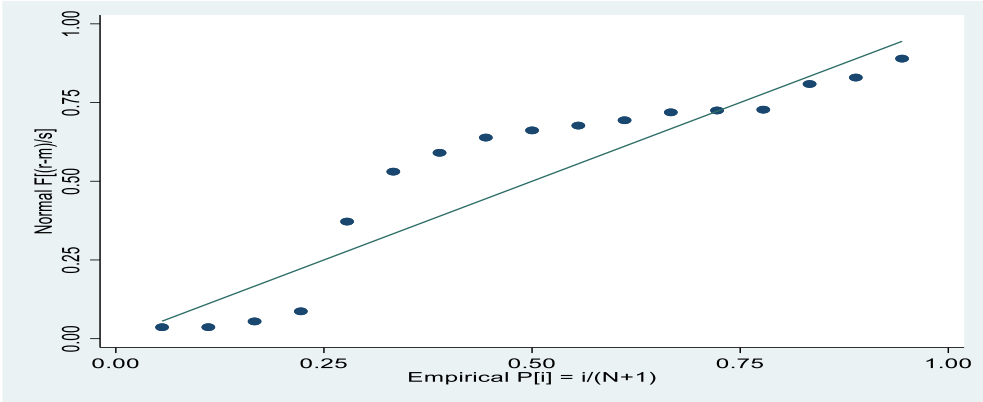

Figure 4: Normality

Table 5: Outliers

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. iqr r

   mean= -7.7e-10          std.dev.=   .2711          (n= 17)
 median=    .113     pseudo std.dev.=   .1857        (IQR=  .2505)
10 trim=   .0294

                                        low          high
                                    -------------------
                        inner fences    -.4644        .5377
                  # mild outliers       2             0
                  % mild outliers       11.76%        0.00%

                        outer fences    -.8401        .9134
                  # severe outliers     0             0
                  % severe outliers     0.00%         0.00%
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Source: Research Findings (2021)

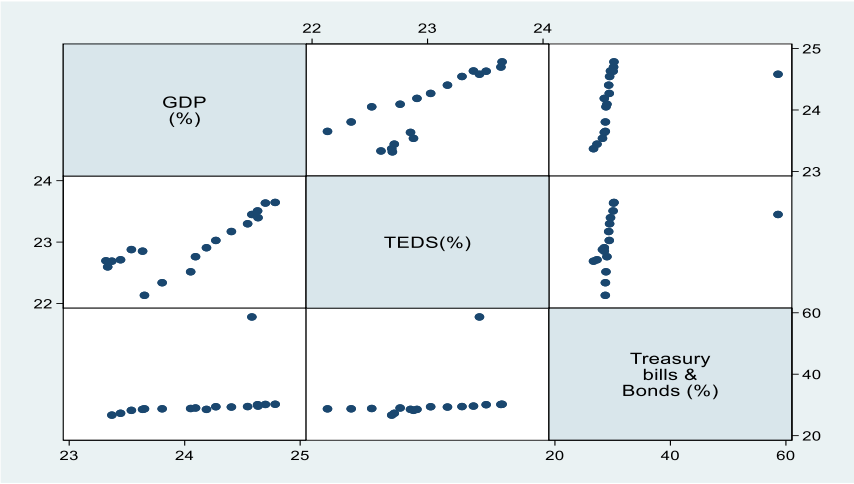

Figure 5: Shows the Influence of Variables
Source: Research Findings (2021)

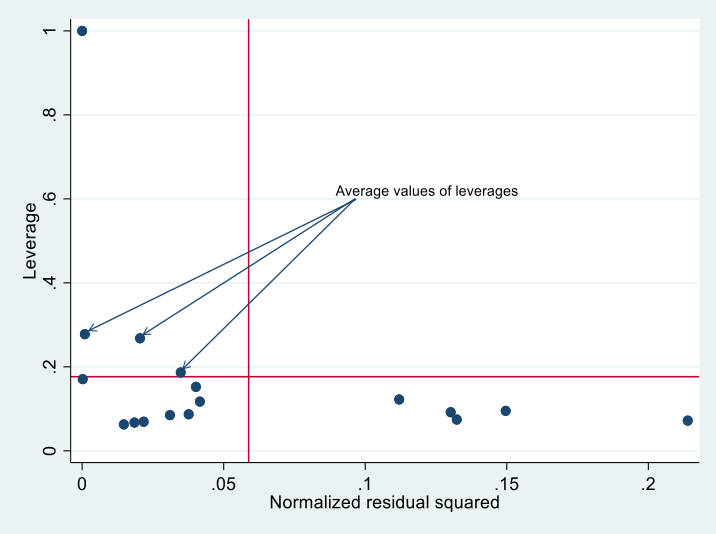

Figure 2: Leverage

Table 6 : Normality Linktest

Source	SS	df	MS		
Model	2.71462911	2	1.35731455	Number of obs	= 17
Residual	1.00160585	14	.071543275	F(2, 14)	= 18.97
				Prob > F	= 0.0001
Total	3.71623496	16	.232264685	R-squared	= 0.7305
				Adj R-squared	= 0.6920
				Root MSE	= .26748

ln_GDP	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	-31.6512	20.93589	-1.51	0.153	-76.55422	13.25182
_hatsq	.6769519	.4340464	1.56	0.141	-.253985	1.607889
_cons	393.6122	252.4078	1.56	0.141	-147.7488	934.9732

Source: Research Findings (2021)

Table 7: Hosmer and Lameshow Goodness of Fit Test

Step	Chi-square	Df	Sig.
1	9.810	8	0.279

Source: Research Findings (2021)

The collection test of model coefficients tests whether the model is statistically significant and can be further understood. From the reality that the model has a P-Value of 0.000 (Table 8) which below 0.05 this recommends that the model is statistically significant and can additionally be used for estimations since the largely model is statistically significant; χ 2(3) = 59.465, P < 0.05 as shown on Table 8.

Table 8: Omnibus Test of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	59.465	3	0.000
	Block	59.465	3	0.000
	Model	59.465	3	0.000

Source: Research Findings, 2021

The analysis revealed that there is an association between asset quality and financial performance that were observed to exist before and after shifting the capital city from Dar Es Salaam to Dodoma (P-Value 0.006).

4.6 The Relationship between Asset Quality and Financial Performance of Commercial Banks before and after Shifting Capital City to Dodoma Region

The tests conducted through this study show that there is statistically significant relationship between assets quality and financial performance before and after shifting capital city from Dar Es Salaam to Dodoma city with P-Value of 0.0001. This implies that the asset quality has an association with financial performance since the P- Value was 0.0001. Other researchers said assets quality and financial performance has a positive association (Ifeacho and Ngalawa, 2014; Kioko *et al.*, 2017).

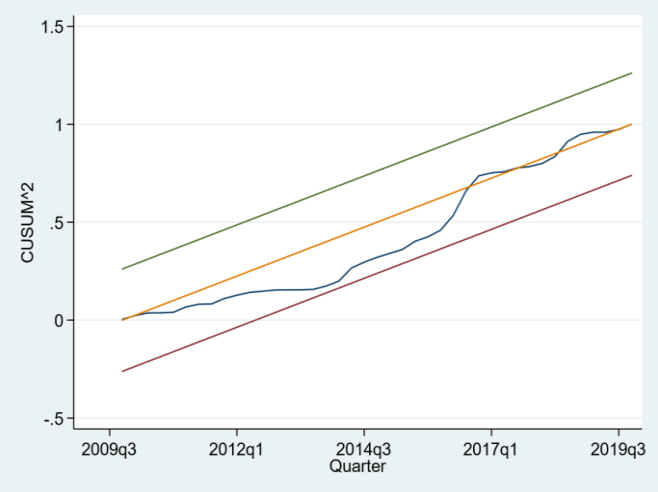

Figure 3: Model Stability (Cusum Chart)
Source: Field Data, 2021

V.CONCLUSION

The results show that assets quality has a positive effect on financial performance. This finding is consistent with the observation made earlier by Hitchner (2006) who found a significant correlation in the long run and short run between assets quality and financial performance. Also, Grant (2003) obtained similar findings which revealed that the long run relationship exists between assets quality and financial performance. Another study which was made to analyze both long term assets qualities and short term assets quality to check the effect of each on the ROA revealed that long term impacts have insignificant effects on financial performance. This is in agreement with DGL (2015) who established that a high level of assets quality is negatively correlated with financial performance mostly when assets qualities are below 90%. This is supported by Onkoba (2014) who established that there was no relationship between asset quality and financial performance. In contrast, short term relationship appears to have a positive significant impact on the financial performance. Kafidipe *et al.* (2021) also revealed that assets qualities have a significant positive relationship to economic growth.

The study recommends that the Bank of Tanzania, international financial organizations and policymakers to supervise the operations of commercial banks to increase asset quality. This may be done by monitoring and mentoring to show good directions to the commercial banks. The researchers suggest that the future researchers to expand number of observation also to add more commercial banks in order to ensure the data validity and reliability of data.

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