

THE IMPACT OF REGULATION AND SUPERVISION COMPLIANCE COSTS TO FINANCIAL INSTITUTIONS IN TANZANIA.

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Abstract: The role of banks and financial institutions in an economy is to provide means by which funds can be transferred from surplus units in the economy to deficit units. While playing this role, these institutions need to be regulated and supervised in order to have safe and sound banking systems. If not well implemented, however, these regulations entail substantial costs, which ultimately affect the banking system's efficiency. This paper examines whether or not supervision compliance costs are significant by applying regression analysis to the collected primary data. The results confirm the hypothesis that there is a negative relationship between bank earnings and compliance costs. This relationship is, however, found not to be strong. The computed coefficient of determination indicates that compliance costs represent about 3% only of the bank earnings variation in the country. This implies that a large proportion of the variation is explained by other variables.

INTRODUCTION

Banks and financial institutions are always subjected to a wide array of regulations intended to ensure that they are not excessively exposed to individual customers or on individual transactions. Similarly, they are required to have an adequate capital base and liquidity position as well as good quality assets. Additionally to that they are expected to avoid excessive foreign currency exposure, have sufficient and stable earnings as well as good quality management.

The regulation and supervision activity in some cases goes hand in hand with the establishment of a deposit insurance fund, which is usually used to compensate depositors in the event of insolvency.¹ All the above highlighted measures are taken to minimize the social costs of banking panics, which normally cause banking system insolvency (Gorton 1994).

In Tanzania, the Bank of Tanzania is charged with the responsibility of regulating and

supervising banks and financial institutions.² The main objective of the Bank in this activity is to maintain the integrity of the banking sector and therefore the confidence of the general public on it.³

An overview of the banking sector regulation and supervision in Tanzania

At independence, branches of foreign commercial banks comprising mainly Standard Bank of South Africa, National and Grindlays Bank, and Barclays Bank dominated the banking sector in Tanzania. Other smaller foreign banks that operated in the country included Ottoman Bank of Africa (1958), Bank of India (1953), Bank of Baroda (1953), Commercial Bank of Africa (1961) and National Bank of Pakistan (1962). The non-bank financial institution at that time was the Post Office Savings Bank (POSB).⁴

Before nationalization of banks in 1967, the law that governed banking business in the country was the Banking Ordinance Cap. 430 of the laws of Tanzania. Unfortunately, there was not much in the law that empowered the supervisory authority (Bank of Tanzania) to conduct on-site examination nor call for periodic off-site returns. After nationalization of the then existing branches of foreign banks, insurance companies and non-bank financial institutions, the banking ordinance was rendered ineffective, as it could no longer apply

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¹ In this paper, the use of the terms regulation and supervision follow the definition found in Spong (1990), page 5 footnote: "Banking regulation in its strictest sense refers to the framework of laws and rules under which banks operate." Narrowly defined, supervision refers to the banking agencies' monitoring of financial conditions at banks under their jurisdiction and to the ongoing enforcement of banking regulation and policies.

For an appropriate definition of banks and financial institutions in Tanzania, see the Banking and Financial Institutions Act 1991 (BAFI ACT 1991) as amended in 1995 and the Bank of Tanzania Act, S.3 and S.3 (ii) of 1995.

³ The word Bank refers to the Bank of Tanzania.

⁴ Bank of Tanzania (1996)

to the nationalized institutions.

In 1966, the Bank of Tanzania (BOT) came into being following the passage of the BOT Act 1965, four years after independence. The power of the BOT to inspect banks and non-bank financial institutions and require them to provide information was limited, save for the amendment to the Act in 1978 when visitorial powers were included. Even after those amendments, the power to issue prudential regulations of general application were not expressly provided for in the law.

The enactment of the Banking and Financial Institutions (BAFI) Act 1991 aimed at correcting most of the inadequacies and strengthened the position of the Bank of Tanzania as the supervisory authority. In April 1995 the BOT Act of 1965 as amended in 1978 was repealed and replaced by the Bank of Tanzania Act 1995, expressly specifying the functions and objectives among others, of regulating and supervising banks and financial institutions in Tanzania.

The Cost Element in Banking Supervision

The role of banks and financial institutions in an economy is to provide means by which funds can be transferred from surplus units in the economy to deficit units. However, in order to have a safe and sound banking system the activity of intermediation is placed under prudential regulation and supervision of central banks and other regulatory agencies.

These regulations constitute unavoidable costs to supervised institutions. In Tanzania, as a result of this, some institutions had to undergo financial, organizational and managerial restructuring between 1992 - 1996 in order to qualify for a banking license; especially state owned banks. This was a cost to the institutions and the Government as well.

The costs of complying with regulatory requirements and prohibitions are a major problem for banking today. These costs include explicit costs of meeting regulatory requirements and the implicit costs imposed by regulatory prohibitions (Jordan *et al* 1994). Regulations are normally imposed with good intentions. But if that is the case; why then are the costs of complying with banking regulation and supervision considered a problem? It is considered a problem because banking regulation and supervision if not well

implemented entails substantial costs. These costs in effect constitute a tax on the banking business. It is a burden, which is shared by investors in the form of reduced market valuations of their investment; by employees in the form of lower real wages; and by customers in the form of higher interest rates paid on loans and lower interest received on savings.

These costs also lead to a diminish in the delivery of intermediary services thus resulting into businesses and households suffering a reduced menu of financial services. Indeed the entire economy is harmed to the extent that regulation lowers efficiency of the financial system and therefore the real growth potential of the economy. Following the above problem, this paper seeks to establish the magnitude of the regulatory and supervisory compliance costs to banks and financial institutions in Tanzania as well as to determine whether or not the magnitude is significant.

LITERATURE REVIEW

The business of banking has become more complex and diversified, especially in the range and type of services and products, hence more risky over time. Probably this is the reason for fewer bank failures during 1970's and many recent failures despite the strengthened supervision and regulation. So far in Tanzania we have had four cases of banking crisis since 1993.⁵

Banking regulation and supervision certainly reduces risks of loss to depositors and other creditors, thus bringing about confidence and minimizing systemic consequences in the financial system, contrary to a situation where there is no supervision. One of the major purposes of banking regulation and supervision is therefore, the promotion of the banking sector safety and soundness in order to protect customers, the deposit insurance fund and the tax payers from banks and financial institutions failures.

Gorton (1988) for instance argues that regulation is important because the combination of loans financed by demand deposits has historically, been a volatile mix leading to costly banking panics. Calomiris and Gorton (1991) also support this argument. Similarly, Bernanke

⁵ The four cases are those of: Meridian Biao Bank; Trust Bank; Greenland Bank and First Adili BanCorp.

(1983) argues that if the banking system becomes insolvent, potentially large costs are borne because the payments system is disrupted, borrowers become illiquid and information about borrowers is possibly lost.

Despite the importance of the banking system regulation and supervision, Jordan *et al* (1994) argues that this activity imposes costs to banks and financial institutions. For example, various studies have estimated that the costs of regulatory requirement range from 6% to 14% of US's commercial banks non-interest expense.⁶ There is an indication from these studies that the banks' non interest expenses were US\$ 130.9 billion in 1992 suggesting that their regulatory compliance costs in that year were between US\$ 7.9 billion and US\$ 18.3 billion. That compares with industry earnings in 1992 of US\$ 32.2 billion.⁷

According to Shaffer *et al* (1994), these are explicit compliance costs of banking supervision and regulation. These estimated costs of regulatory compliance exclude three important categories of implicit costs that are difficult to quantify. The first one is the opportunity cost of holding excessive non-interest bearing reserves with the Bank. Fama (1985) and James (1987) argue that in the past this cost was borne by borrowers because bank loans did not have good substitutes and therefore borrowers were willing to bear this cost.⁸

The other implicit costs include the additional requirements mandated by the deposit insurance fund as well as the costs to banks, financial institutions and the economy of forgoing the profits and efficiencies that would have resulted if banks and financial institutions were not prohibited from various activities and locations.

Further evidence that regulatory and compliance costs are significantly high comes from the US where several bills were introduced into the Congress seeking to reduce this regulatory burden.⁹

⁶ See Federal Financial Institutions Examinations Council of US, 1992: C-15

⁷ Bank earnings and non-interest expense data are from the US Federal Deposit Insurance Corporation 1992.

⁸ The lack of good substitutes for bank loans says that bonds and bank loans are quite different securities. See Gorton and Kahn (1994).

⁹ See H.R. 59, H.R. 269 and S. 265 of the US Congress 1993a; 1993b; 1993c.

Although large costs *per se*, do not prove that regulation is unwise, the indication that there are significant high costs of compliance does strengthen the case for a cost-benefit analysis of bank regulation. Even if the benefits of regulation were to exceed the costs, the assumption that these costs are significantly high calls for an empirical investigation to determine their impact on banks and financial institutions' operations in Tanzania. Goodhart and Schoenmaker (1995) argue that if a low frequency of bank failures was for example the result of a tight regulatory and supervisory system, one might be able to justify the high costs.

However, in practice this is not the case. For instance, a study of bank failures by Goodhart and Schoenmaker (1993) found that there were 104 major bank failures in 24 countries during the 1980s and early 1990s with a few important cases taken from the 1970s. In Tanzania so far, little has been done in terms of research to identify the different types of banking supervision and regulation compliance costs as well as to determine their magnitude and impact on the earnings of banks and financial institutions. This could be attributed to the fact that the liberalisation of the financial sector took place only a few years ago. Prior to that the banking sector in this country was dominated by a few (state) banks and at the same time the law that governed the banking business limited the powers of the Bank of Tanzania to supervise and regulate banking activities. This paper, therefore, attempts to analyze and determine whether there is a significant impact of compliance costs on the operations of banks and financial institutions in this country.

HYPOTHESES

In order to determine whether or not regulation and supervision compliance costs have a significant impact on the financial system's efficiency, the following assumptions are tested.

- 1) There exists a negative relationship between compliance costs and bank earnings;
- 2) Significant compliance costs lower the efficiency of the financial system.

METHODOLOGY

In the process of analyzing and determining the impact of compliance costs to banks and financial institutions, data on explicit and

implicit costs is used from six banks.¹⁰ The time frame covered by this analysis is 4 years, from 1993 to 1996.

Data analysis

The analysis done used the following summarized research model.

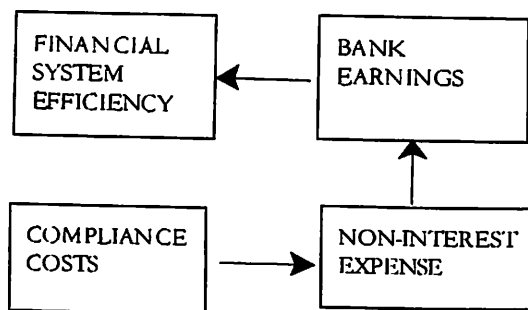


Fig. 1: Research model as postulated by the hypotheses of the study

Source: Model formulated by author from the hypothesized relationship between the identified research variables.

The above figure depicts a diagrammatic representation of the postulated relationships between compliance costs; non-interest expenses; bank earnings and financial system efficiency. This is the basic model for analytical purposes. The paper employs econometric methods to analyze the data. Multiple regression analysis is initially employed to investigate empirically the relationship between compliance costs, non-interest expenses and bank earnings. The basic equation estimated using the applicable data is:

$$BE_t = a + \beta_1 CC_t + \beta_2 NIE_t + \varepsilon_t \dots (1)$$

Where:

- BE_t = Bank earnings (dependent variable)
- CC_t = Compliance costs
- NIE_t = Non-interest expenses;
- a = Constant parameter (an estimated value);
- β_1 = Coefficient for the compliance cost variable;
- β_2 = Coefficient for the non-interest expenses variable;
- ε_t = Unobserved error term assumed to be a random variable.

The t-subscript refers to the observation number and varies from 1 to T, where T = 24.

Operational definitions

a) Bank Earnings

This is the dependent variable as indicated in the postulated hypothesis. The variation of the independent variables influences the movement of this endogenous variable. For the purpose of this paper, this variable is taken to be bank earnings before tax.

b) Non-interest Expenses and Compliance Costs

These are explanatory variables (independent) of the model whose movement influences the level of bank earnings.

Research Findings and Implications

As indicated in the methodology, the paper applies economic analysis tools to investigate the existence and nature of relationship between compliance costs, non-interest expenses and bank earnings. Multiple regression analysis and later on bivariate analysis techniques were employed to analyze the data. Initially a multiple regression technique is applied. However, after undertaking a test for multicollinearity for the explanatory variables, one of the explanatory variable was dropped following the discovery of an approximate linear relationship between the two independent variables (see table 1).

Table 1: Correlation coefficients between pairs of independent variables and the dependent variable.

	Bank earnings	Compliance costs	Non-interest expenses
Bank earnings	1.000	-0.1778	-0.3519
Compliance costs	0.1778	1.000	0.6933
Non-interest expenses	-0.3519	0.6933	1.000

Source: compiled by author.

The correlation coefficient between compliance costs and non-interest expenses is close to +1 (approximately +0.7) which implies that it is near multicollinearity.

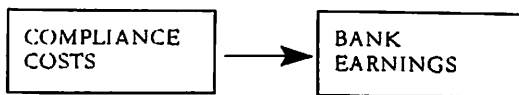
Correlation analysis

From the results of the estimated regression model it is apparent that compliance costs are negatively correlated with bank earnings. The corresponding correlation coefficient between bank earnings and compliance costs is -0.1778. This implies that bank earnings move opposite to the movement of compliance costs, that is to say, as compliance costs increase, bank earnings fall.

Since the test for multicollinearity between the two independent variables returned a correlation coefficient of close to +1, which is a property of near multicollinearity, then one of the two explanatory variables is dropped.

Of the two variables, non-interest expenses being more of an intermediate variable between compliance costs and bank earnings is dropped leaving the following reduced model of the relationship between bank earnings and compliance costs.

Fig. 2: A reduced model of the relationship between bank earnings, and compliance costs.



Source: Reduced research model formulated by author from figure 1.

Given this development, bivariate analysis is used with the following basic equation:

$$BE_t = a + \beta_1 CC_t + \varepsilon_t \dots (2)$$

Where:

- a = A constant parameter (an estimated value)
- β_1 = Coefficient for the compliance cost variable (the regression coefficient);
- ε_t = Unobserved error term assumed to be a random variable;

The t-subscript refers to the observation number and varies from 1 to T, where T = 24.

$$\beta_1 = \frac{n(\sum CcB\Sigma) - (\sum Cc)(\sum BE)}{n(\sum Cc^2) - (\sum Cc)^2} \dots (3)$$

and

$$a = BE_m - \beta_1 CC_m \dots (4)$$

Where;

- β_1 = Regression coefficient
- a = Constant parameter (estimated value)
- BE = Bank earnings (dependent variable)
- BE_m = Mean of the dependent variable (mean of bank earnings)
- CC = Compliance costs (independent variable)
- CC_m = Mean of the independent variable (mean of compliance costs)
- n = Number of observations

Regression Analysis

Regression analysis was carried out and the results obtained while constructing the single equation model are summarized in table 2 below. This table contains the regression coefficient of the independent variable of the estimated equation. The respective t-statistics are in parentheses.

Table 2: *Compliance costs and bank earnings: econometric results.*

Variable	Constant	Compliance costs
Coefficient	251.40	-33.20
t-statistics	(1.4190)	(1.720)

- R² (coefficient of determination) = 0.032
- SER (standard error of regression) = 0.4
- n (number of observations) = 24
- df (degree of freedom) = 23

Source: Computed using data from appendix i

Hypothesis testing

A test on the regression coefficient of the independent variable is done in order to examine the hypothesized relationship between the dependent variable and the independent variable. This is a test of the hypothesized claim on the sign of the regression coefficient. The regression coefficient variable is -33.2 (see table 2). Testing the hypothesis implies in this case determining whether the coefficient is significant and is of the theoretically hypothesized correct sign.

Accordingly, this is a testing of the first proposition of the paper. The null hypothesis H₀ (that there exists no relation between bank earnings and compliance costs) is tested against the alternative hypothesis H_A (that there exists a negative relation between bank earnings and compliance costs). The acceptance or rejection of the null hypothesis H₀ depends on the result of the comparison of the computed t-statistic from the data with the critical value.

Therefore, the two hypotheses tested are:

$$H_0: \beta_1 = 0$$

$$H_A: \beta_1 \neq 0$$

The rejection region is:

$$t < -t_{\alpha/2}$$

or

$$t > t_{\alpha/2}$$

During the hypothesis test, the confidence interval chosen is 80% mainly for two reasons. First, it is due to the size of the computed coefficient of determination (R^2) being too small (about 3%); and second, though the correlation coefficient is negative, it is not significant.

According to the proposition of the study, it is argued that there exists a negative relationship between compliance costs and bank earnings. That is to say when compliance costs increase the level of bank earnings decreases. From table 2 it can be seen that the variable compliance costs is correctly signed as per our expectations. The calculated t -value is 1.720 while the critical value at 0.2 significance level is 1.319.

Interpretation

Basing on the results discussed in the preceding sector, the alternate hypothesis is accepted (the null hypothesis rejected) at 0.2 significance level. Generally, it is concluded that compliance costs play a role in explaining the variation of bank earnings in these particular model specifications based on the obtained set of sample observations.

However, the magnitude of the compliance costs is found not to be strong. This argument is justified by the findings of the coefficient of determination, correlation coefficient and the use of 80% confidence interval. The correlation coefficient, though negative is not significant (-0.1778). On the other hand, the computed coefficient of determination (which reflects the proportion of variation explained by the regression line) is very small (about 3%) implying that the variation of bank earnings in Tanzania is mainly explained by other variables and only by a small proportion due to compliance costs.

Limitations

Despite the completion of this study, there are some limitations that were encountered particularly in the process of data collection. More prominent is the reluctance of some financial institutions to provide data for various reasons. As a result of this not a single non-bank financial institution is included in the analysis.

Another limitation is the nature of the banking sector itself. A quick look at the number of banks and financial institutions today shows that almost half of them are not included in the study. This is mainly due to the fact that most of them started their operations quite recently and therefore it was not possible to include them in our sample. Despite of all these limitations, the study is not very much affected by the non-inclusion of these institutions because the sampled institutions covered almost 80% of the market share in the banking sector.

Finally, in some institutions the data given is in the form of cumulative figures for the entire investigation period. In this case an average is used to represent each year in the investigation period.

A discussion of the collected implicit costs in the process of data collection suggests that a number of implicit costs (unquantifiable costs) became obvious from the different banks covered by this study. These costs, though difficult to quantify, form a substantial proportion of regulatory costs to banks and financial institutions in Tanzania. The collected implicit costs from the study include the following:

a) *Time and money spent in the process of collecting and consolidating reports from different reporting units to the head office of an institution.*

Some of the banks have branches in different regions of the country, which means the reports, and schedules for submission to the Bank of Tanzania need input from these branches. This means more time and money is needed in order to meet the deadlines.

b) *Interest lost on statutory minimum reserve requirements*

All banks and financial institutions are required to maintain statutory minimum reserves with

the Bank of Tanzania. These reserves attract no interest. This means there is an opportunity cost on those reserves to the banks and financial institutions which is the interest income lost.

c) Suspension of other services in order to meet submission deadlines

In order to avoid penalties for late submission of the required reports and schedules to the Bank of Tanzania, banks and financial institutions are sometimes forced to suspend some of their services and concentrate on the finalization of reports. This is due to the heavy penalty imposed for failing to meet the deadline¹¹. The suspension of some of the services obviously leads to a loss of some income to the bank.

d) Restrictions of regional banks to expand out of the region

Regional banks are restricted to expand out of their regions unless they change their status. This regulation was put by Bank of Tanzania for good reasons. However, that does not deny the fact that by restricting these banks to go out of their region makes them loose income.

e) Interest lost on insurance deposit fund contributions

The requirement of contributing to the Deposit Insurance Scheme despite its good intention leads to similar problems just like those of statutory minimum reserves mainly because those contributions attract no interest.

f) Revenue lost due to legal lending limits

Among the regulations that are in the BAFI Act 1991 involve legal limits on lending to various sectors and individuals. These limits though imposed with good intention lead to loss of revenue that could be realized if those limits do not exist.

**CONCLUSION AND POLICY
RECOMMENDATIONS**

The fact that compliance costs have a negative relationship with bank earnings as confirmed

by the hypothesis test implies that increased compliance costs lead to reduced financial system efficiency. However, looking at the current level of compliance costs particularly the explicit ones in Tanzania, they appear not to be that much significant as explained by the correlation coefficient and coefficient of determination. Probably for the time being it is not justified to make a call for a reduction of these costs by the regulators. However, there is a need to address the aspect of implicit costs in an attempt to minimize them. One way of achieving this is by instituting some policy measures, which could include the following:

First, the Central Bank could consider the possibility of introducing a risk-based premium assessment system that will base deposit insurance rates on each bank's capital and supervisory rating. That is to say, the deposit insurance premium payable by a bank should depend on its capital and supervisory rating.

This system could provide an incentive for banks to improve the quality of their assets. By doing so, two purposes may be served. On one hand, the system could provide an incentive for banks and financial institutions to improve the quality of their assets thus improving their safety and soundness. On the other hand, by attaining a better rating, banks and financial institutions will be required to contribute less deposit insurance premiums, which means less opportunity cost.

Secondly, implicit costs could also be lowered using the CAMEL rating system. In this case banks that have top CAMEL ratings, that is, those that exceed by some 20 or 30 percent the thresholds currently used by the Bank of Tanzania for considering an institution to be well capitalized, could be given some relief from the frequency and intensity of examinations intended to enhance their safety and soundness¹². By doing so, an opportunity for gaining reduction in regulatory compliance costs may provide an incentive for less well-capitalized banks to improve their capital-to-assets ratios so as to qualify for this preferential treatment.

Finally the regulatory authorities should consider streamlining the number of reports and schedules as well as the frequency of submission for the same for those banks, which have a better CAMEL rating.

All in all, the above recommended policy measures should not be regarded complete in

¹¹ Bank of Tanzania charges T.shs. 1 million per day per report submitted after the deadline.

themselves but rather be considered as a starting point in the right direction towards a reduction of banking regulation and supervision implicit costs in the country.

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¹² The world over, most regulators consider a bank to be well capitalized if it meets the following criteria: (1) Total risk-based capital ratio is 10 percent or above; (2) Tier 1 risk-based capital ratio is 6 percent or above; (3) Tier 1 leverage capital ratio is 5 percent or above; and (4) The institution is "not subject to any...capital directive...to meet and maintain a specific capital level for any capital measure." See Federal Register (1992: 44,886). For definitions of these ratios, see Board of Governors of the Federal Reserve System (1989).

Appendix 1: Bank earnings after tax, compliance costs and non-interest expenses: 1993-1996 (T.shs.millions)

BANK	YEAR	Be	Cc	NIE	Be.Be	Cc.Cc	Cc.Be
PBZ							
	1993	-822	-3	-401	675,684	9	2466
	1994	3,348	-5	-895	11,209,104	25	-16,740
	1995	-2,030	-15	-902	4,120,900	225	30,450
	1996	627	-24	-1,285	393,129	576	-15,048
STAN-CHART							
	1993	-48	-8	-529	2304	64	384
	1994	820	-10	-1,350	672,400	100	-8200
	1995	5,621	-15	-1,973	31,595,641	225	-84,315
	1996	8,434	-17	-1,829	71,132,356	289	-143,378
CRDB							
	1993	-9437	-59	-3,780	89,056,969	3481	556,783
	1994	5,962	-90	-5,413	35,545,444	8100	-536,580
	1995	-17,770	-79	-9,510	315,772,900	6241	1,403,830
	1996	179	-50	-7,068	32041	2500	-8950
NBC							
	1993	8,540	-93	-3,283	72,931,600	8649	-794,220
	1994	8,540	-93	-3,283	72,931,600	8649	-794,220
	1995	8,540	-93	-3,283	72,931,600	8649	-794,220
	1996	8,540	-93	-3,283	72,931,600	8649	-794,220
CITI							
	1993	na	na	na	na	na	na
	1994	na	na	na	na	na	na
	1995	150	-12	-1,224	22500	144	-1800
	1996	2,631	-34	-2,142	4,588,164	1156	-89,454
KCB							
	1993	na	na	na	na	na	na
	1994	na	na	na	na	na	na
	1995	42	-7	-57	1764	49	-294
	1996	-47	-7	-175	2209	49	-294
SUM		31,820					
MEAN	1591						
STDEV	6522.3						

Source: Primary data collected from the respective banks

NOTES

1. PBZ - People's Bank of Zanzibar
2. STAN-CHART - Standard Chartered Bank Tanzania LTD
3. CRDB - CRDB Bank
4. NBC - The former National Bank of Commerce
5. CITI - Citibank Tanzania LTD
6. KCB - Kilimanjaro Co-operative Bank
7. Be - Bank earnings before tax
8. Cc - Compliance costs
9. NIE - Non-Interest Expenses
10. STDEV - Standard Deviation of the sample